



Department for Business, Energy and Industrial Strategy – Building our Industrial Strategy

Consultation Response

April 2017

Introduction from the Chairman, John Cridland CBE

Transport for the North welcomes the Government's ambition to deliver a high-skilled, competitive economy that benefits people throughout the UK and we are glad to have the opportunity to provide evidence and feedback on the Government's developing Industrial Strategy.

We know that the North of England will play a vital role in rebalancing the UK's economy over the coming decades and in ensuring that we build a sustainable and prosperous country that can take advantage of opportunities in the years to come. We have a vision for a well-connected North which acts as a magnet for inward investment, where skilled people can train and build a life-long career and where highly productive businesses flourish and grow.

We were glad to receive the Secretary of State for Transport's recent response to our proposal to become England's first Sub-national Transport Body. As the Rt Hon Chris Grayling MP confirmed in this response, TfN will play an essential role as a single voice for the North to develop both an increasingly prosperous future for the region and a more balanced economy for the UK as a whole.

As Transport for the North is a partnership of all nineteen Northern local and combined authorities and all eleven Local Enterprise Partnerships, we are well positioned to identify the conditions which drive or inhibit economic growth across the whole of the North, particularly when these relate to transport infrastructure.

In his response to our statutory status proposal, the Secretary of State highlighted that Transport for the North will provide the strategic view of investments that need to be made across the North of England. These infrastructure investments should unlock opportunities for economic development, providing access to quality housing, expanding employment and skills-development opportunities and reducing the congestion which inhibits growth across the region.

Evidence from the Northern Powerhouse Independent Economic Review shows the prize on offer for both the North and the wider United Kingdom: an economy that is transformed by 2050, with 850,000 extra jobs and an increase of almost £100bn in GVA if the right conditions are put in place.

We know that there are specific infrastructure investments required to deliver both the opportunities outlined in the Northern Powerhouse Independent Economic Review and the ambitions of the Industrial Strategy and we believe that these are in broad alignment.

The Northern Powerhouse Independent Economic Review identified the North's four unique prime capabilities: Advanced Manufacturing, Digital Technologies, Energy and Health Innovation. If the region's assets in these four prime areas were adequately linked, this would begin to drive transformational economic growth.

Just like the Government, we want to help to deliver a high-skilled, competitive economy that benefits people and where growth and opportunity are more evenly spread. We want to ensure that a young person who starts developing their skills in Sheffield's Advanced Manufacturing & Innovation District can continue their career at Leyland in Lancashire or Nissan in Sunderland. We want to allow a tech start-up at DigitalCity in Middlesbrough to draw on expertise from more established companies in Liverpool's Baltic Triangle or MediaCity in Salford. We want goods that are destined for the North arriving in one of our great ports with the ability of them being rapidly moved around the region, rather than coming into the South Coast and being trucked North.

We know that transport connections play an important role in supporting economic growth. With this in mind, we are developing a Strategic Transport Plan for the North (due to be published for public consultation in Autumn 2017). This is the first time that business and civic leaders from across the region as a whole will have agreed upon a plan and list of priorities for infrastructure investment. The plan will identify strategic corridors across the North where improved transport infrastructure or technology can drive growth.

We welcome the Government's commitment to the delivery of HS2 and we are keen to fully exploit the opportunity this provides to the North. The Northern Powerhouse Rail network (route options for which we are currently developing and prioritising) will both provide essential east-west rail connectivity for the North and link with HS2's planned infrastructure to maximise its benefits for the region.

We are currently developing a Major Roads Network for the North, identifying the routes (on both strategic and local roads) which are vital to growth in the region. Evidence from the three Northern Strategic Road Studies, which we are currently carrying out in partnership with the DfT and Highways England, will be used alongside our wider evidence base to inform this work.

We have also been developing the evidence base on freight and logistics needs in the North and the international connectivity capabilities and ambitions of the region. Evidence from these areas of work which is pertinent to the Industrial Strategy is included in this submission.

As Chair of Transport for the North, I want to reiterate the organisation's commitment to working closely with the Government as it develops its Industrial Strategy, which I am sure will closely align with our own Strategic Transport Plan.

John Cridland, CBE

Chair, Transport for the North

List of related documents

Submitted with this response

1. TfN Paper on Transport, productivity and rebalancing the UK economy

Additional evidence available on the Transport for the North website (www.transportforthenorth.com)

2. One North – Proposition for an Interconnected North – July 2014
3. The Northern Powerhouse: One Agenda, One Economy, One North - March 2015
4. National Transport Strategy – March 2015
5. Northern Transport Strategy Update – Autumn 2015
6. TfN Spring Update – March 2016
7. The Northern Powerhouse Independent Economic Review (NPIER) - June 2016
 - a. Appendix – Competitive Advantage and Sector Strengths
 - b. Appendix – Performance Gap analysis
 - c. Appendix – Local Area profile
 - d. Appendix – Panel Proposals
 - e. Appendix – Scenarios for future growth
8. Northern Freight and Logistics Report – September 2016
9. Independent International Connectivity Commission Report – February 2017
10. TfN Spring Update 2017
11. TfN Business Plan 2017/18

To be submitted at a later date

12. TfN Strategic Transport Plan – Position Statement (to be submitted following publication in May 2017)
13. TfN Major Roads Report (to be submitted following publication in May 2017)
14. TfN Integrated Rail Report (to be submitted following publication in May 2017)

Context of Transport for the North (TfN)

Our response to this consultation is framed around the two Pillars of Institutions and Infrastructure where the work of TfN can have the greatest impact on the national economy. However the place driven economic transformation which TfN is working to deliver runs through the entire industrial strategy. So whilst our responses to pillars 3 and 10 are more detailed and directly relate to TfN's ongoing activities (within its current role and remit), TfN is fully aware of the broader importance of transport as a driver for growth.

The key focus across this response includes, how TfN as a statutory, sub-national transport body can:

- Add value to the transport infrastructure sector (both public and private) – see responses to Pillars 3 and 10.
- Support transformational economic growth in the North through improving connectivity – see responses to other Industrial Strategy pillars.
- Ensure key transport enhancements and investments, which the Government can prioritise to ensure UK growth, work for the North – see response to Pillar 3.

Background:

Under the provisions of the Cities and Local Government Devolution Act, TfN in October 2016 submitted a proposal to become the first sub-national transport body in England, with the expectation to gain statutory status by the end of 2017. We welcome the Government's continued commitment to the devolution of transport powers as part of the Government's Northern Powerhouse and Industrial Strategy initiatives. TfN's role is to deliver long term strategic value for transport in the North, partnering with local and national Government, as well as the private sector.

To ensure strong institutional leadership for transport in the North, TfN have been careful to agree a sound economic assessment within which transport interventions in the North can be delivered. On behalf of the North, TfN commissioned the Northern Powerhouse Independent Economic Review (NPIER), published June 2016, which set out the economic position of the North and what can be done to support transformational economic growth. The IER represents the agreed single vision of the North's ambition, allowing TfN and its partners to form effective, and evidence driven, plans towards an ambitious, but vital target of re-balancing the UK's economy.

TfN is empowered by a pan-Northern Partnership Board representing political and business leaders from all 11 Local Enterprise Partnerships (LEPs) across the North, working together with Highways England, Network Rail, High Speed Two (HS2) Ltd and the Department for

Transport (DfT). TfN allows the North to speak with a collective voice on its strategic transport priorities, providing a crucial role, adding substantial value through enhancing the existing relationships between local and central government, whilst filling an important gap to plan and deliver the connectivity across the North required to underpin transformational economic growth. TfN can play a crucial role in strengthening the Government's work to develop and implement the Industrial Strategy.

TfN has defined a clear vision and a set of objectives. Over the years to 2050 and beyond, TfN will:

“Improve the frequency, capacity, reliability, speed and resilience of the North’s transport system to make it easier for people and goods to move throughout the North. In doing so, we want to create a globally competitive environment that can sustain economic growth for decades to come”

The outcomes of this approach is a stronger performing, coordinated pan-Northern economy where people and business can fulfil their full potential.

The need to work together to improve the North’s transport infrastructure is no longer being debated by our Partners. They understand why it needs to happen and why the north needs to speak with one voice. They agree on the benefits of agglomeration in driving competition, productivity and performance. This significant change in approach has been achieved in part through the review of local area profiles within the Northern Powerhouse. This included working with our Partners to understand the strengths of each part of the north, the potential synergies between growth sectors across the north and identifying the critical investments that can drive growth.

Our work now is focused on establishing the solutions needed and the most effective means for delivery. This growth driven strategy will ensure that TfN has a clear vision to drive transformational economic growth in the North of England by intelligently developing our transport infrastructure.

Through collaborative working with government, business, industry, and academic partners, TfN is currently developing an economic Strategic Transport Plan (STP) for the North. This will include an accompanying long term, sequenced Investment Programme, in order to align transport investment across the North in pursuit of delivering the economic objectives of the Northern Powerhouse. Much of this evidence is not available at the time of this submission, but we will share this evidence with BEIS and other Government department’s at the most appropriate time, to ensure we help drive national plans such as the Industrial Strategy.

As part of developing the first version of the Strategic Transport Plan, TfN is pleased to respond to the Government's Industrial Strategy Green Paper. We welcome the parallel engagement relating to the Northern Powerhouse Strategy and other Government consultations, which we will be happy to assist with. We also note creation of the National Infrastructure Commission (NIC) and the Government's commitment to longer term budget planning. We have engaged with the NIC in responding to their Call for Evidence separately to this response.

Chapter 1 questions

1. Does this document identify the right areas of focus; extending our strengths; closing the gaps; and making the UK one of the most competitive places to start or grow a business?

TfN welcomes the ambitions highlighted within the Government's Industrial Strategy Green Paper and the commitment to rebalancing the UK. It is critical that the Industrial Strategy fully recognises that transforming the North of England economy is a not just an outcome in its own right, but is a fundamental requirement to improving overall UK productivity and competitiveness.

The Northern Powerhouse Independent Economic Review (NPIER), published in June 2016, provided the first ever pan-Northern economic evidence that a higher-performing and more unified Northern economy can stimulate and sustain economic prosperity. The NPIER economic analysis demonstrated the benefits of a unified Northern economy can deliver.

The Review set out that by 2050, in a transformed North:

- GVA is projected to be 15% (£100 billion) higher than business as usual projections;
- Productivity would be 4% higher; and
- 850,000 additional jobs would be created.

The NPIER review outlined the scale, nature and causes of the North's gaps, distinctive 'capabilities' (pan-Northern collectives of sectoral, academic, skills and hard asset strengths of international substance) and future growth prospects for the area. These pan-Northern capabilities cut across sectors and are international-class assets. They consist of expertise, research and businesses that are distinctive for the North, are highly productive and can compete on the national and international stages. These capabilities account for around 2.1 million jobs (30% of jobs in the North) and over £100 billion in GVA (35% of GVA).

Four prime capabilities were identified:

- Advanced manufacturing – including materials and processes, and agricultural food production
- Energy – including generation, storage, and low-carbon technologies and processes (especially in nuclear and offshore wind)
- Health innovation – including life sciences, pharmaceuticals (R&D and production), medical devices, and e-health
- Digital – including high-performance computing, cognitive computing, software tools/design and content, data analytics (big data), computer simulation, and other strengths in media.

With three supporting capabilities:

- Financial and professional services
- Logistics – particularly linked to port activity and airport development, and good transport capability
- Education (primarily higher education) – research capability and technical expertise that underpins the prime capabilities, provides access to global networks, and also provides a supply of skilled labour and export strengths.

The role of these capabilities is also strategically significant in driving the jobs and growth in other sectors of the economy, particularly retail, construction, leisure and tourism, which in turn then generate significant jobs and productivity growth.

The NPIER was clear that ‘business as usual’ will not deliver the transformational economic growth required to ‘bridge the gap’. Improving pan-northern connectivity is the most critical issue facing the North’s ability to transform its economy. The North’s businesses and local leaders have set out the clear benefits of strategic long term planning and increased investment in connectivity across the North, starting with the One North prospectus in July 2014, through to the publication of the Northern Transport Strategy in March 2015, and subsequent Spring 2016 and 2017 updates. It is important that we lay this groundwork now to stimulate the economic growth.

Rebalancing the UK to meet the national productivity challenge

Both the Green Paper and Northern Powerhouse Strategy could have been stronger in acknowledging the very direct relationship between transforming the north, rebalancing the UK economy and improving our international competitiveness. This is both about the scale and importance of the north’s economy to our national prosperity, as well as the decisions the industrial strategy will need to inform about the future of infrastructure investment in the UK.

There is a clear rationale for rebalancing the UK economy, beyond those commonly assessed under standard appraisal. Beyond the dynamic economic impacts of investment, a broader or ‘wider-wider case’ for re-balancing relates additionally to the continued and likely increasing relative opportunity costs of continued investment in the South compared to other parts of the country. This is not an argument for restricting growth in the South, but rather providing and retaining resource in the North at the levels needed to grow and become counter-balance.

The industrial strategy should take into account that there are lower long-run opportunity costs of investing in the North rather than further increasing the concentration of activity in London and South East¹.

¹ Transport, productivity and rebalancing the UK economy: TfN internal paper (submitted)

2. Are the ten pillars suggested the right ones to tackle low productivity and unbalanced growth? If not, which areas are missing?

The Industrial Strategy's pillars are consistent with the broad economic context with which TfN have applied its long-term transformational planning. Improving the capacity and capabilities of connections across the North will stimulate benefits across the economic centres of the North. For the gap to be bridged, transformational improvements to the North's transport connectivity are critical, both between and within the cities.

Whilst we believe that our work most affects the Institutional and Infrastructure Pillars of the Industrial Strategy, TfN and its partners are clear that bridging the gaps in the UK's economy requires more than investment in transport alone. Any investment in transport needs to be supported by investment in skills development, enterprise, innovation and trade and investment. That is why our objectives, work to date, and this response refer to the wider aspects required for economic growth.

Productivity:

The NPIER Performance Gap analysis appendix indicated that productivity accounts for the largest proportion of the 'performance gap' with the rest of England. The main factors driving this were identified as:

- Insufficient high-skilled workers and too many low-skilled workers
- Not enough exploitation of innovation and technology
- Lower levels of investment
- Lower levels of enterprise (measured by business start-ups per capita)
- Lack of agglomeration
- Sub-optimal transport links and underinvestment in transport

There is a direct link between transforming connectivity and enabling the North's economy to thrive. Transport improves productivity by:

- Attracting and retaining highly skilled workers to live and work in the North.
- Opening up opportunities in the labour market by enabling longer distance commuting.
- Providing capacity to meet long-term demand, and to improve resilience and reliability across the network.
- Supporting current investment, and attracting foreign direct investment.
- Helping businesses to collaborate closely, and improving their access to their supply chains.
- Reducing operating costs.
- Enhancing the user experience.
- Enhancing trading opportunities.

- Enhancing the quality of life.

Labour Markets and Business:

Closely linked to productivity, is how businesses in the North can be better supported to grow and therefore enhance employment and economic growth. The NPIER Performance Gap appendix highlighted a persistent employment gap which has largely been stable over the past decade. The One North proposition for an interconnected North set out that better connectivity means improved journey time reliability, better travel quality and shorter journeys that will widen and strengthen the North's labour markets and improve business efficiency by:

- Stimulating business investment and innovation by supporting economies of scale and new ways of working.
- Achieving agglomeration economies by bringing firms and their employees closer to business rivals and partners.
- Enabling firms to access a larger labour supply and providing wider employment opportunities for workers and those seeking work.
- Increasing competitiveness through access to new and larger markets with the benefits of increased labour market specialisation.
- Reducing trading costs and using more efficient logistics networks.
- Strengthening the existing comparative advantages of the North as a place to do business.

Skills / Innovation:

It is vital we improve the prospects for skilled, mobile workers to make their careers in the North through good access to opportunities across the entire region. Skilled workers should have a choice of employment options and employers see competition for roles from a broad catchment area. This will enable the North to create new employment opportunities, retain and attract skills and talent, help re-balance the demographic shift to an older population and support the growth of innovative and entrepreneurial expertise seen across Northern cities. The right people with the right skills will be fundamental to the success of all of the pillars identified in the industrial strategy.

This is equally true for infrastructure: there is a need for substantial improvements in the North's skills base and graduate retention / attraction to ensure infrastructural changes are driven forward and opportunities taken up. The North is home to 27 universities, eight of which are ranked in the UK's top 50, attracting tens of thousands of students from across the UK and the world. This availability of talent offers an opportunity for skilled graduates to build a career in the same area as they are educated. The retention of these skills are therefore essential for the Industrial Strategy to be successful, as is making the North an attractive place for talent to move to from other parts of the UK and overseas.

It is proven that countries or regions which generate innovation, create new technological solutions and encourage adaption grow faster than those that do not. That is why TfN's Business Plan sets out the intention to harness innovation and disruptive technologies, (such as innovative projects led by our Universities) and encourage smart technology use towards transport. It will also allow the distribution of goods and leisure activity into, within, and out of the North.

Quality of Life:

Creating and sustaining transformational economic growth requires a high quality environment in which the businesses of the future will want to invest and where individuals have access to opportunities including employment, education, healthcare and other services. This plays an important role in the quality of life in the region, making it a more attractive place to live and work whilst giving more people access to the high quality built and environmental assets of the North.

The North of England is also host to some of the most iconic places in the UK. The strength of its visitor economy (with 5 national parks; important cities; major historic towns and centres and major sporting venues) is a key enabler for economic growth. Therefore providing efficient and reliable interconnectivity, both from international gateways and across the UK, can support needs for businesses and generate new opportunities for inbound tourism.

The long term sustainability impacts of transport infrastructure investment is therefore a key consideration for TfN.

Trade and Investment:

Trade, Foreign Direct Investment and Inward Investment are vital if the UK businesses are to succeed, in particular following the decision to leave the EU. Strengthening existing and supporting new trade links will require global connectivity which allows access to our key assets. The International Connectivity Commission published their independent findings on opportunities to support our airports and ports in providing vital global trade and investment. The Commission's report highlighted the importance of focusing on the ease of which international passengers and freight can access key points in the North effectively and efficiently.

All these things mean a more productive northern economy, which means higher wages, profits and tax receipts for the Exchequer.

3. Are the right central government and local institutions in place to deliver an effective industrial strategy? If not, how should they be reformed? Are the types of measures to strengthen local institutions set out here and below the right ones?

TfN have proved successful in bringing its Northern partners together during development of the first sub-National Strategic Transport Plan. This step change needs to be replicated in delivering the connectivity changes which are required to harness the significant capabilities across the North and drive economic growth. TfN wants to deliver a reliable, resilient and faster pan-Northern transport system which is better integrated and more agile to changing demands.

In March 2017, the Secretary of State for Transport supported TfN's formal proposal to become the first Sub-National Transport Body in England. The proposal was collectively endorsed by all of TfN's Partners and set out the range of powers for TfN to ensure that the required connectivity improvements can be delivered. It is seen as an exemplar, a model for future governance arrangements relating to transport, and could be applied to other sectors over time.

The integrated approach to economic, spatial and transport planning at a Northern level that TfN is adopting in the Strategic Transport Plan is unique for the UK, and enhances the ability of the North to capture additional investment and align funding streams. This means that investment proposals will be growth driven and supported by a long term focused evidence base. A long term programme will provide greater certainty, thus providing greater confidence to public and private investors and supporting the development of the wide range of skills needed to develop, deliver, operate and maintain the transport investments.

However, the efficient delivery of the required transport investments requires the devolving of budgets, as well as decision making. It is important that STB powers allow for the co-ordination and funding of pan – northern transport schemes, a model which has seen success for TfGM and Greater Manchester, and TfL and the Greater London Authority.

4. Are there important lessons we can learn from the industrial policies of other countries which are not reflected in these ten pillars?

No response

Pillar 1: Investing in Science

5. What should be the priority areas for science, research and innovation investment?

TfN support the formation of UK Research and Innovation (UKRI), which will bring together the 7 Research Councils, Innovate UK and Higher Education Funding Council for England (EFCE) to foster a more strategic and interdisciplinary approach to UK research and innovation. TfN will work with UKRI in any future consultation and with wider Government to ensure additional R&D funding is used effectively on priority investments.

The NPIER indicated that higher levels of productivity, innovation and enterprise across the Northern economy can be capitalising on through the collective Northern strengths in each prime capability (Health Innovation; Energy; Advanced Manufacturing/Materials; and Digital). The North's capabilities and the variant strengths across the region are ideal to test new innovative projects. In many areas it is already acting as a test bed for certain innovation projects. The TfN Business Plan sets out the intention of 'delivery of a sustained and visionary investment programme across the North to build infrastructure, strengthen skills, harness innovation and encourage smart technology'. To do this, TfN will aim to use its strong partner connections across the North to promote research and innovation of disruptive technologies in the transport industry.

Innovation can be a stimulus for economic growth on two fronts. Firstly, innovation has the potential to increase the capacity and capabilities of our existing transport infrastructure. Finding ways to embrace new solutions and harness efficiency from our networks will allow the North to live within its environmental, demographic and financial limits, whilst supporting economic growth in the North. Secondly, by embracing innovative solutions now, TfN can influence future infrastructure captured by long term planning. Both of these uses can result in better customer outcomes and experiences; more efficient choice of transportation options; and the use of technology to influence demand.

The research capacity of the North provides a vital enabling capability with significant facilities, levels of knowledge and centres of expertise. Research Groups such as the N8 Research Partnership (a collaboration of the eight most research intensive Universities in the North of England: Durham, Lancaster, Leeds, Liverpool, Manchester, Newcastle, Sheffield and York) should be supported to ensure the UK's R&D offer keeps pace with global competitors. The N8 aims to maximise the impact of this research base by:

- promoting collaboration
- establishing innovative research capabilities & programmes of national and international prominence
- driving economic growth

Investing in R&D and innovation will provide a reliable pipeline of skills which (if retained in the North) should attract and retain employers. With the North's digital and other innovative capabilities growing, there is an opportunity to harness this research and innovation and use the North as a test bed to strengthen the UK's competitive advantage globally. An example of this is work on electric vehicles led by Newcastle City Council and North East region. This Government funded centre of excellence is a national leader in the provision of infrastructure for electric cars, with the university spear heading global research into electric vehicle use. Another example is the testing of beacon technology in both the West Yorkshire Combined Authority and Greater Manchester.

6. Which challenge areas should the Industrial Challenge Strategy Fund focus on to drive maximum economic impact?

The NPIER Performance Gap analysis outlined a persistent innovation and technology gap which increased in the mid-1990s but which stabilised since the early-2000s. Although there is evidence of this gap closing (through a growing digital and innovation capability), the review outlined that a consistent gap could 'lead to missed opportunities with good ideas not being exploited, assets and capabilities not fully developed, and resources being channelled sub-optimally'.

In developing a sound evidence base for connectivity planning and investment, the North has identified the key sectors which can, if supported, drive transformational economic growth. TfN suggest these are the sectors which the Challenge Strategy Fund should focus on to drive maximum economic impact. These broadly align with the Industrial Strategy's areas of focus.

Some local areas in the North have adopted a 'Smart Specialisation' approach in their documentation during recent years. These sector strengths are outlined within the NPIER Competitive Advantage and Sector Strengths appendix. Many of the sectors identified under this approach align with those listed within the NPIER, and demonstrate common specialities across the North in sectors such as Advanced Materials and Manufacturing, Energy and Creative and Digital. For example:

- **Digital** - e.g. Gaming and Satellite Communications in Leeds City Region, Big Data and Data Analytics in Leeds, Liverpool and Sheffield, and Computing and Software in Manchester, the North East, Tees Valley and Sheffield (including with links to Engineering Design).

- **Healthcare Technologies** - such as e-Health/Assisted Living in Liverpool, Medical devices in the Leeds and Sheffield City Regions, and Health Analytics and Clinical Research in Liverpool, Manchester and Sheffield.
- **Life Sciences** - including Pharmaceuticals, for example in Cheshire and Warrington, Hull and Humber, Greater Manchester, and the North East.
- **Energy** – see answers to Pillar 7.
- **Advanced Manufacturing and Materials** - which ranges from Automotives in the North East, Cheshire and Warrington and Liverpool City Region, Aerospace in Lancashire, Offshore Engineering in the Tees Valley and High Precision Engineering in Sheffield City Region, through to Chemicals in Cheshire and Warrington, Lancashire and Hull and Humber, marine engineering in Cumbria, graphene and advanced 2-D materials in Greater Manchester, and Advanced Manufacturing/Engineering Technical services in Sheffield City Region and Cheshire and Warrington.

The NPIER noted that, ‘ Big Data and data analytics, in conjunction with other capabilities, e.g. sensors, and robotics (Advanced Manufacturing), and the opportunities being created in health devolution (Health Innovation), will drive fascinating new process, product innovations, and service delivery models. These cross overs and synergies will generate cost efficiencies in design/modelling/prototyping and delivery, and promote increased productivity across the whole economy. The North is ideally placed to build on its strengths and generate the discoveries and showcase world leading innovation.

The research and development capabilities of the North’s universities can also provide a vital contribution to these specialities with significant research capacity, knowledge excellence and facilities.

- 7. What else can the UK do to create an environment that supports the commercialisation of ideas?**
- 8. How can we best support the next generation of research leaders and entrepreneurs?**
- 9. How can we best support research and innovation strengths in local areas?**

TfN’s pan-Northern approach to transport connectivity will have an agglomeration effect for the North, connecting the knowledge and business sectors, as well as supporting start-ups and entrepreneurs. Examples of the benefits of clustering Northern business and university solutions include:

- Collaboration between Boeing and Sheffield University – in the Advanced Manufacturing Research Centre.

- The aerospace and defence industry in Lancashire and Barrow, which is linked to materials and process R&D in Greater Manchester and Sheffield.
- The nuclear energy industry, with power plants in Cumbria, Tees Valley and Lancashire, linked with R&D across numerous local regions in the North.

This increased inter-connectivity can provide an opportunity for the commercialisation of university research and innovation to the benefit of the North's business base.

Other benefits of an inter-connected North are an increased competition for skills and the retention of labour and knowledge. Businesses can be more efficient as they become more connected. Better connectivity drives increased competition as markets become more accessible. Competition breeds employment opportunities as businesses look to take advantage of a more mobile workforce. This in turn provides choice and opportunity for the Northern worker or entrepreneur to make a living in previously difficult places to access.

To access these benefits, there needs to be close collaboration between public (local and national) and private sector. The most compelling current example of collaboration is within TfN's Smart North programme of work. TfN wants to dramatically improve the customer experience on public transport. It has a vision for simplified fares, integrated ticketing and payments and improved passenger information. This will mean allowing someone to make a contactless payment for their train travel, arrive in a northern town or city, and make a further contactless payment to take a tram or bus journey to their final destination. All of this will be possible with the confidence of a 'fair price promise' and real-time journey planning information available for passengers.

International connectivity to/from the North can also enable our businesses and research centres to build important global partnerships and for international investors to access assets particular to the UK. To make this possible, we need to foster greater global links across the North of England, offering improved access to worldwide markets, with our airports and ports acting as international hubs to the North for passenger (business and visitors) and freight economies. We provide more information regarding international connectivity and trade within responses to pillar 6.

Innovation can play a key role in using our pan-Northern connections more wisely, both in supporting decision making through better information; and physical changes such as digital railway or traffic management systems. The role of data, and how we use it to make informed decisions, for both planning and reacting to transport demands is important. Pro-active use of data to manage our use of infrastructure and underpin the concept of a connected North. For pan-Northern interventions to make a real difference, we need to understand the customers' needs when travelling across the North. For example, a digital investor flying long haul into Manchester airport, for a meeting in Liverpool, and then travelling onto the Lake District for the weekend. In this example, the question for TfN is how we connect the user most effectively, across modes and local areas, to allow easy

access and a choice of connectivity options. Using data and other innovative tools to map the many variant journeys will be important as TfN looks to add value through its planning progresses.

Pillar 2: Developing Skills

- 10. What more can we do to improve basic skills? How can we make a success of the new transition year? Should we change the way that those resitting basic qualifications study, to focus more on basic skills excellence?**

No response

- 11. Do you agree with the different elements of the vision for the new technical education system set out here? Are there further lessons from other countries' systems?**

No response

- 12. How can we make the application process for further education colleges and apprenticeships clearer and simpler, drawing lessons from the higher education sector?**

No response

- 13. What skills shortages do we have or expect to have, in particular sectors or local areas, and how can we link the skills needs of industry to skills provision by educational institutions in local areas?**

Alongside transformational transport connectivity, the North will require substantial improvements in the North's skills base and graduate retention and attraction, as well as higher levels of innovation and inward investment. The NPIER Local Area profile provides an overview of local area analysis.

TfN's Strategic Transport Plan will identify gaps and opportunities for transport developments, however it will be those skilled in infrastructural supply and installation who will deliver these important changes. With HS2, Northern Powerhouse Rail, Road Network improvements and other schemes in the pipeline – it is vital we have a similar pipeline of skilled labour and new approaches available.

There are also shortages to tackle outside of transport construction. The National Skills Academy for Rail (NSAR) forecasts core skills shortages in signalling and telecommunications, electrification and plant, traction and rolling stock.

Having the right skills sets available across all sectors is vital to any long term investment planning. In terms of transport infrastructure, TfN support the Governments Infrastructure Skills Strategy and the intention to drive jobs and skills in transport sectors across the UK. This report highlighted a skills shortage and gap within the transport industry and TfN welcome initiatives like the Rail Skills Plan to reduce skills shortages and support the implementation of new technologies, as technical education is as crucial to the delivery of infrastructure as academic education.

The ability to forecast skills development can be supported by the long-term planning for infrastructural developments which TfN are developing. TfN also understand the opportunities for transport to collaborate with other sectors, sharing knowledge and skill sets. By understanding this demand and working closer with businesses and educational providers we can then also help shape provision to meet that future demand, which will be critical to the deliverability of the infrastructure plans.

The Chartered Institute of Logistics and Transport Vision (CILT) 2035 set out a vision for future training and development within the Industry. This predicts that transport and logistics will be increasingly networked and mobile, with just in time learning accelerating within logistics especially. CILT envisage that there will be increased harmonisation of transport, logistics and supply chain qualifications across the world, with shared global standards allowing professionals to be more mobile to meet employer needs in a global market place.

We also reference the Northern Powerhouse Partnership report who pointed to skills as a priority for the North. They plan to commission a group of leading employers and education experts to draw on evidence and thinking to examine skills issues to tackle.

14. How can we enable and encourage people to retrain and upskill throughout their working lives, particularly in places where industries are changing or declining? Are there particular sectors where this could be appropriate?

TfN supports the commitments made within this Green Paper to increase opportunities to encourage transport (and wider infrastructure) as a career of choice. Connectivity across the North can support skills and learning within the key sectors for transformational economic growth, including Energy, Advanced Manufacturing, Digital and Health innovation.

Whether it's giving young people the information they need to access career options or encouraging lifelong learning – we need skilled people to build, maintain and operate our infrastructure. This is noted in the Government's Transport Infrastructure Skills Strategy which recommendation that Government ensure that competitive DfT local funding pots incentivise local authorities to encourage skills development. A combined skills strategy for DfT, Network Rail, Highways England, HS2 and TfN related interventions would enable the harmonisation referred to by CILT.

As noted elsewhere in this response, for the North to bridge the economic gap, it must retain the skills developed within the region, whilst being sufficiently magnetic to attract new ones. We need to create a single labour market that provides pan Northern opportunities for skilled workers to build a career in the North. Long term planning can give workers the confidence that skilled employment, in both transport and other sectors, will be available once they have completed their learning. Similarly, for those already in employment, it can provide an important stability and business investment in skills which will enable career progression.

Pillar 3: Upgrading Infrastructure

15. Are there further actions we could take to support private investment in infrastructure?

TfN supports the Government's view that infrastructure upgrades will be most effective through the public and private sectors working together. In establishing the solutions needed for transport infrastructure, as well as the most effective means for delivery, TfN is required to provide the collective civic and business voice to plan and secure investment.

The role for the public sector is in creating the market conditions which allow these improvements to be delivered. This is particularly so given that achieving transformational economic growth will require connectivity to lead rather than follow growth in the demand for travel, at least to a greater extent than today. This requires much greater certainty on the delivery of transport policy, planning and investments, supporting the private sector to make long term decisions and investments.

TfN's outputs should have consequent effects on private investors based in the North and more widely across the UK. Pan-Northern strategic planning will also support our local authorities to, in turn, support investment of the broader aspects of this green paper such as skills, employment and innovation. By focusing on agglomeration of our assets and increasing the ability for people to move and work around the region, LEP areas can attract

further private sector investment in infrastructure and the other pillars of the Industrial Strategy.

TfN will play a role in providing policy support for private investors across the North. We are engaging with its Partners to support developments in the industry and a reduction in any barriers for growth. For example, TfN and Rail North recently responded to the Hansford Review which is looking at the contestability in the UK rail market, third party investment and infrastructure delivery on national railway. It will also be important to meet the challenge and opportunity of Brexit, by understanding the impacts of the UK leaving the EU and what this means for private sector investment and employment.

How can the public sector support private sector investment?

TfN's long term Investment Programme will contain a mix of upgraded and new transport infrastructure, and the approach taken in the initial Integrated Rail and Major Roads Reports has been to identify where best use can be made of existing assets in the first instance.

Harnessing existing capacity:

Improving existing capacity is to use the infrastructure in a smarter, more efficient, way by analysing and planning transport interventions differently to historic processes. By offering the private sector a joined-up picture of what connections are available, they will gain confidence that they can access the markets they need to, whether domestic or international, workers or students, freight or tourists. TfN's strategic transport plan will begin to set out that multi-modal map of connectivity across the North and highlight the areas of existing capacity we can improve to achieve the economic benefits mapped in the NPIER.

An example of this is the approach taken in the Initial Major Roads Report. This has conceptualised the North's major road network as a ladder that only provides the requisite strength for transformational growth with a series of strong north-south routes and multiple "rungs" for east-west connectivity. At present, north-south connectivity in the North is generally seen as better than east-west connectivity, with one only one "rung" – the M62 providing the only continuous east-west dual-carriageway road from the Midlands in the south (A50 corridor) and Edinburgh/Glasgow (M8-A8 corridor) that crosses the Pennines. The prioritised portfolio of connectivity priorities within the initial Major Roads Report seeks to strengthen multiple east-west "rungs" to ease the demands on the M62, and provide access to a series of the North's economic assets at the same time.

Through TfN's long term Investment Programme, TfN can collectively work with Partners and the supply chain to identify areas on the transport network with which they may wish to invest in the future.

Rail North, a company owned by Local Transport Authorities in the North, has successfully made the case for a growth investment in the Northern and TransPennine Express rail franchises which operate most services in the North. By demonstrating the case for rail, the new franchises will introduce more than 500 new rail vehicles in the next 3 years with over 2,000 additional services being contracted. New “Northern Connect” routes will offer higher quality services on longer distance routes and TransPennine Express will provide faster and more frequent services linking the North’s main cities. Substantial increases in seating capacity will be provided and stations upgraded. Both franchises started in April 2016 and are being managed by a team based in Leeds jointly by Rail North and the Department for Transport through a partnership agreement. Rail North is being incorporated within TfN as part of statutory status.

Building new infrastructure:

Under a transformational economic scenario, there will inevitably be a need for new infrastructure, particularly where there is a need to improve inter-city region connections.

For example, the current rail network in the North dates from the mid-19th century and is severely constrained by geographical challenges, urban history and track capacity. Rail travel has grown rapidly with a twofold increase in passenger journeys since the mid-1990s, and the existing ‘two-track’ system in the North is no longer able to cope with demand. Projects such as HS2 and Crossrail have shown the transformational impact of new infrastructure is supporting economic growth, and TfN’s proposals for Northern Powerhouse Rail aim to replicate this approach across the North.

We have provided more information regarding these projects and TfN’s work towards strategic investments within the response to Question 16.

16. How can local infrastructure needs be incorporated within national UK infrastructure policy most effectively?

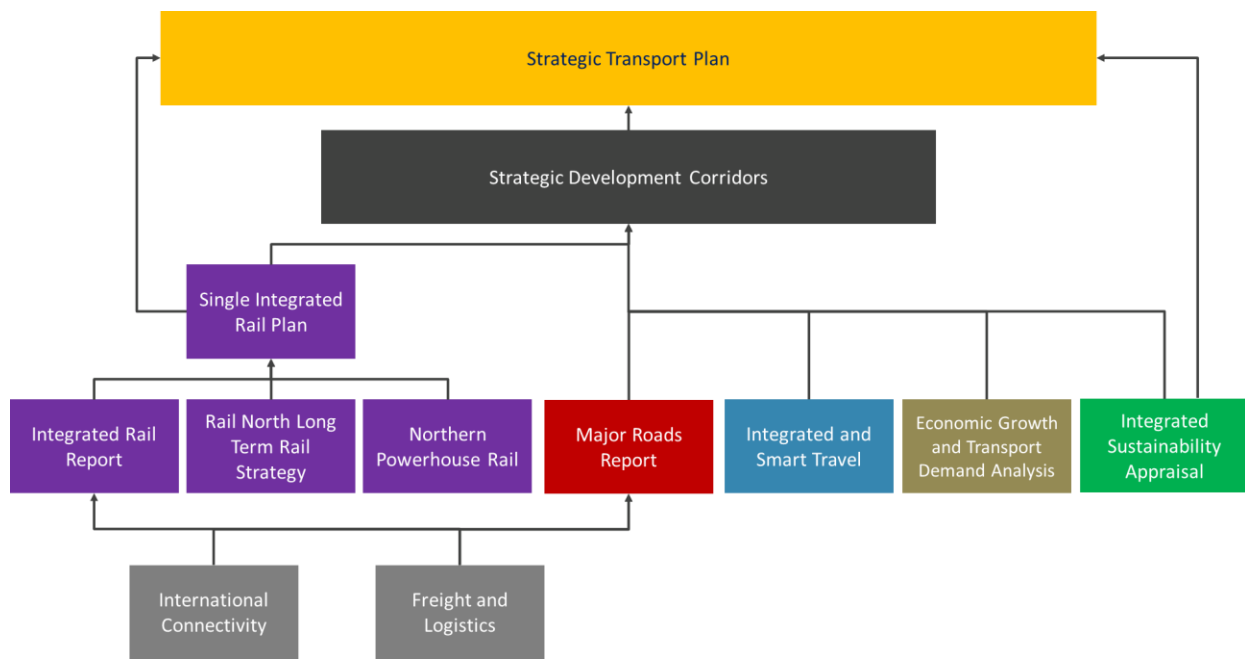
TfN represents an historic opportunity. For the first time, a collective voice from every part of the North have come together to agree upon the gaps in infrastructure that are holding the region back. The powers intended for TfN will enable us to promote, co-ordinate and fund local transport schemes. TfN will also have powers to deliver smart and integrated ticketing systems across the North. This collective voice and power will allow TfN to support private investment across the region.

Through work on the Strategic Transport Plan TfN and Partners are working together to define and agree pan-northern transport priorities, alongside integration with local transport and planning policies. This evidence driven work will continue as the Statutory Body relationship with Government is confirmed. TfN is already adding real and lasting

strategic value as an STB and it is vital that this analysis and planning is captured at a national policy level.

More detail on how the STP has been developed with our Partners can be found within responses to Pillar 10.

What the Strategic Transport Plan consists of:



i. Integrated Rail Report and Major Roads Report

TfN's long term Investment Programme will be a key part of the Strategic Transport Plan, and the outputs from two new and important pieces of evidence are providing a prioritised portfolio of connectivity priorities. Initial versions of an Integrated Rail Report and Major Roads Report have been produced to complement the previously published Freight and Logistics Report and the International Connectivity Commission's independent report.

The Integrated Rail Report has identified connectivity priorities for long term investment in the North's rail network, encompassing the latest proposals for Northern Powerhouse Rail prioritisation, Rail North's aspirations and franchise specifications, and the new Network Rail Northern Area Programme, to move towards a single plan for improving capacity, connectivity, coherence and cost effectiveness across the North of England.

The Major Roads Report (MRR), which is very much the result of collaboration between TfN, National and Local Partners, has identified pan-northern priorities for improved road connectivity and developed the concept of a Major Route Network for the North, which incorporates the Strategic Road Network, plus other major pan-Northern routes that

connect the North's important economic centres to provide a logical, coherent and integrated network that needs to be resilient, reliable and efficient.

Highway's England research for their 'Roads to Growth' Economic Growth plan demonstrates that sectors heavily dependent on the Strategic Road Network (SRN) employ 7.4 million people and contribute £314 billion in GVA to England's economy. These sectors are likely to grow by 35% by 2030 generating an additional £110 billion. These sectors are Logistics and Freight, Manufacturing, Wholesale, Retail, and Leisure and tourism. Combined they employ 2.13 million people and generate £77 billion GVA in the North, with advanced manufacturing, logistics and freight recognised as key growth areas in the NPIER.

Whilst vitally important in enabling economic activity the SRN only accounts for 2% of the road network, and for many of the North's economic clusters it is the rest of the transport network that does the 'door-to-door' job, including those first and last miles from the SRN.

TfN's role, through the STP, setting out a long term strategic investment programme is to work with transport industry partners (Highways England, Network Rail and others) and Local Partners to ensure that strategic transport connections work well across all functional and operational geographies. **TfN and Partners have shared information throughout the development of these reports and will continue to work together in shaping the Investment Programme in the North.**

In each of the new reports, connectivity priorities have been identified where it has been highlighted through the evidence base that improvements need to be undertaken to achieve a set of conditional outputs which support transformational growth. The conditional outputs have been developed with a view to developing a transport system that can support the economic growth envisaged in the Northern Powerhouse Independent Economic Review.

At this time, the initial reports set out those connectivity priorities that TfN, with its Partners, have targeted to meet the economic aspirations of the North, and also identify the business cases and strategic investment work that will be undertaken by TfN to support future iterations of the long term Investment Programme. They will be used to inform the development of the upcoming Road Investment Strategy 2 (RIS2) programme with Highways England and the Control Period 6 (CP6) programme with Network Rail.

As the Draft Strategic Transport Plan is prepared, these connectivity priorities will be reviewed to encompass the evolving needs of freight and international connections through airports and ports, and to understand how they complement more localised strategic interventions, as shown below:



In parallel to the production of the Initial Integrated Rail and Major Roads reports, work continues on a series of signature interventions that are part of TfN's remit.

ii. Northern Powerhouse Rail (NPR)

To support our vision for transformational economic growth, we believe that a new rail network for the North is needed, Northern Powerhouse Rail, providing fast and frequent links between the North's main cities and with Manchester Airport, its main international passenger gateway. Support for the Northern Powerhouse Rail network as a vital part of infrastructure in the North has continued to grow. Business and civic leaders are clear on the importance of these transformational proposals to drive economic growth in the North.

Northern Powerhouse Rail complements HS2 which will transform the North's connectivity to London and the Midlands. Current plans envisage a reduction in Manchester to London by about an hour. Stations served by Northern Powerhouse Rail and HS2 will be transformed into fitting gateways to the cities and towns they serve, integrated with other rail services and with masterplans to locate appropriate land use and developments around them.

Although Northern Powerhouse Rail will lead to a transformation in rail in the way the North has not seen, its real purpose is to support economic growth. Work done by TfN has shown that it has potential to fundamentally change business interaction and labour market supply.

- Our work has shown that Northern Powerhouse Rail will mean that 40% of businesses identified as having the North's prime highly productive capabilities (advanced manufacturing, digital, energy and health innovation) would be within 90 minutes rail travel of four or more of the North's largest cities, compared to only 12% today.
- Currently less than 10,000 people in the North can access four or more of the region's largest cities within an hour. Our evidence indicates that this would rise to 1.3 million once Northern Powerhouse Rail is delivered.

Working with the DfT, Network Rail and HS2 Ltd, TfN has identified a number of feasible engineering options that will either deliver, or move substantially towards meeting the conditional outputs for the Northern Powerhouse Rail network. These options have been prioritised using cost Value for Money benefits evaluation to allow more detailed option development.

The Northern Powerhouse Rail programme will now be prioritising engineering options for the network to ensure value for money and identify preferred options for different components of the network, including:

- Considering the feasibility and benefits of serving various other significant economic centres, which we believe will improve the business case for NPR, in addition to the six main cities and Manchester Airport.
- Exploring the synergies between NPR and HS2 to allow interfaces to be developed for inclusion in the HS2 Phase 2B Hybrid Bill;
- Phasing of delivery for the preferred network options and developing a Strategic Outline Programme Business Case including developing a wider economic case for NPR
- Working with local and industry partners to develop stations that are fitting gateways for the cities and towns that they serve, with integrated masterplans to support complementary development around the station.

By the end of 2017, TfN will develop a Single Integrated Rail Plan that will clearly set out what the North's needs from rail are and when they need to be addressed. This will build on the Integrated Rail Report, our thoughts on Freight and Logistics, the Rail North Long Term Rail Strategy, development of HS2 and our plans for Northern Powerhouse Rail. It will provide input to both the STP and the Network Rail North of England Route Study in which both TfN and Rail North are heavily involved. The Single Integrated Rail Plan will also be the response to the National Infrastructure Commission's High Speed North Report (March 2016) which recommended that TfN should work with the Department for Transport, Network Rail, HS2 Ltd and other stakeholders to prepare by the end of 2017 a single integrated strategy, combining short-term action with an ambitious long-term vision, which supports the overall plan for the HS3 network and brings together:

- The upgrade of the Trans-Pennine line between Manchester and Leeds
- The design of the northern phase of the HS2 network, including connectivity between Leeds – Sheffield and Liverpool – Manchester
- Proposals for the redevelopment of Manchester Piccadilly station

HS2 infrastructure will form an integral part of this network, and we believed that Northern Powerhouse Rail will improve the business case for HS2, e.g. by using sections of route more effectively. The immediate priority is to ensure appropriate provision is made in the HS2

Phase 2b Hybrid Bill to allow this integration, by facilitating connections in appropriate locations. TfN is working closely with the Department for Transport, Network Rail and HS2 Ltd to develop plans for the Northern Powerhouse Rail to develop this.

iii. Strategic Roads Studies

TfN has been working with the DfT and Highways England on key Strategic Road Studies, including:

- M60 North West Quadrant – looking at options to relieve congestion on one of the busiest parts of the national motorway network, the north-west section of the M60 motorway around Manchester; and
- Northern Trans Pennine Routes – identifying options for a new east-west strategic road corridor in the Northern Pennines, linking Cumbria and the North East by upgrading the A66/A685 and/or the A69.
- Trans Pennine Tunnel (TPT) Wider Impacts Study – This will enable TfN to better understand the broader impact on the wider road and transport network for the shortlisted options for the Trans-Pennine Tunnel, and will also consider alternative short and medium term options for improving trans –Pennine connectivity between Sheffield City Region and Greater Manchester.

In the Autumn Statement 2016, the Government confirmed that the recommended A66 and M60 North West Quadrant schemes would be implemented during the RIS2 period, and TfN is now working with the DfT and Highways England to complete Strategic Outline Business Cases for the two schemes and begin to look at option identification.

TfN is also completing the Strategic Outline Business Case for the Trans Pennine Tunnel and the Wider Transport Connectivity Assessment of the benefits of a tunnel beyond the Sheffield City Region and Greater Manchester.

iv. Integration with local transport

We are fully aware, however, that local investments will help build the business cases for the larger scale investment, and are fundamental to improve the door-to-door journeys of the workers, residents and visitors across the North. For example, people travelling from Leeds to Newcastle should expect a fluid customer journey when connecting to local transport for the final leg of their journey.

Mindful of this, TfN commissioned a report on Strategic Local Connectivity as part of the early evidence base for the Strategic Transport Plan, which gathered a series of over 120 transport interventions across the North that contributed to the overall transport network across the North required in the future. TfN's role will be one of supporting in Partners in making the case for such investments at the appropriate time.

Rail North are updating its Long Term Rail Strategy, which contains a mix of national, Pan-Northern and local interventions across the North's rail network, all of which are considered necessary to support the economic growth set out in the Northern Powerhouse Independent Economic Review. Over the coming year, Rail North will develop proposals and a business case for the next phase of devolution, localised 10 year plans owned by Partners, and an approach to possible re-openings of closed railway lines.

v. Economic Appraisal

The current DfT consultation of the application of Wider Economic Impacts (WEIs) within the WebTAG suite of appraisal documents is a welcome addition to the debate on how to capture the much wider benefits of transport investment to the economy.

The outstanding issue, however, remains the approach taken to appraise individual schemes which often does not reflect the contribution of that scheme to a wider package of measures. Nor does it capture the wider benefits of rebalancing the UK economy outlined in our response to question 1.

TfN is developing its long term Investment Programme on pan-Northern, multi-modal basis, with the aim of identifying interventions that will deliver the long terms economic growth set out in the Northern Powerhouse Independent Economic Review. Given that this will be a 30 year programme, some of the interventions will be relatively well-defined, but others later in the programme, will not. Yet all of the interventions will be necessary to deliver the overall levels of growth.

TfN welcomes the reforms to WebTAG being developed by DfT and has encouraged quicker progress in the development of their evidence and thinking. We are also contributing to the work of the NIC on infrastructure appraisal methodology, and believe there is a clear case for major infrastructure schemes to be assessed outside of the WebTAG approach. The challenge for TfN and Government over the coming months will be to work together to develop a method that appraises the overall programme of interventions against the wider economic objectives, but that allows flexibility for individual schemes to come forward as and when necessary, with an appropriate value for money assessment.

TfN will work alongside DfT to refine and improve the way that investment decisions on transport are made in the context on the Northern Economy and our vision for growth. The key areas for further investigation could include:

- The approach to risk, particularly of indirect benefits
- The economic scenario and sensitivity testing
- Advancing the thinking on wider economic benefits and land-use change
- Taking greater account of long-term taxation changes, in the context of devolution of funding to Combined Authorities and the question of who pays

- Any changes required to reflect legislative changes as a consequence of Brexit, for example the requirements to meet EU emission targets, or new UK emission targets (whether this be a great or lesser target)
- Exploration of appraisal more innovative solutions in the context of a smarter transport system. For example valuing the impact of an empty autonomous vehicle moving around the system.

17. What further actions can we take to improve the performance of infrastructure towards international benchmarks? How can government work with industry to ensure we have the skills and supply chain needed to deliver strategic infrastructure in the UK?

As noted within responses to Pillar 1, it is important to support a supply chain of skilled labour if we are to build on our strengths and extend excellence into the future. Any infrastructural change will require the skills to ensure a lasting effect on the UK economy.

To achieve transformational growth in the North and the success of TfN's Strategic Transport Plan, a strong and skilled supply chain in the North and the UK will be crucial. Therefore, a key aspect of improving transport connectivity in the North will be accessing a broad range of competitive suppliers. This will ensure that TfN's long term Investment Programme and strategic infrastructure interventions can benefit the supply chain by having a pipeline of infrastructure investments to enable them plan and develop the necessary skills. TfN will support its local Partners in procuring supply contracts for transport interventions. By providing long term certainty that infrastructure will be developed in the North, and what this looks like, we will be able to give suppliers and investors' confidence in applying for public procurement contracts and ensure value for money delivery.

The Industrial Strategy will require all of its pillars to work as one to overcome the historic geographical, political and financial challenges faced when aiming to re-balance the economy. It is important that TfN and Government (and other Partners) build strong, open and committed relationships in order to make use of relationships, information and evidence generated. But TfN also appreciate its value in providing an understanding of transport impacts on various local and sectoral issues.

For example, we recognise the inter-relation between housing and transport, since the latter is a derived demand. Our Strategic Transport Plan will be supported by some of the innovative work that TfN has been doing to understand the travel demands between now and 2050 in a transformed Northern economy. These travel demands will inevitably relate to housing and employment locations, determined by TfN's Partner authorities. This is why we will be working with Partners over the coming months to refine the forecasts based on individual economic and spatial growth priorities.

In the case of trade and investment, international connectivity across the UK is vital. UK airports and ports face stiff competition from European neighbours in attracting services. TfN have initiated engagement with international hubs, via the Independent International Connectivity Commission's work. However more interaction with the private sector in this area is required to understand the challenges faced and discuss possible solutions for the UK's important trade, business and leisure hubs.

Improving international connectivity can make a substantial contribution to increasing productivity and supporting effective agglomeration through global proximity. This is particularly important to the North where a set of global capabilities has been identified to drive economic growth. **More detail on the Commission's findings and recommendations is provided in answer to Question 25.**

Pillar 4: Supporting businesses to start and grow

18. What are the most important causes of lower rates of fixed capital investment in the UK compared to other countries, and how can they be addressed?

No response

19. What are the most important factors which constrain quoted companies and fund managers from making longer term investment decisions, and how can we best address these factors?

TfN are of the opinion that the most important factors which can constrain investment are lack of certainty and lack of clarity regarding risk. TfN's long term infrastructural planning will support and build investor confidence in the North, and the UK as a whole. The TfN Strategic Transport Plan looks to provide this and is formulated based on a strong economic rationale and outlook. This is a shift away from the stop-start way which programmes have been developed and funding decisions made previously (such as electrification of rail in the North), and can give investors' confidence that the North can sustain business growth.

TfN look to work closely with both public and private partners to ensure connectivity enables agglomeration and competition to drive further investment. Making the North a sound place to invest in. TfN agree that the public sector can play a catalytic role in establishing and deepening new capital markets. By ensuring long term planning, regulatory frameworks and incentives of support, we can allow the private sector to thrive.

An example of the public and private sectors working together is highlighted by Independent International Connectivity Commission's report. This report set out that international connectivity for the North starts on the ground. Quick and efficient surface

access to the North's port and airport is key to increasing demand and subsequent development of global routes. The Commission believes that, if implemented, their recommendations can create the necessary platform for the private sector to deliver and enable the North to leverage the economic benefit from improved international connections. This vision and certainty is something that TfN can influence on a pan-Northern basis in partnership with its public and private partners.

Examples of infrastructure developments delivered in this manner include upgrades to the Tees Valley - Darlington rail line through partnership of PD Ports and national and local Government. Other infrastructure expected to be delivered by 2017 through private and public support include the construction of the second River Mersey crossing; the Manchester Airport relief road; and the new Wear Bridge and approach roads as part of the Sunderland Strategic Corridor.

A key concern for business investment will be the landscape of the UK following the completion of Brexit. There will be threats to business during this time, but also opportunities to support business in new ways (e.g. the end of the state-aid rule). Combining this at the same time as devolution will be a challenge, but if we can provide stable connectivity planning we can ensure a pillar of support for business to plan their risk strategies effectively, ensuring continued investment in the North.

The Patient Capital Review will be important in exploring the root causes and barriers for business innovation. Explanations of how TfN and improved connectivity can support investment growth and innovation, amongst other drivers, are supplied throughout this response.

20. Given public sector investment already accounts for a large share of equity deals in some regions, how can we best catalyse uptake of equity capital outside the South East?

No response

21. How can we drive the adoption of new funding opportunities like crowdfunding across the country?

No response

22. What are the barriers faced by those businesses that have the potential to scale-up and achieve greater growth, and how can we address these barriers? Where are the outstanding examples of business networks for fast growing firms which we could learn from or spread?

Covered above within responses to Questions 2 and 19.

Pillar 5: Improving procurement

23. Are there further steps that the Government can take to support innovation through public procurement?

On the supply side, Government could consider increasing public Research and Development subsidies and the provision of research via universities and public research institutions, linked to the transport sector, forging university-industry relationships.

24. What further steps can be taken to use public procurement to drive the industrial strategy in areas where government is the main client, such as healthcare and defence? Do we have the right institutions and policies in place in these sectors to exploit government's purchasing power to drive economic growth?

Government is both the client and the regulator in Healthcare and Defence, just as it is in the Transport industry. Government could extend the Defence Innovation Fund, which supports SME's to bid more easily for Defence contracts, into the Transport sector.

Pillar 6: Encouraging trade and inward investment

25. What can the Government do to improve our support for firms wanting to start exporting? What can the Government do to improve support for firms in increasing their exports?

The North must build upon global business connections, including trade, inward and outward investment, to deliver transformational economic growth. Improving our international connectivity can make a substantial contribution to increasing productivity and supporting effective agglomeration through global proximity.

TfN's Chair, John Cridland CBE, launched an Independent Commission of business experts to identify the international connectivity needs of the North, taking into account the needs of key capabilities and the opportunities arising in global markets. This report highlighted the

current and future capabilities of Northern airports and ports, and how they can support transformational economic growth.

The North's airports handle 15% of the UK's airport passengers (39.6 million air passengers per year up to October 2016). International passenger connectivity contributes £5.5 billion towards the North's GVA. This is 1.7% of the £317 billion GVA contributed by the North. Northern ports directly contributed (through both global and domestic freight) £1.5 billion, or 20% of all GVA generated by UK ports (£7.7 billion) in 2014. This is a 0.5% contribution to the North's total GVA in 2016.

But our international gateways have the existing capacity to provide much more, thereby aiding the UK's global access to markets and trade. Northern airports have the capacity to handle an additional 60 million passengers a year. If supported, this capacity can help meet the transformational growth scenario, with airport passenger numbers needing to reach 75 million by 2050 (12 million more than currently forecasted by DfT). The Independent Commission found that if unsupported, around £4 billion of transformational growth would be at risk. Under this targeted growth, the economic contribution of Northern airports should reach £13 billion (from £5.5 billion).

By highlighting the potential for growth from improving business and leisure access, we can replicate the success of growth driven approaches which have seen success elsewhere in the UK.

The Independent Commission found that in order for the North to achieve transformational economic growth, there should be:

- More support of the North's highly productive, internationally regarded prime and enabling capabilities as set out in the Northern Powerhouse Independent Economic Review, many of the sectors that will drive growth have a higher dependency on international connectivity and travel than more traditional sectors;
- Beneficial consequential effects on the supply chain across the North;
- Agglomeration effects from faster more reliable connections between key areas of employment;
- Improvements in both productivity and a higher employment rate;
- Improvements to the North's position in the global market place through profile raising activity; and
- A leveraging of the benefits of a higher income population in to private and public services.

To achieve these targets, the Independent Commission published its recommendations to improve the North's access to the global economy through its ports and airports. These included:

- Improved surface access transport connections to the North's airports and ports, by integrating them into the pan-Northern strategic infrastructure network and extending their catchment areas.
- A 'team North' approach to securing new international connections and marketing the North as a destination of choice – this will raise the North's profile and strengthen its position in the global marketplace.
- Co-ordination with the private sector to support market intelligence and route development and infrastructure improvements.
- A further assessment of freight and logistics opportunities across the North and the infrastructural support this requires.

The North's ambitious but vital plans for improved global connections can only be achieved by making it easier and quicker for passengers to travel directly to and from the North. Increasing the proportion of trips which can connect direct from the region's airports and ports will reduce the time and cost of global businesses accessing Northern market, and vice versa.

The Independent Commission's report makes it clear that enhancing global connectivity starts on the ground, and sets out the key landside enablers for ports and airports. By improving surface access to these key hubs, the potential of the North's airports and ports can be exploited for the benefit of the wider economy. This will make it easier, faster and more reliable to move people and goods between the major economic centres of the North, whilst providing enhanced access to talented labour, suppliers, collaborators and customers, at home and abroad.

TfN will now ensure that the Strategic Transport Plan and supporting Integrated Rail Report, Major Roads Report, and freight and logistics analysis incorporate the Independent Commission's recommended surface access improvements and interventions for airports and ports across the North.

26. What can we learn from other countries to improve our support for inward investment and how we measure its success? Should we put more emphasis on measuring the impact of Foreign Direct Investment (FDI) on growth?

The Independent International Connectivity Commission set out that transformation will not be achieved by simply continuing to trade with our traditional partners and markets. A key issue for the North is how to secure innovation and open up new markets, as well as attracting new sources of foreign direct investment FDI. Particularly in the context of Brexit, achieving transformational growth will require businesses to maintain important links to traditional core partners in Europe and North America, but also be able and willing to trade with more distant markets which are forecasted to see growth in trade, FDI and business travel.

Increasing the range of destinations and frequency of direct international services to and from the North will boost efficiency, encourage entrepreneurship, enhance employment opportunities and increase Foreign Direct Investment, Inward Investment and exportation opportunities.

Both airports and ports in the North support strong trade links with foreign investors across the globe. As set out in other sections of this response, the NPIER points to the key and enabling capabilities within the North which are able to compete on a national and international level. By increasing the North's international connectivity, we can boost entrepreneurship and encourage businesses and knowledge intensive sectors to enter new markets which are easier to reach.

There are lessons from across the globe of successful international trade. It is important that, as we develop our understanding of policy post-Brexit, that we set the right regulatory environment to encourage growth in trade and inward investment. This may include the potential for free trade zones which has seen success in other locations around the world, such as Dubai and Abu Dhabi international airports. Depending on how the UK interacts with future EU markets; and the policy landscape outside of EU state aid, there may be scope to encourage trade and investment through duty exemptions / deferrals and tax inversion / incentives, as seen in other countries.

TfN are currently analysing the Independent Commission's recommendations. One of these recommendations is to explore a 'Team North' approach to air route developments, through public and private engagement with potential markets. **TfN note the reference of the Infrastructure Exports Leadership Forum (IELF) (including Team UK, Northern Powerhouse Missions and Pitch Books for major projects) within this consultation. We would be happy to engage with DIT on such matters as appropriate, whilst also working with Government aviation teams with regards to the detail above.**

Pillar 7: Delivering affordable energy and clean growth

- 27. What are the most important steps the Government should take to limit energy costs over the long-term?**
- 28. How can we move towards a position in which energy is supplied by competitive markets without the requirement for on-going subsidy?**
- 29. How can the Government, business and researchers work together to develop the competitive opportunities from innovation in energy and our existing industrial strengths?**

The North has significant Energy capability, in particular expertise around generation, storage, and low carbon technologies and processes. With a long-standing track record in

Nuclear Energy, proven record in Offshore Wind Energy, and a growing expertise in battery technologies, the North is well-placed to seize opportunities for Low/Zero Carbon energy, and Energy portability.

The North has specific, distinctive sectoral specialisation in:

- **Offshore wind energy**, with arrays off the East and West Coasts, manufacturing and assembly facilities (including in Hull and Humber, Liverpool, North East, and Tees Valley City Regions) and supply chain capabilities (including in Leeds and Sheffield City Regions)
- **A range of new technologies**, including Waste to Energy (Tees Valley), Biomass (e.g. Leeds City Region and Tees Valley), Hydrogen production (Liverpool City Region and Tees Valley), and small hydro, as well as Onshore Wind, across the North.
- **Electricity distribution and control apparatus** (Leeds City Region)
- **Offshore/Subsea Engineering** (Cheshire and Warrington, Tees Valley, and the Hull and Humber, Liverpool, and North East City Regions)
- **Environmental, energy, engineering consultancy and business services** (Lancashire, Hull and Humber City Region and Leeds City Region).

Therefore the North has a long-standing sectoral strength in Energy and has adapted to changing technologies and regulatory requirements. The North's Energy Capability is bolstered by its Advanced Manufacturing Capability, which means that many of the elements in the Energy sector's supply chain are located in the North.

The North's Advanced Manufacturing and Materials sector ranges from Automotives in the North East, Cheshire and Warrington and Liverpool City Region, Aerospace in Lancashire, Offshore Engineering in the Tees Valley and High Precision Engineering in Sheffield City Region, through to Chemicals in Cheshire and Warrington, Lancashire and Hull and Humber, marine engineering in Cumbria, graphene and advanced 2-D materials in Greater Manchester, and Advanced Manufacturing/Engineering Technical services in Sheffield City Region and Cheshire and Warrington.

TfN's long term strategic transport planning can ensure there is connectivity support for energy generators and providers across the North and with the wider UK. For example, improved road & rail access to ports & airports to support energy related investment through those facilities, or efficient access to other key energy strengths such as Liverpool Super Port and NuGen Nuclear Power in Cumbria.

A better connected North can support competition within this sector, both between energy providers and energy suppliers and manufacturers. By remaining aware of infrastructural dependencies and the latest innovative measures, we can ensure any transport infrastructural developments support energy infrastructure were appropriate. Improved connectivity will also aid the transportation of raw materials, with the potential for this to

be more efficient, cost effective and sustainable for business. This may in turn have the potential to reduce prices for energy customers.

30. How can the Government support businesses in realising cost savings through greater resource and energy efficiency?

TfN has agreed a set of objectives for the Strategic Transport Plan that include a specific one relating to the environment. Our view is that establishing this as an objective at the outset should provide the means by which environmental considerations are at the forefront of the delivery of all transport infrastructure. TfN has commissioned an Integrated Sustainability Appraisal of the Strategic Transport Plan. At this point, an Integrated Sustainability Appraisal - Scoping Report has been prepared and used for consultation with the relevant statutory bodies.

This process will ensure that TfN meets all legislative requirements in producing the Strategic Transport Plan, recognising that as the first Sub-National Transport Body, we are leading the way in establishing the boundaries between roles and responsibilities for setting transport policies at a national, sub-national and local level. This work will also ensure our commitment to meeting legally binding environmental targets under the Climate Change Act.

Reducing greenhouse gas emissions, protecting air quality, enhancing transport choice, enabling access to opportunity and improving economic prosperity are some of the key considerations for the Integrated Sustainability Appraisal, TfN and the future of the country. However, TfN also recognises that achieving targets such as carbon reductions by 2050, will involve many other organisations than just TfN and include issues that TfN has no direct control over, and so our approach will be one of understanding the impact of our work on the natural environment.

It should also be noted that a more detailed consideration of environmental issues is likely to be undertaken at a scheme-specific level by the delivery organisation(s) involved.

Pillar 8: Cultivating world-leading sectors

31. How can the Government and industry help sectors come together to identify the opportunities for a 'sector deal' to address – especially where industries are fragmented or not well defined?

The world leading sectors and suppliers referred to by the Green Paper are broadly consistent with the international-class prime and enabling assets mapped out in the NPIER. As referred to within responses to Pillar 1, it is essential that we join up the UK's valuable business sectors with easy to access supply chains, both national and international.

TfN's Strategic Transport Plan has reviewed evidence from Partner organisations and businesses, as well as undertaking its own research to understand connectivity priorities and develop an outline programme. This has allowed TfN to identify connectivity priorities and strategic development corridors which can support increased business connectivity and clustering. TfN will examine these corridors against its STP objectives and conditional outputs.

This approach will allow us to map the benefits of each intervention, including how they support the common interests across businesses. For example, the Energy sector is highlighted within the NPIER as a key capability across the North. This includes assets for delivering energy supply on both coasts, but also the vital support provided by manufacturing and research supply chains across the North. This is not confined to one particular industry or sector, as collaboration across sectors can also support competition and innovation to accelerate growth. Furthermore, when assessing benefits of developments, this clustering and chain of industry may also sit geographically across various development corridors. As TfN develops its STP, it will appraise the benefits within each intervention corridor according to agreed appraisal guidelines (see response to Pillar 5).

TfN are committed to working with businesses, local leaders and universities to support any sector deal related to transport. Being open to Industry challenge towards regulatory barriers, promoting competition and innovation, increasing exports and commercial research will be especially vital as we develop infrastructure plans, whilst planning for the UK's exit from the EU.

TfN are happy to aid the Government's open door policy for Industry challenge were appropriate, in particular were it can aid developments following the UK's exit from the EU.

32. How can the Government ensure that 'sector deals' promote competition and incorporate the interests of new entrants?

Sector deals will be most effective were operated as an engaging and inclusive environment. For such collaborations to be successful, there needs to be clear leadership and a proof of action to create momentum in business growth. Furthermore, whilst a focus on specific sectors is important, it is clear that there is significant crossover of sector opportunities and outputs. The NPIER set out how connectivity can support growth across an array of sectors. Therefore any sector deal should be managed as part of the broader sector deal landscape, and outputs of sector deals should be joined up with other inter-dependent sectors were appropriate.

Sector deals should not be restricted to existing and established businesses, or to locations of strength. Whilst the UK should harness its strengths, bridging the economic gap will require new business and local regions to support economic growth right across the UK. Sector deals which include a range of new, emerging and innovative businesses may provide the best conditions to allow a thriving supply chain, sharing of research and development and skill sets.

TfN will be happy to assist with any sector deals relating to transport infrastructure or related sector where it can add value.

33. How can the Government and industry collaborate to enable growth in new sectors of the future that emerge around new technologies and new business models?

Answered within responses to Pillars 1, 2 and 4.

Pillar 9: Driving growth across the whole country

34. Do you agree the principles set out above are the right ones? If not what is missing?

Answered within responses to Chapter 1.

35. What are the most important new approaches to raising skill levels in areas where they are lower? Where could investments in connectivity or innovation do most to help encourage growth across the country?

As indicated within responses to Pillars 3, 8 and 10, TfN is working to identify and agree connectivity which will support growth and skills across the UK.

Pillar 10: Creating the right institutions to bring together sectors and place

36. Recognising the need for local initiative and leadership, how should we best work with local areas to create and strengthen key local institutions?

Statutory Body Status

The Secretary of State for Transport has given his support to TfN's proposal to become to first Sub-national Statutory Body in England. TfN will work, with its Partners, to formalise this statutory status which, subject to agreement, is expected to be granted in 2017.

As a sub-national transport body, TfN will be an intelligent partner offering multi-modal planning and appraisal. This will provide taxpayers with better value for money, because our consistent and transparent single voice will mean a faster and more efficient approach to delivering investment projects. Taking a regional approach to infrastructure planning, as is being done with the Strategic Transport Plan, but then examining interdependencies at local level, is more likely to identify key risks and bring forward the necessary mitigation measures.

This approach is consistent with two recent documents from the Institution of Civil Engineers (ICE) which provide some potential answers for how the devolution across sectors can be addressed. The National Needs Assessment provide a sector-based analysis of infrastructure needs up to 2050, whilst the State of the Nation 2016: Devolution report recommends the development of regional infrastructure strategies.

TfN welcomes the Government’s continued commitment to devolve transport related powers and set up the first Sub-national Transport Body. We will work with our local and national partners to ensure TfN operates in its most effective form.

Transport Demand Modelling

TfN has been undertaking some innovative work to investigate the likely range of future transport demand scenarios that a transformed Northern economy will place on the transport network across the North, as well as a representation of demand to and from other key regions. These scenarios reflect the economic growth envisaged in the Northern Powerhouse Independent Economic Review.

A Northern Transport Demand Model is being produced using a baseline of demand for road and rail. Using this model to create a dynamic simulation of how activities at locations produce a demand for travel, including how businesses produce jobs which need to be filled by workers who have access to the available jobs. Travel demand is segmented into three types of trip purpose: Commuting, Business and Other.

The high level results from the model show a significant uplift in both population and employment across the North when compared with a “business as usual” scenario, as shown in the table below.

	Business as Usual 2015	Business as Usual 2050	NPIER 2050
Population	15.6m	18.1m	19.6m
Employment	7.6m	8.3m	9.2m

The outputs of this work will inform the overall strategic case for the Strategic Transport Plan, but also provide the supporting evidence base for the development of future interventions.

To reflect future uncertainty, and to add robustness to our forecasts, two future influencers have also been modelled to understand future transport demand across the North in the transformational economic growth scenario:

- Technological and socio-cultural change: meaning the relative impact of technology and socio-cultural attitudes to travel demand.
- Enabling policy and plans: meaning the relative impact and focus of local transport and land-use policy and planning on the drivers of travel demand.

These were specifically chosen as having significant impacts on future travel demand that need to be understood and allowed for within any forecasting work, but which sit outside the current remit of TfN's work.

An upcoming Economic Growth and Transport Demand Analysis report will set out what has been done, and also how the work to date will be taken forward with Partners to refine the forecasts based on individual economic and spatial growth priorities.

In developing the Strategic Transport Plan, TfN is considering the possible impacts of social, technological, economic, political and environmental change. This suggests that the Strategic Transport Plan should seek to deliver a transport system that is user centric, smart, autonomous and connected, as well as resilient and sustainable. However, more importantly given the uncertainties that surround how and when things will change, the policy measures and interventions proposed must be flexible.

TfN's Strategic Transport Plan

TfN is working towards the publication of the Draft Strategic Transport Plan and TfN Investment Programme for public consultation in Autumn 2017. This is planned to coincide with the establishment of TfN as a Sub-National Transport Body. When adopted in 2018, the Strategic Transport Plan will become the statutory document for TfN, defining the priorities of TfN as a Sub-National Transport Body, and containing the most up-to-date version of the Investment Programme.

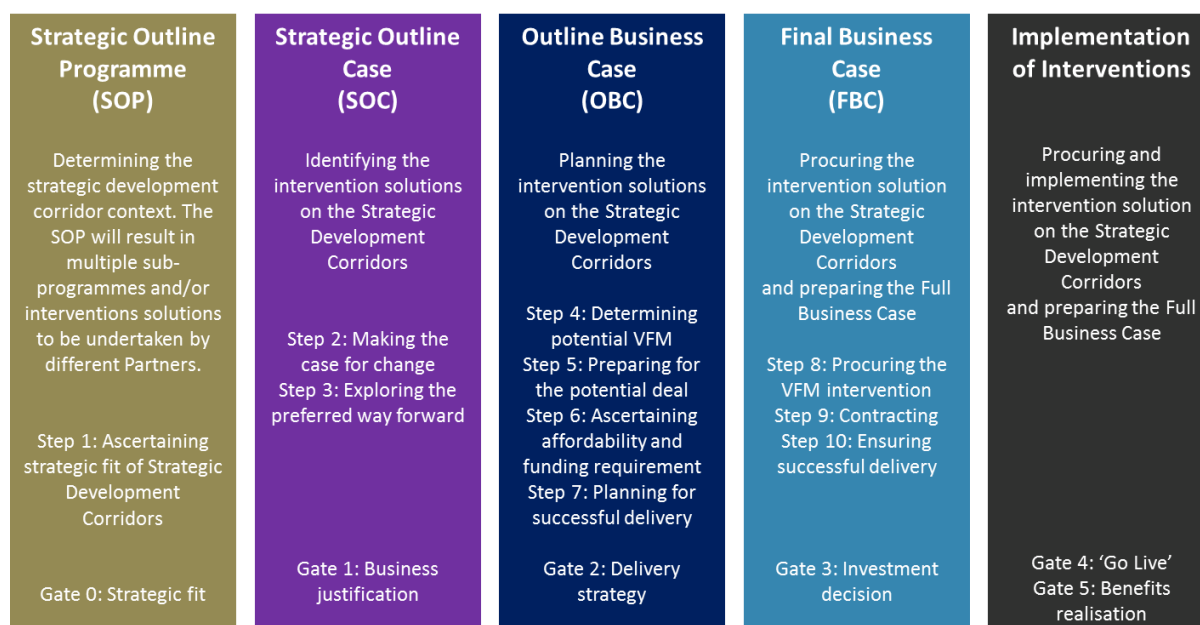
The Strategic Transport Plan, and its supporting evidence, will be used as a platform with which to agree how Government, Network Rail, Highways England and HS2 Ltd work with Partners to deliver investment that can transform the economy of the North.

The Strategic Transport Plan will be a multi-modal plan that sets out an evidence-led and compelling case for investment, focusing on investment in smart ticketing and integrated travel, major highways, pan-Northern rail, strategic access for freight and logistics, and interventions to support international connectivity. More importantly, it will have a wide

ranging and ambitious scope, setting out a portfolio of strategic transport investment interventions to transform economic performance up to 2050.

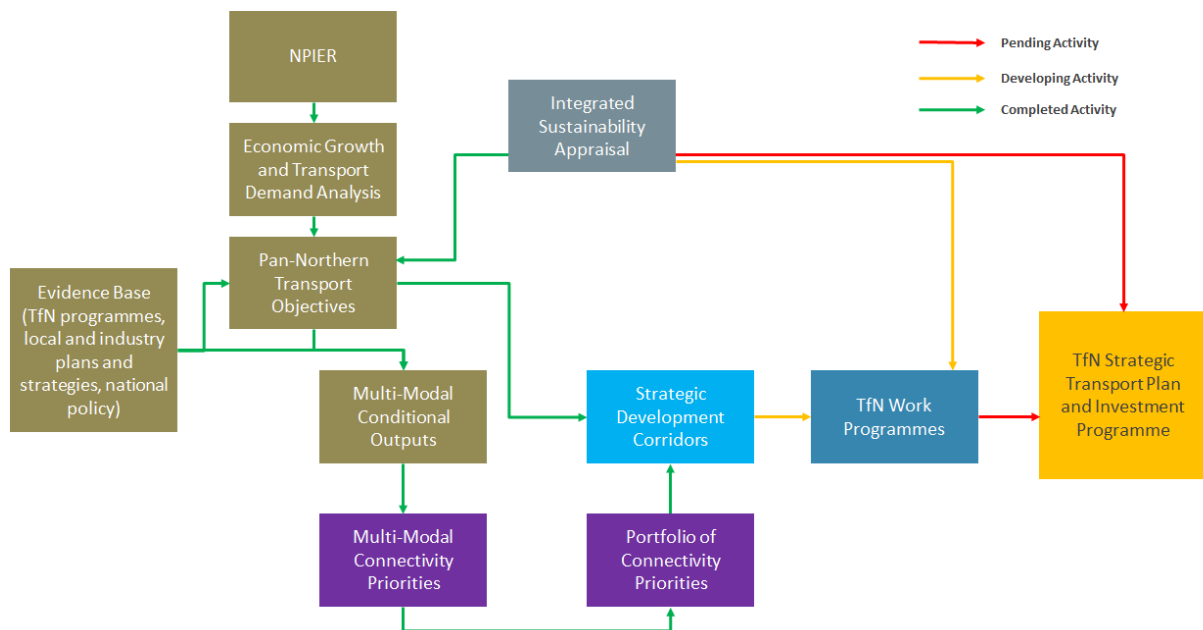
TfN's Strategic Transport Plan has reviewed evidence from Partner organisations and businesses, as well as undertaking its own research to understand connectivity priorities and develop an outline programme. This has allow TfN to identify connectivity priorities and strategic development corridors which can support increased business connectivity and clustering. TfN will examine these corridors against its STP objectives and conditional outputs in order to formulate a growth driven investment programme.

TfN's is now commencing work to develop robust strategic outline cases and identifying the interventions required on the Strategic Development Corridors. TfN will also need to form a view on the interdependencies between the connectivity requirements in each strategic development corridor. This will enable TfN to state clearly the preferred option and the links to other investments that may be needed. This stage will form the TfN Work Programme, and then define the TfN Investment Programme. TfN will be using HM Treasury Green Book approach to developing the business case for each of the Strategic Development Corridors as set out below:



TfN's Investment Programme will represent the set of prioritised and sequenced transport interventions that are required to deliver transformational economic growth in the Strategic Development Corridors across the North. To that end, they should all be considered as "high value" and can support the Industrial Strategy ambitions.

The process for developing the Strategic Transport Plan is illustrated below:



Between now and Autumn 2017, TfN will also be working closely with its Partners to take forward the extensive and innovative evidence base that has been developed, and to confirm that this is sound and robust for developing the long term TfN Investment Programme. TfN will share the evolution of the Plan with the Government to identify the transport investments required to underpin transformational economic growth across the North.

37. What are the most important institutions which we need to upgrade or support to back growth in particular areas?

In addition to the above work outlined throughout this response on the Strategic Transport Plan, TfN's view is that increasing collaboration will help bring forward the necessary infrastructure investment. Other examples of TfN supported collaboration include:

- Integrated and Smart Travel is TfN's first programme funded by government, and will start to deliver tangible benefits for passengers prior to the end of this Parliament.
- In addition, Rail North has demonstrated the potential of strong partnership working between the North's local authorities and the DfT. Transformational investment is being made in the North's two new rail franchises, Northern and TransPennine, which will provide more frequent services to more places, with improved journey times. (The Northern franchise will provide nearly a 40 per cent increase in capacity and introduce a new, faster, higher quality Northern Connect service on 12 routes between major centres).

- Over the next year, TfN will feed into Highways England's and Network Rail's industry processes, RIS2 and CP6, using the prioritised portfolio of interventions in the initial TfN Integrated Rail and Major Roads Reports, which effectively link to investment that would be delivered by the national agencies in the early years of the Strategic Transport Plan, and agreeing a joint narrative with Highways England and Network Rail on the content of these two investment programmes across the North.

TfN agrees with the Government that ports and airports are key connectivity institutions, providing both local employment and trade and investment. As set out in our response to Pillar 6, there are significant gains in economic growth to be achieved from supporting these institutions which provide global connectivity to and from the UK.

TfN will continue to work with its partners as the elections for the combined authority mayors are completed, and will engage with Government (both national and local) regarding administrative capacity and alderman roles within key institutions.

38. Are there institutions missing in certain areas which we could help create or strengthen to support local growth?

TfN agrees with the institutions as outlined by the Industrial Strategy, however it believes that the cultural institutions element should be expanded to consider the broader role which Tourism can play. Tourism features across the North, but is highlighted by Cumbria, North Yorkshire, and Lancashire in particular as a priority sector.

The economic and employment impact of the Visitor Economy is far from straightforward to quantify, as it includes not just these areas of 'direct' employment, but areas where employment is supported by Visitor and Business Spend – for example, on transport, hotels/retail, other services. The NPIER used CE's data to identify around 250,000 jobs in the Accommodation and Recreation sectors in the North, which accounts for around 3% of all jobs. These sectors also account for 2.2% of GVA (c. £5.7bn). If the Food and Beverages sector is added to this mix, to form a proxy for the Tourism sector, the number of jobs rises to around 600,000 (8% of the North's total) and GVA rises to nearly £12bn (just over 5% of the total). According to Visit Britain, the North of England received nearly 40 million visitors over the course of 2014, indicating the scale and popularity of the tourist offer.

Harnessing this strength will require investment in the tourism industry, particularly in terms of the development of easy and accessible transport connections to enable visitors arriving at one of the Northern gateways to access attractions across the region. Improved connectivity (both national and international) would allow more tourists to travel directly to the North, increasing the likelihood of them spending more time in the region. The strength of the tourist offer in the North with five national parks, important cities, major historic

towns and centres and major sporting venues, means that, with improved connectivity, the number of tourist visits could be greatly increased.

The importance of tourism as a quality of life indicator is high on the NPIER agenda and tourism itself is a significant contributor to GVA growth. An important theme is the linkage between a vibrant tourism sector and the attractiveness of the region as a place to live and work. Quality of life is a critical factor in attracting and retaining skilled workers and inward investment to the North. In this context, there is a particularly strong rationale for a 'joined up' pan-Northern story on the North's quality of life offer. The North's cultural and sporting assets – and the related sectors of Accommodation, Tourism, and Recreation – also contribute to the North's export income and are an important source of employment more generally.