



Department
for Transport

Northern Trans Pennine: Background and Wider Context



Moving Britain Ahead



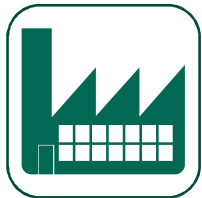
25 February 16



Three Studies announced in the first Road Investment Strategy:



Trans Pennine Tunnel exploring the potential for a high performance link between Manchester and Sheffield under the Peak District National Park



M60 Manchester North West Quadrant investigating how to provide additional transport capacity to support economic growth



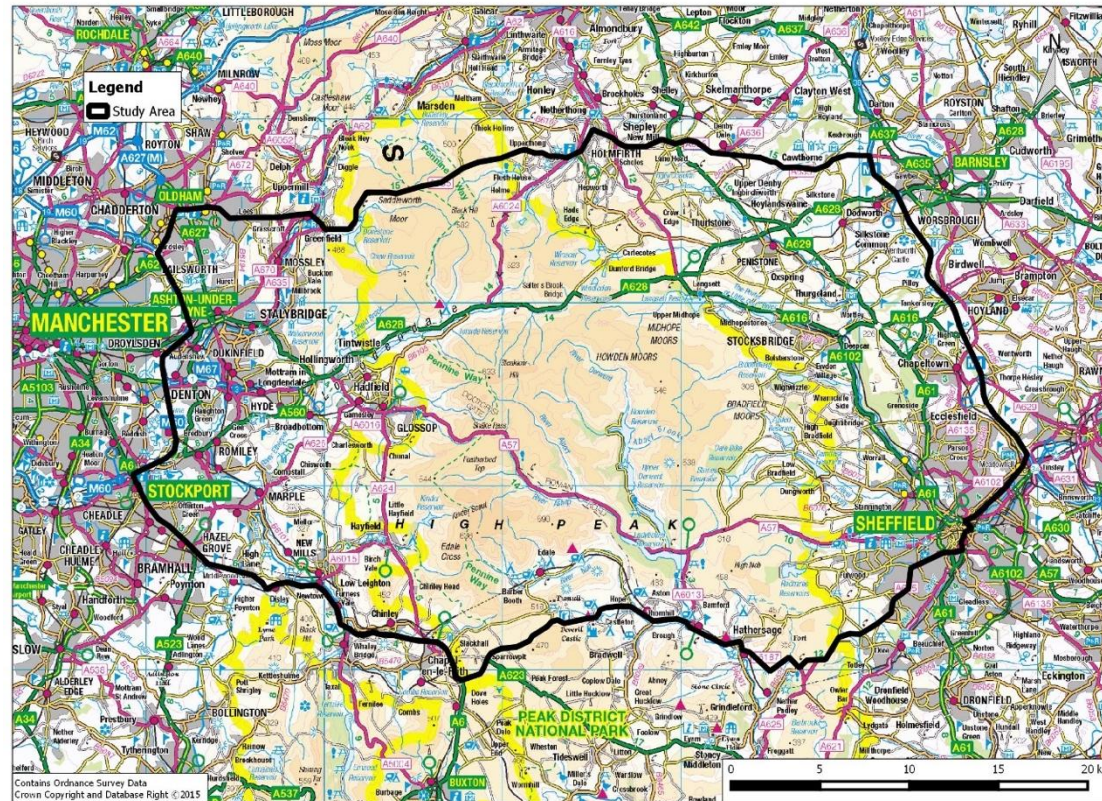
Northern Trans Pennine considering the potential to create a new strategic east west link between the M6 and A1 to improve east-west connectivity



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Study Area

Trans Pennine Tunnel

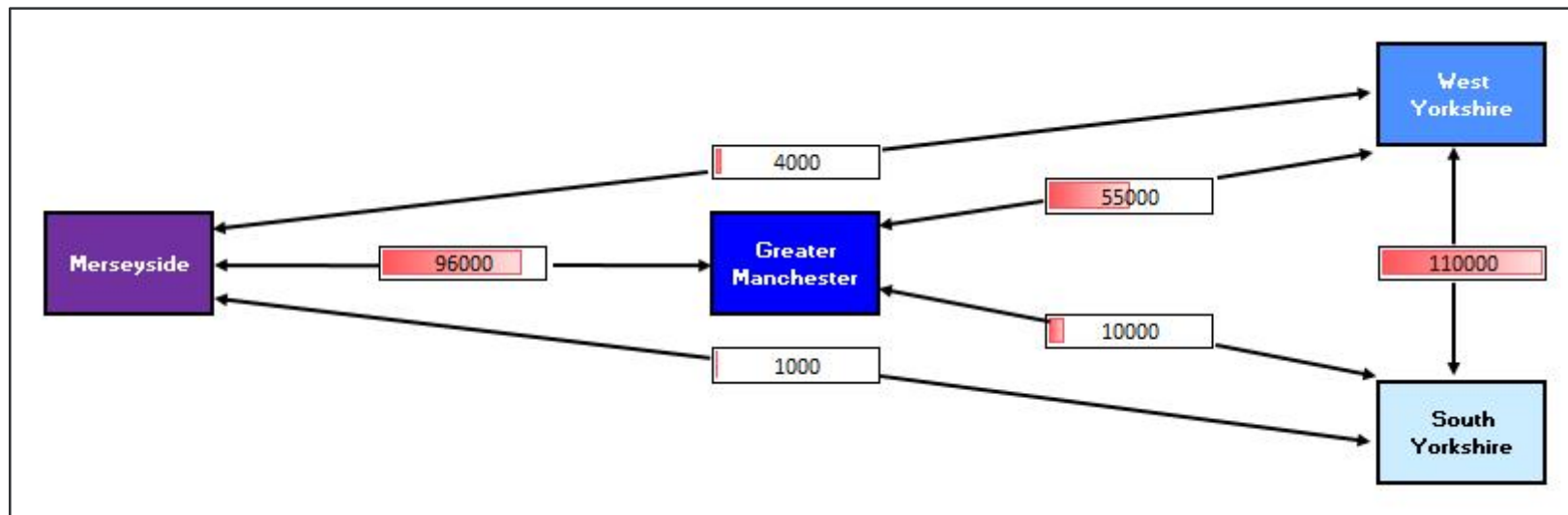




Progress to date

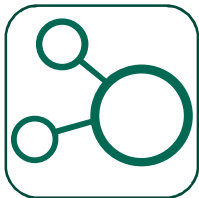


Initial analysis: Movements between Sheffield and Manchester are far lower than those between Manchester and Leeds or between Leeds and Sheffield; further analysis is required to determine how the Pennines is creating a barrier to movement between Manchester and Sheffield





Progress to date (2)



Clear strategic case for the scheme, which is aligned with central and sub-national Government policy;



The scale of the wider economic benefits has yet to be established but initial analysis shows that these could be significant and complementary to other elements of the developing Northern Powerhouse strategy;



Construction of a new strategic route between Manchester and Sheffield is technically feasible – though challenging:

- ▶ Twin bore tunnel, with service tunnel between
- ▶ Tunnel length ranging from 7-20 miles, dependent on preferred route



Costs and timescales still being examined:

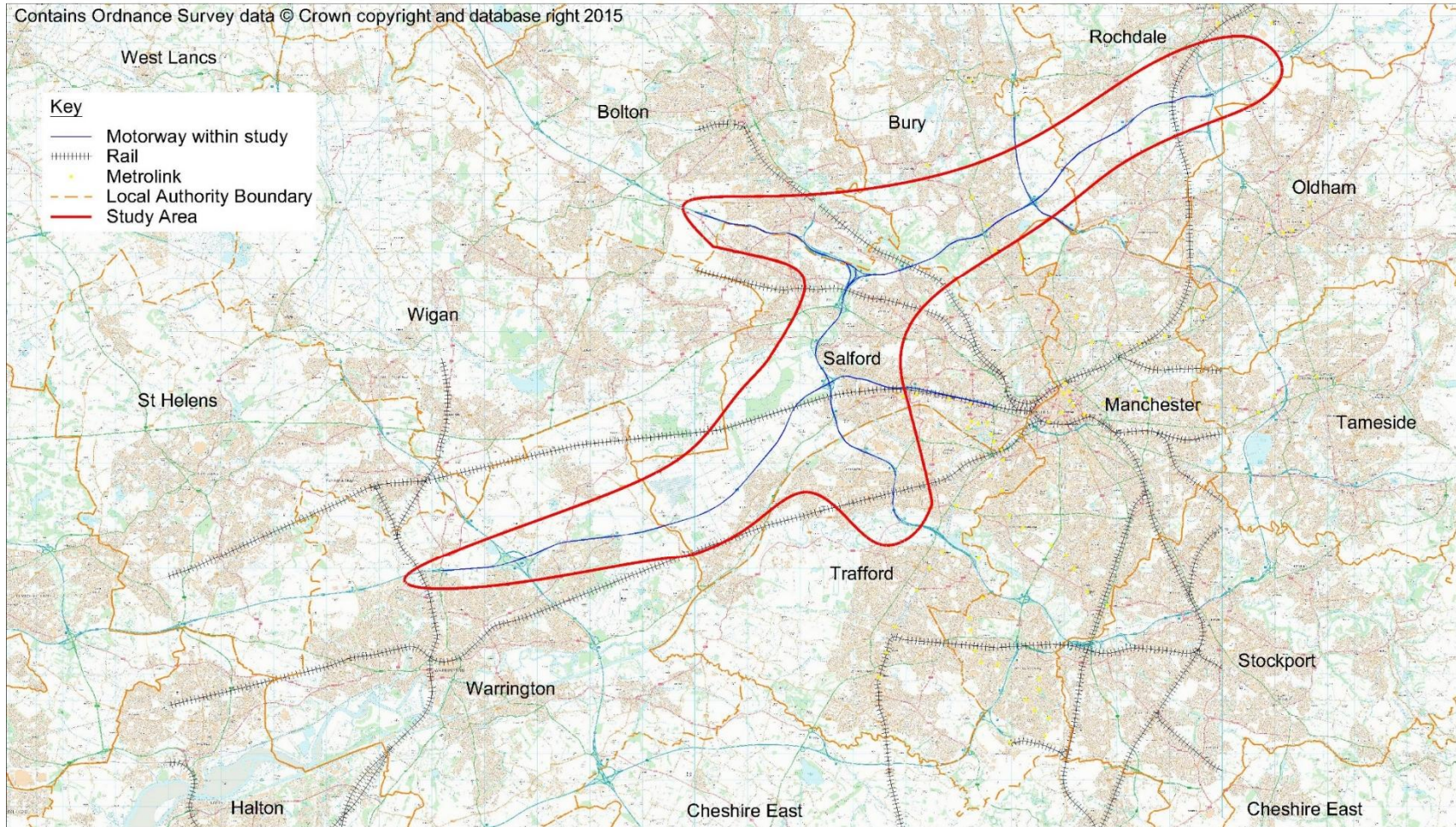
- ▶ Tunnel construction to take up to four years, plus ancillary works, total of 8 years for total new link



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Study Area

M60 North West Quadrant





Progress to date



Evidence gathering:

- ▶ Review of available reports and data;
- ▶ Liaison with other studies e.g. TfN Freight Strategy Study



Identification of the current and future problems within the corridor, including growth plans for this part of the Northern Powerhouse



Identification of the case for intervention (local and strategic) and the intervention-specific objectives



Production of a draft Interim (Stage 1) Report



Emerging Issues



Severe congestion experienced on M60 within the study area and physical constraints on network contribute to congestion



Lack of public transport alternatives covering orbital routes and public transport network focussed on City Centre



Heavy rail does not cover orbital routes and experiences over-crowding
Lack of Park & Ride facilities at stations



Significant issues with regard to noise and air quality



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Working with others



Co-sponsors of the
three studies
Chairing stakeholder
reference groups



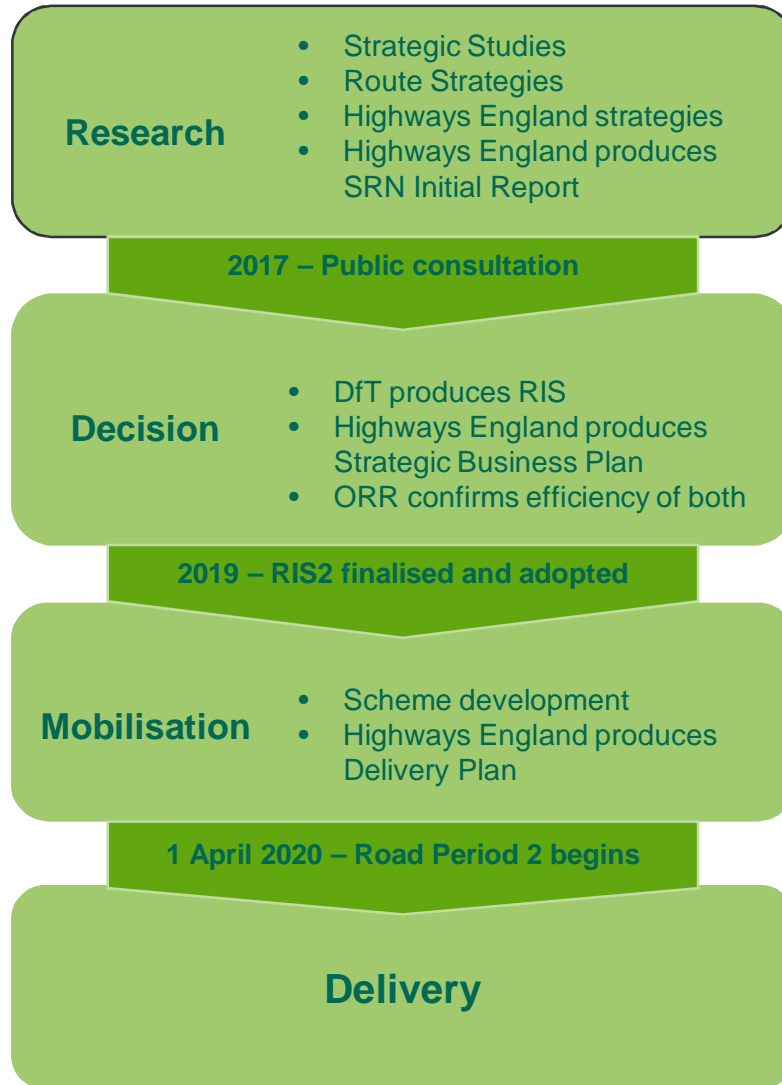
National Infrastructure
Commission



The Commission will work
with Transport for the North
on developing plans to
radically improve connectivity
between cities, particularly
east-west across the
Pennines



Wider Context – future planning



RIS2 is designed on the principle that the programme will go through distinct phases.

- ▶ The first stage consists of evidence-gathering and stakeholder engagement, trying to identify the factors and options that should shape RIS2.
- ▶ The decision phase consists of the formal negotiation of a RIS, in line with the Infrastructure Act and Highways England's licence
- ▶ Once the RIS is agreed, the process of mobilisation and delivery begins.

Each of these phases will have different needs and priorities. Key products in each stage need to be identified early, but practical development work may be able to wait until later point in the process, and allow us to focus on the items which are most urgently needed.

We will need to revisit this process to take account of the role and emerging operation of the new National Infrastructure Commission.

NORTHERN TRANS-PENNINE ROUTES STRATEGIC STUDY

Stakeholder Reference Group – Stage 1 Findings

25th January 2016

Richard Jones

Tim Lund



STUDY OBJECTIVES

- Understand current performance and constraints of the existing road infrastructure, and confirm the strategic case for considering further investment
- Identify options for a new strategic corridor upgrading one or both of the A66 and A69 and making other improvements along their length
- Understand the operational benefits and challenges of the construction of each of the options, and including the impact on local communities
- Understand the benefits and impacts encompassing congestion relief, reliability, safety and environment, network resilience, resulting from interventions
- Understand how different options interact with proposals being developed by other studies in the North including the Trans Pennine Tunnel and Manchester NW Quadrant to deliver the overarching Northern Powerhouse objectives.

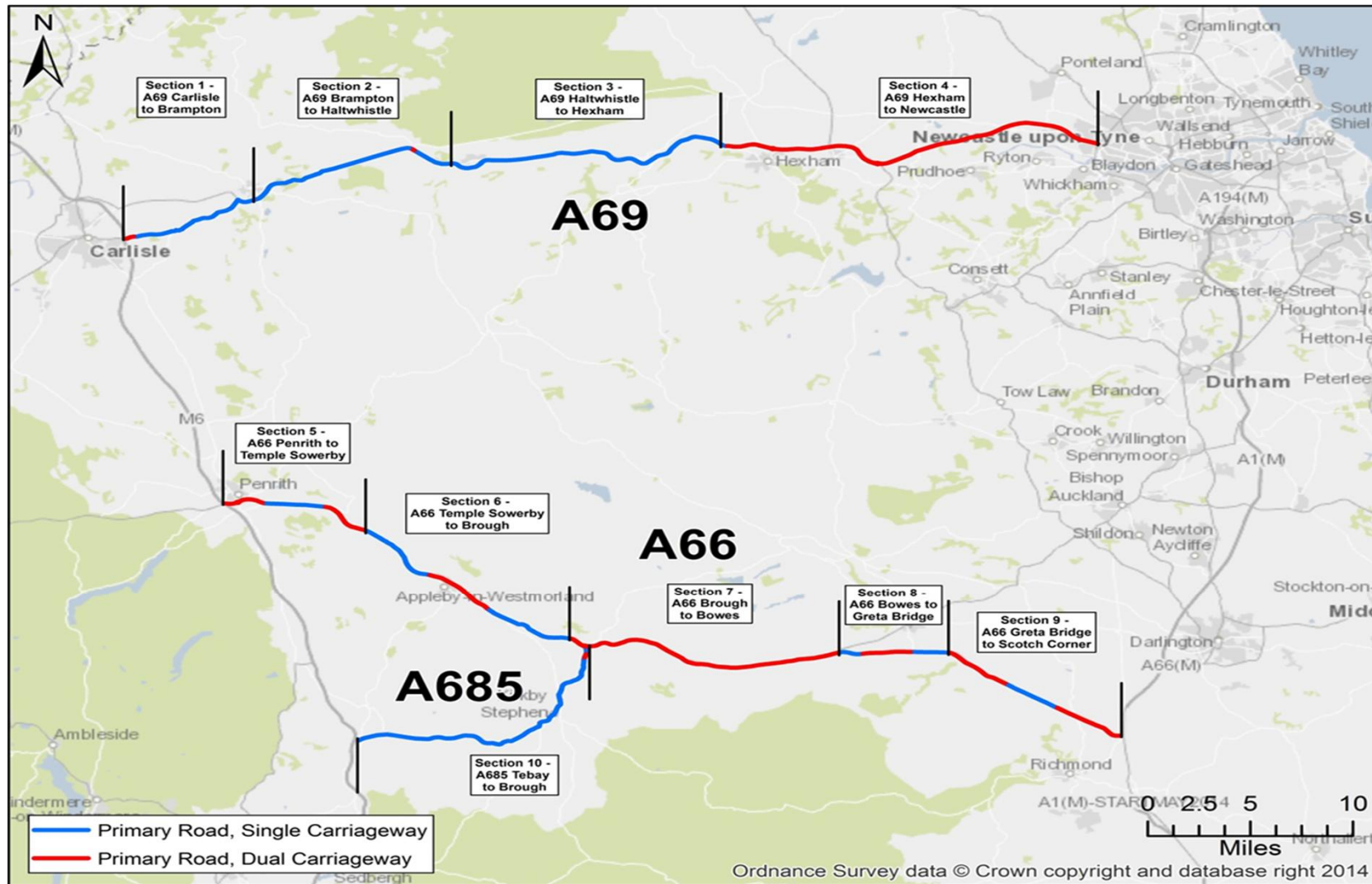
STUDY STAGES AND PROGRAMME

- Stage 1 – gain and understanding of the current and future situation in the study area. Complete by end January 2016.
- Stage 2 – develop a long-list of potential interventions; sift the options against the intervention-specific objectives and produce a shortlist of options for more detailed assessment. Complete by end May 2016.
- Stage 3 – produce Strategic Outline Business Cases (SOBCs) for the shortlisted options. Complete by end October 2016.



STUDY AREA

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STAGE 1 OBJECTIVES

- Understand the current and future conditions in the study area
 - Policy context
 - Socio-economic conditions and future development
 - Travel patterns
 - Road congestion, travel times and reliability
 - Safety
 - Network operations
 - Public transport links
 - Environmental constraints

- Establish the need for intervention and the strategic case for considering further investment in the study area

- Develop intervention-specific objectives against which to assess potential interventions

STAGE 1 EVIDENCE GATHERING

- **Reviewed previous studies and information – such as:**
 - Consultation on potential A66 schemes (2002)
 - Northern Trans-Pennine Route Strategy Evidence Report (Highways England, 2014)
 - Feedback from the stakeholders road trip (July 2015)

- **New data collection – such as:**
 - Socio-demographic data
 - Traffic flows, journey times and travel patterns
 - Operational data – A-One+ and RoadLink
 - Environmental
 - Safety Data – STATS19
 - Committed and planned schemes/ developments

- **Consultation with individual stakeholders**

- **Consultation with the Stakeholder Reference Group**

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Northern Trans-Pennine Routes Strategic Study

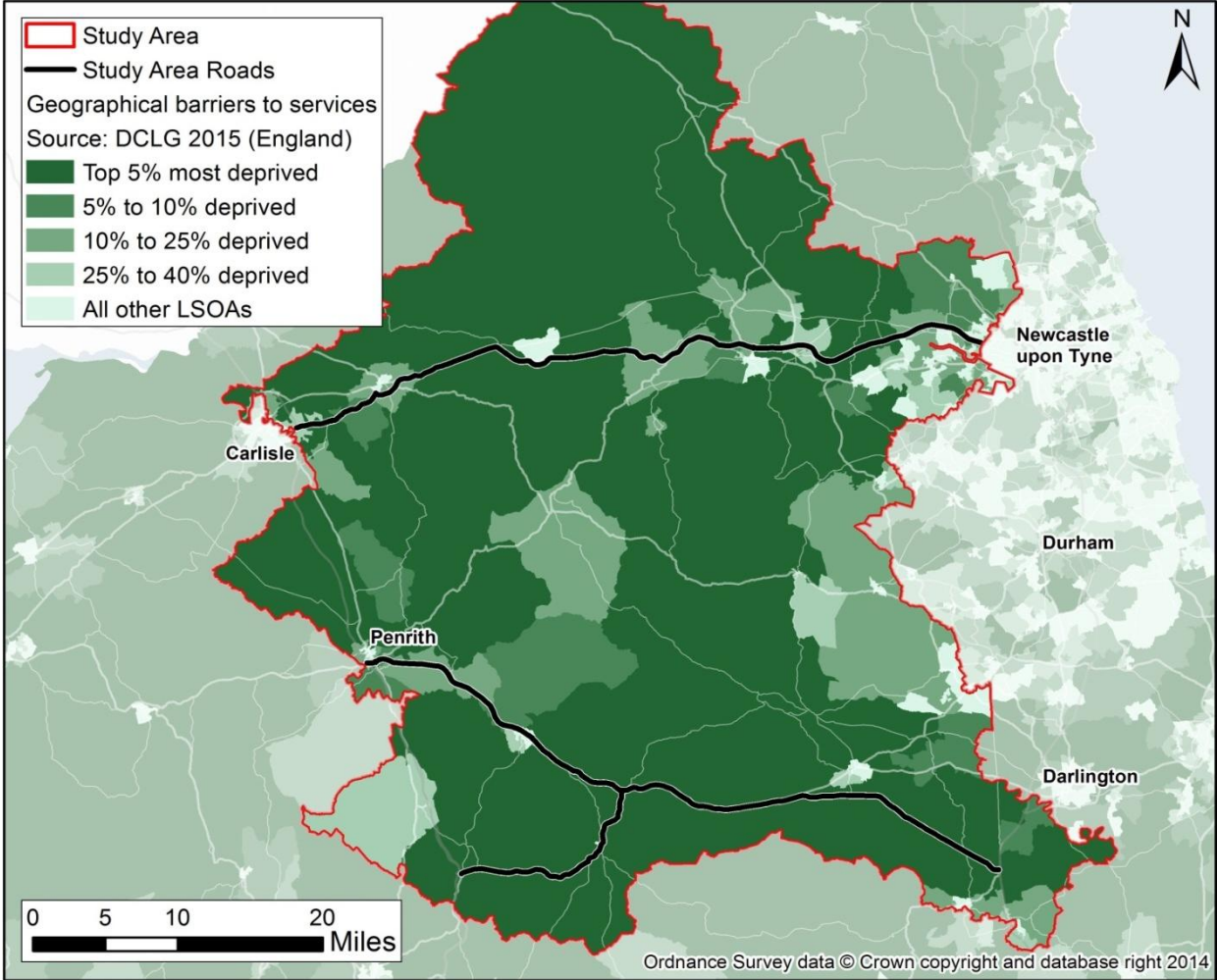
Stage 1 Findings – the Local Area



SOCIO-ECONOMIC ANALYSIS – KEY FINDINGS

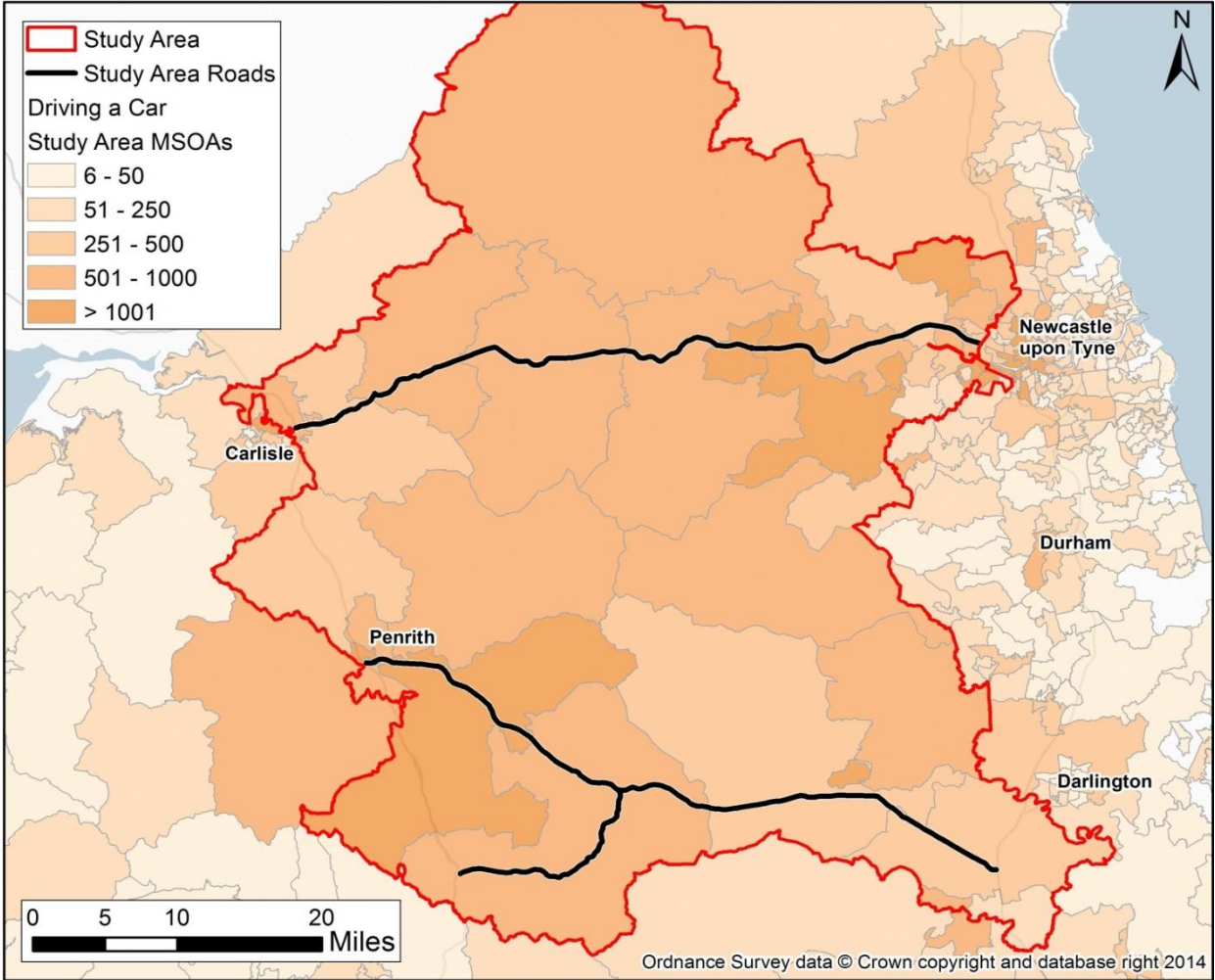
- Low population density, but particularly along the A66 corridor
- On basis of most deprivation indices the local area compares favourably with surrounding areas (and England as a whole):
 - Higher than national average car access and high car mode share for journeys to work
 - Larger proportion of people within the 65+ years age range
 - Lower than national average unemployment
 - A skills mix similar to national average
- The local area scores badly in access to services – reflection of the rural nature of the area

DEPRIVATION



- Local Area has a low overall score on the Index of Multiple Deprivation
- Except for “Geographic Barriers to Service Domain”, where much of the area is in the top 5% most deprived

JOURNEY TO WORK – ORIGINS IN LOCAL AREA



- At 75% Car driver or passenger, JTW mode share is higher than national average
- Just 10% of JTW trips by public transport:
 - Bus: 9%
 - Rail: <1%
- 70% of JTW trips have destination outside local area

OVERALL FUNCTIONS OF THE ROUTES

- A66/A685 and A69 corridors both serve twin functions:
 - Provide access for local population to jobs and services
 - As part of the Primary Road Network (PRN) which links DfT-designated primary destinations they are also key strategic links

- The balance between the two corridors is different so, following this overview of the local area, we now focus on the issues of each corridor separately

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Northern Trans-Pennine Routes Strategic Study

A66/A685 Corridor – Key Findings



FUNCTIONS OF THE A66/A685 CORRIDOR

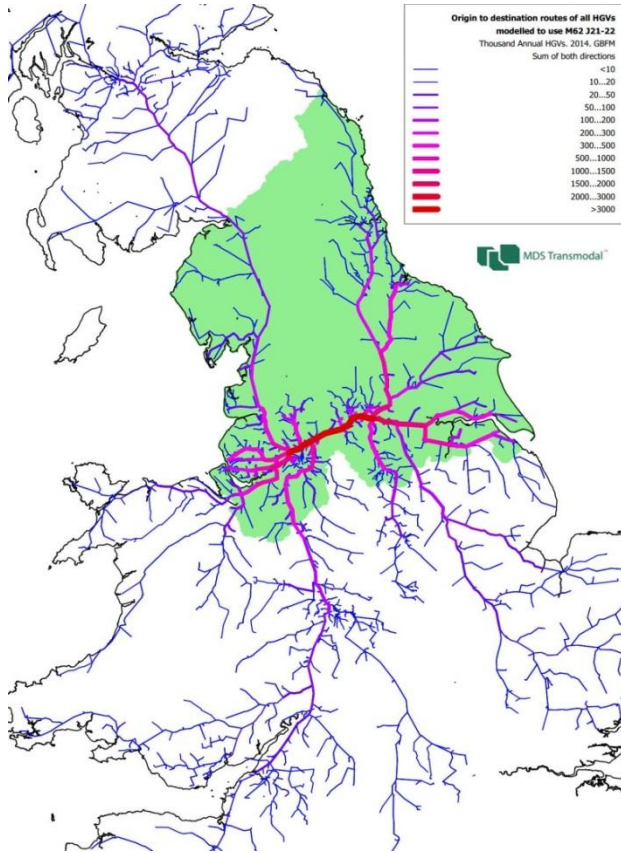
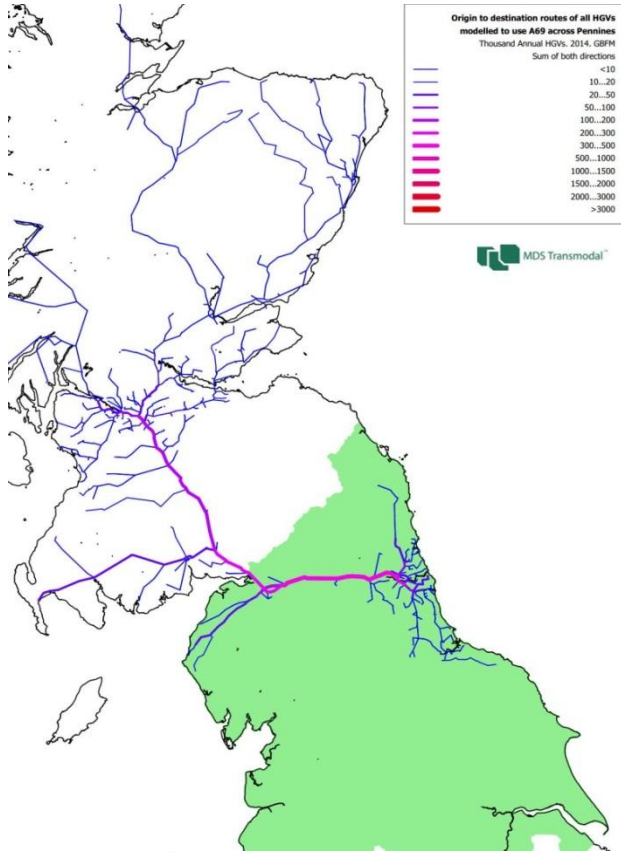
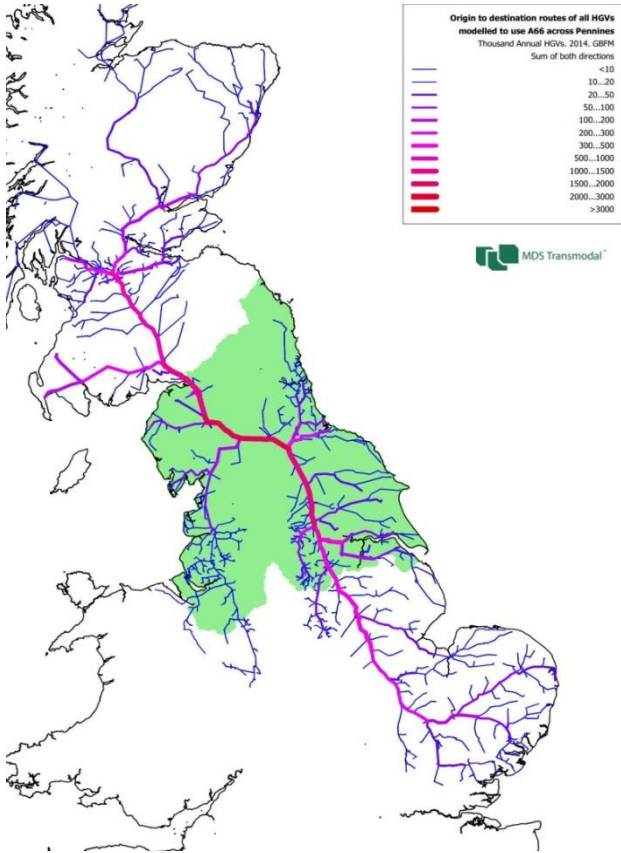
The A66 corridor between its junctions with the A1 and M6:

- Acts as a national and regional strategic link for long distance journeys between the south and east of the UK and the north and west of the UK, providing the most direct east west crossing of the Pennines north of the M62
- Acts as a strategic link for freight movements between the same areas of the UK and between east coast and west coast ports, with commercial vehicle flows greater than 20% of total flows on most sections of the route
- Links local communities along its route, such as Bowes and Brough, and links these communities with destinations to the east and west of the route, such as Darlington and Penrith
- Provides links to local and regional tourist destinations



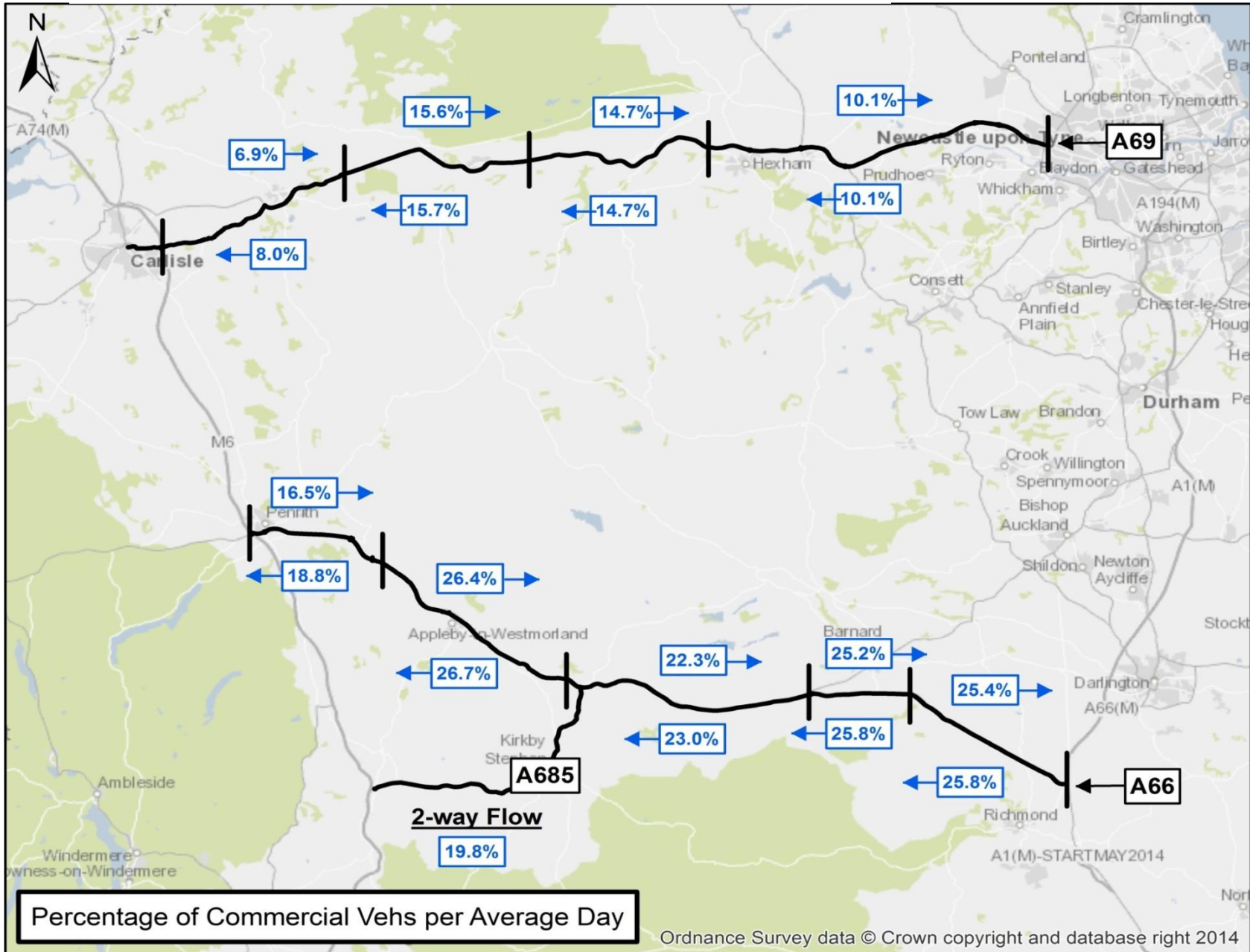
FREIGHT ORIGINS AND DESTINATIONS (2014)

Route	Eastbound	Percentage	Westbound	Percentage	Two-way	Percentage
A66	849,298	47%	955,522	53%	1,804,820	23%
A69	198,954	54%	168,582	46%	367,536	5%
M62	2,735,458	49%	2,867,566	51%	5,603,024	72%
Total	3,783,710	49%	3,991,670	51%	7,775,380	100%



Current Percentage of Commercial Traffic (AADT)

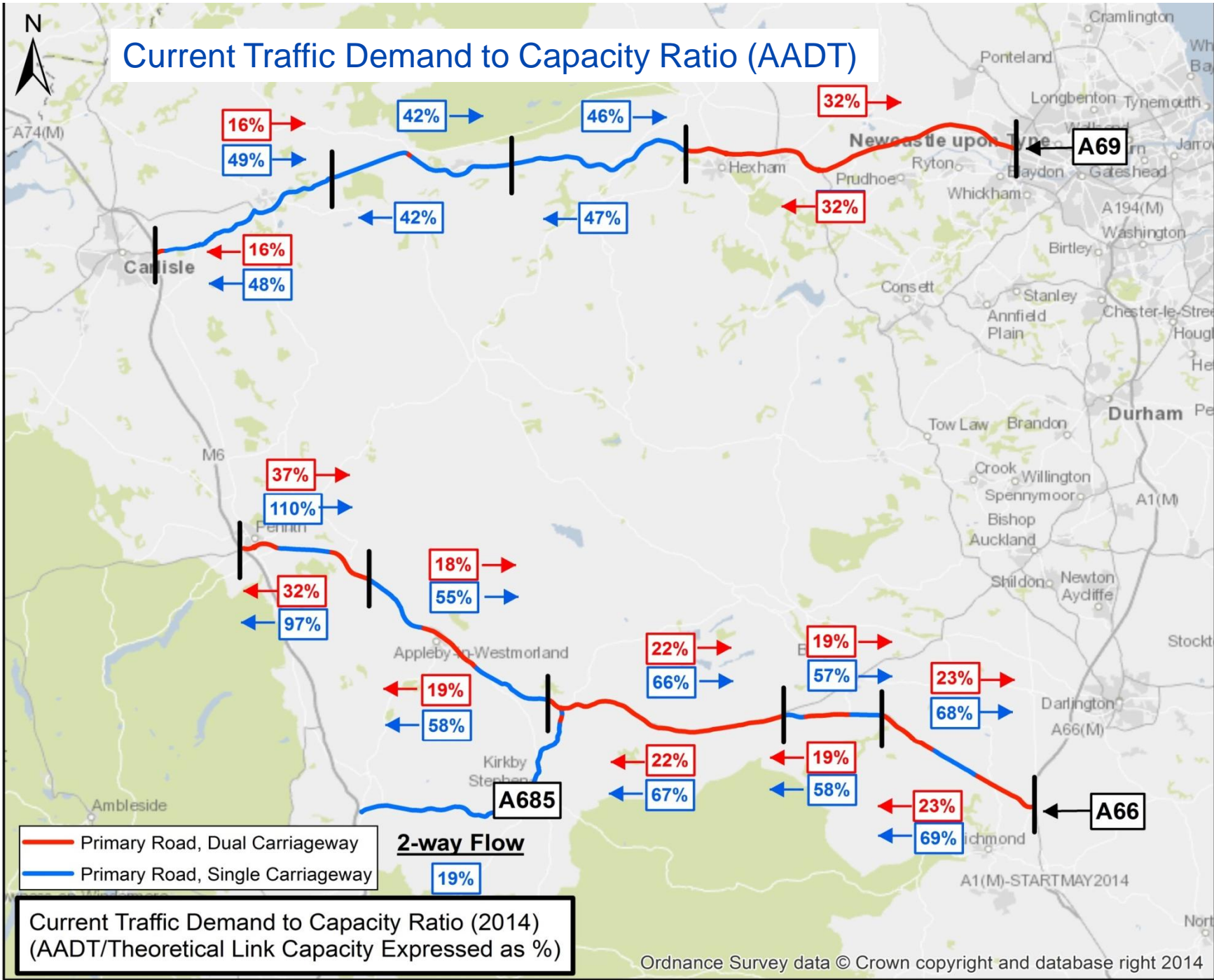
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KEY ISSUES IN THE A66/A685 CORRIDOR (1)

- Although journey times on the A66 are not generally affected by traffic congestion, the attractiveness of the A66 as a strategic route is diminished by the current mix of single and dual carriageway standards.
- Journey times are unreliable, due to the impact of slow-moving vehicles on single carriageway sections of the route and the lack of overtaking opportunities.
- Single carriageway sections also make it more difficult to keep the route open, and there are regular closures along the route due to planned roadworks, weather and incidents with two sections of the route experiencing a higher number of incidents than the national average.
- In the event of incidents, diversionary routes are poor, particularly for HGVs.

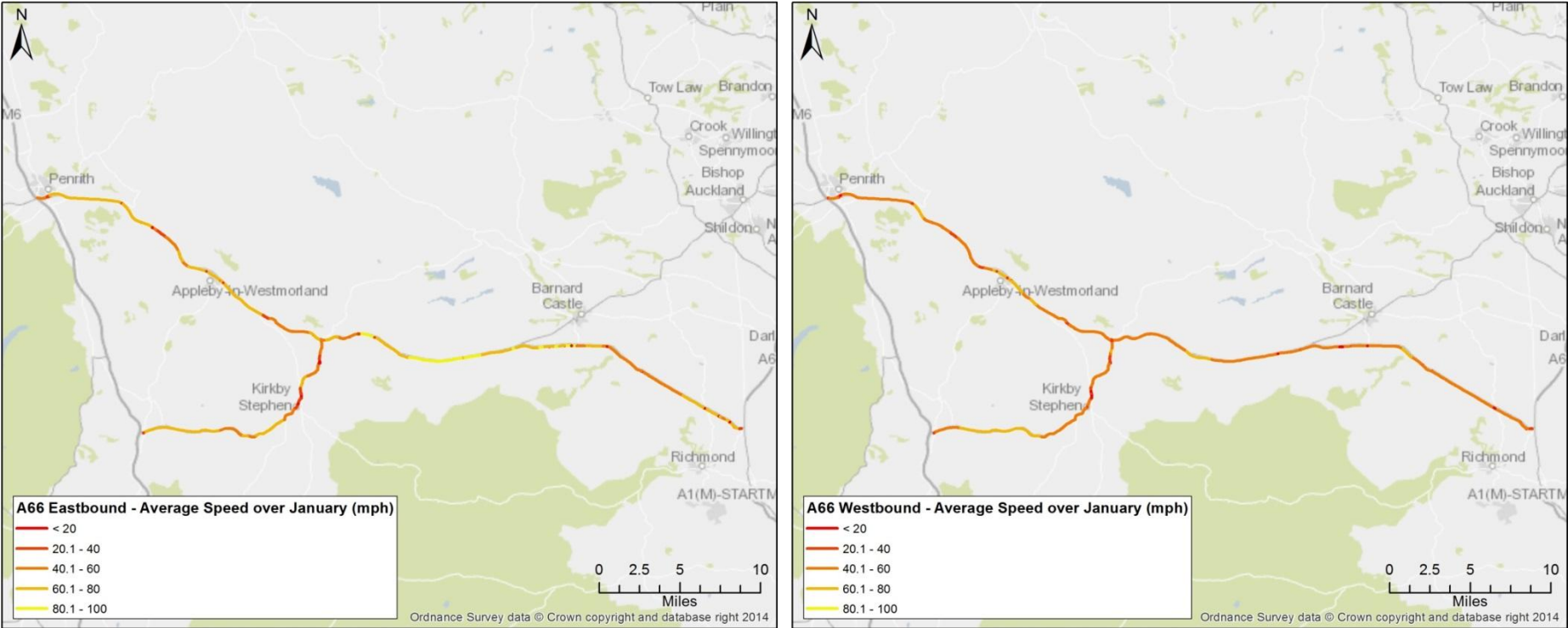
Current Traffic Demand to Capacity Ratio (AADT)



JOURNEY TIME RELIABILITY

Period	Average Reliability				
	1) A69 Carlisle to Brampton	2) A69 Brampton to Haltwhistle	3) A69 Haltwhistle to Hexham	4) A69 Hexham to Newcastle	5) A66 Penrith to Temple Sowerby
AM/PM Peak	97.8%	80.4%	82.9%	77.6%	83.9%
Period	Average Reliability				
	6) A66 Temple Sowerby to Brough	7) A66 Brough to Bowes	8) A66 Bowes to Greta Bridge	9) A66 Greta Bridge to Scotch Corner	10) A685 Tebay to Brough
AM/PM Peak	91.3%	87.2%	79.6%	88.4%	85.3%

JOURNEY TIMES/SPEEDS FROM TRAFFICMASTER



A66 Corridor (January 2015 Average Journey Times – Scotch Corner to Penrith)
Eastbound = 59 minutes and Westbound = 64 minutes (50 miles)

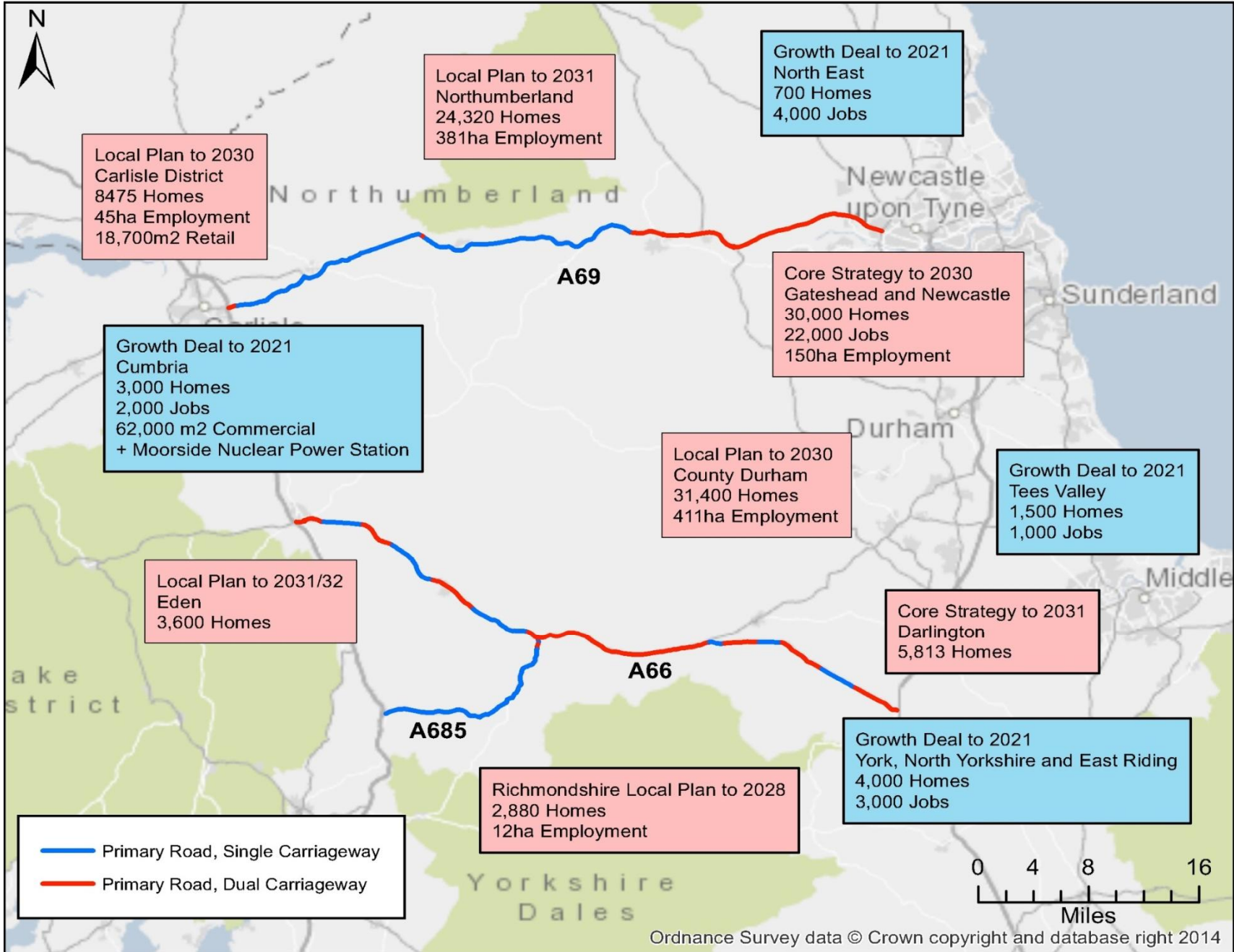
KEY ISSUES IN THE A66/A685 CORRIDOR (2)

- There is no real time journey information which exacerbates the journey uncertainty and unreliability issues and prevents better journey planning.
- The public transport alternative to the road link is poor. There is no rail line to provide an alternative public transport route to the A66 between Darlington and Penrith and there is low bus service provision.
- Although most communities along the route, such as Temple Sowerby, have been bypassed by previous interventions, there remains a community impact at Kirby Thore where the A66 continues to bisect the village.
- There are significant environmental constraints along the route.
- Weight and height limits on the A685 preclude use by HGVs.

	Section					
	1 (A66 Scotch Corner to Greta Bridge)	2 (A66 Greta Bridge to Bowes)	3 (A66 Bowes to Brough)	4 (A66 Brough to Temple Sowerby)	5 (A66 Temple Sowerby to Penrith)	6 (A685 Brough to Tebay)
Air Quality & Greenhouse Gases					Within 200m of a PCM link with over 40 µg m ⁻³	
Cultural Heritage	Scheduled Monuments within 1km.	Scheduled Monuments within 1km. Grade I and II Listed Buildings.				
Landscape		Within 2km of North Pennines AONB	North Pennines AONB crosses A69 carriageway			Situated within proposed extension of Yorkshire Dales National Park
Nature Conservation / Biodiversity	Kilmond Scar SSSI within 200m	A66 corridor crosses North Pennines Moors SAC/SPA		A685 carriageway crosses River Eden SAC/SSSI. Section 4 within 2km of North Pennines Moors SAC/SPA		
Noise & Vibration	Within/adjacent to Noise Important Areas		Within/adjacent to Noise Important Areas			
Road Drainage & Water Environment				Sections of carriageway within Flood Risk Zone 3a/b		
Peoples & Communities		Within 1.5km of Walney to Whitby Regional Cycle Route A66 crosses Pennine Way National Trail in Section 2		Eden Valley National Cycle Route crosses A66 carriageway		Walney to Whitby Regional Cycle Route crosses A685 carriageway
Geology, Soils & Materials	Black Scar Quarry SSSI within 2km		God's Bridge SSSI within 2km	River Eden and Tributaries SSSI (designated for geological & biological) crosses A66 carriageway		River Eden and Tributaries SSSI (designated for geological & biological) crosses A685 carriageway

FUTURE ISSUES IN THE A66/A685 CORRIDOR

- Development plans are focused on either end of the route...need to ensure access to any opportunities
- Other current highway interventions e.g. A1(M) will make the A66 more attractive as a strategic route
- Northern Powerhouse Agenda for regional economic growth:
 - Improved national and regional connectivity
 - Connectivity between cities
 - Increased freight traffic
 - Access to ports
- All increase the need for improved strategic links



A66/A685 CORRIDOR – CASE FOR INTERVENTION

- The A66 is a key national and regional strategic link for a range of south north and east west movements, particularly for freight
- Its importance will only increase with the economic growth of the Northern Powerhouse agenda, and other strategic road link improvements
- The current standard of the route is constraining use of the route, particularly for freight traffic, and inhibiting strategic connectivity and economic growth
- These problems will worsen as economic development and traffic growth takes place
- Interventions will therefore have a positive impact on travel reliability, local communities, network resilience and future national and regional connectivity and economic growth



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Northern Trans-Pennine Routes Strategic Study

A69 Corridor – Key Findings



FUNCTIONS OF THE A69 CORRIDOR

The A69 corridor between its junctions with the A1 and M6:

- Acts as the major regional road link between Tyne and Wear and North Cumbria/South West Scotland.
- Provides a key link for freight movements between the same areas and between the Tyne ports and the west coast ports.
- Provides links between local communities along its route, such as Haltwhistle and Hexham, and links these communities to destinations to the east and west of the route, such as Newcastle and Carlisle.
- Provides links to local and regional tourist destinations.



KEY ISSUES IN THE A69 CORRIDOR (1)

- Although journey times on the A69 are not generally affected by traffic congestion, the 33 mile single carriageway section between the M6 and Hexham, with the lack of overtaking opportunities, such as at Low Row, can create unreliable journey times.
- This unreliability is exacerbated by specific pinch points, such as Warwick Bridge which has a 30mph speed limit, and delays caused by accidents and incidents. The section of the route between Brampton and Carlisle, for example, has a higher slight collision rate than the national average.
- The lack of real time journey information also exacerbates the journey uncertainty and unreliability issues and prevents better journey planning.
- In the event of incidents, diversionary routes are poor, particularly for HGVs.

Slide 37

CGM1

I think this slide should be presented after slide 28 as the slide 28 provides the evidence for some of these findings

Corso Griffiths, Monica, 15/01/2016

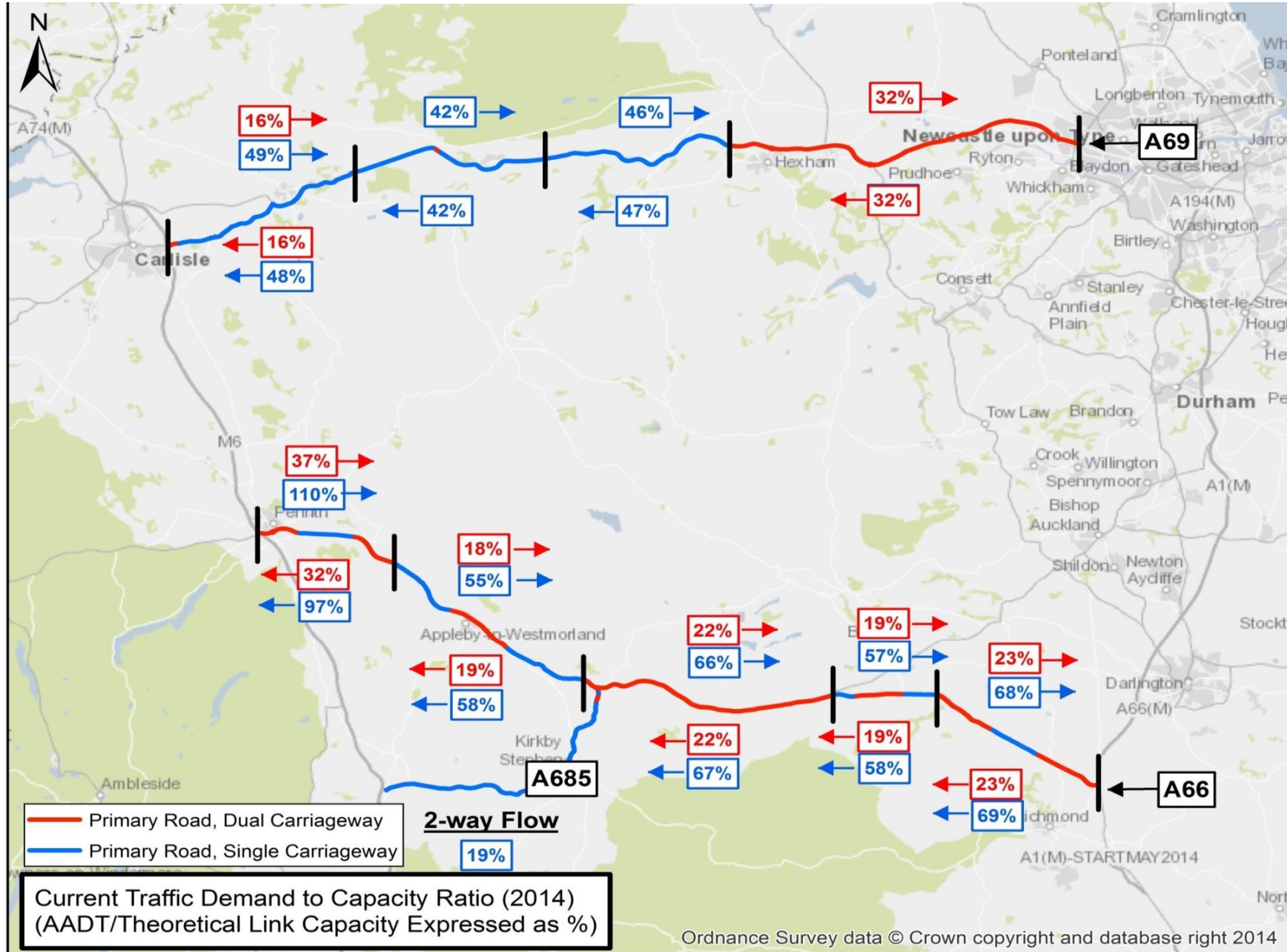
LT1

I intended to refer to slide 28 in the presentation to illustrate that point

Lund, Tim/MME, 18/01/2016

Current Traffic Demand to Capacity Ratio (AADT)

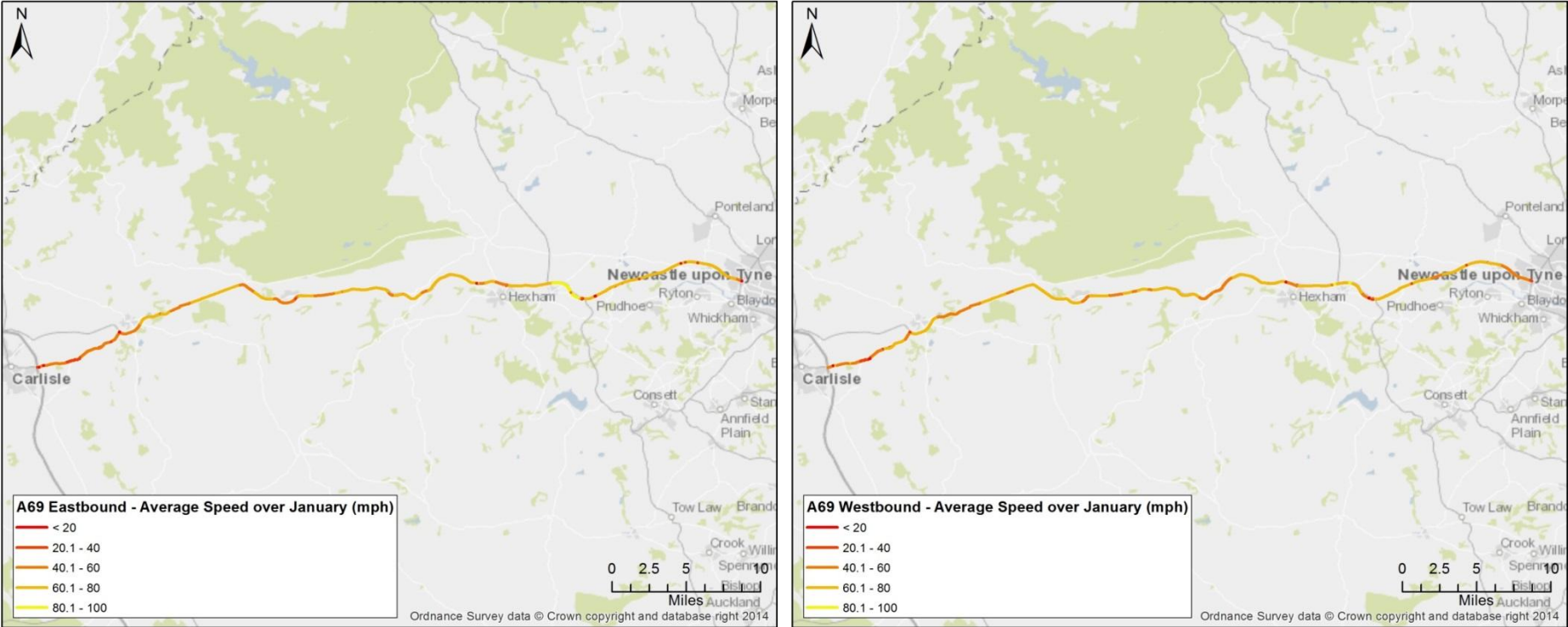
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AM/PM Peak	91.3%	87.2%	79.6%	88.4%	85.3%

JOURNEY TIMES/SPEEDS FROM TRAFFICMASTER



A69 Corridor (January 2015 Average Journey Times – Newcastle upon Tyne to Carlisle)
Eastbound = 72 minutes and Westbound = 75 minutes (52 miles)

KEY ISSUES IN THE A69 CORRIDOR (2)

- Although there is an alternative rail service, from Carlisle to Newcastle via various communities en route, current journey times are long and the service is infrequent.
- Although most communities along the route, such as Brampton and Haltwhistle, have been bypassed by previous interventions, there remains a community impact at Warwick Bridge where the A69 goes through the village.
- There are major environmental constraints in the corridor, including frontiers of the Hadrian's Wall World Heritage Site and the presence of the North Pennines Area of Outstanding Natural Beauty, Northumberland National Park and Northumberland Dark Sky Park all situated within 2km of the scheme corridor.

	Section			
	1 (A69 Newcastle to Hexham)	2 (A69 Hexham to Haltwhistle)	3 (A69 Haltwhistle to Brampton)	4 (A69 Brampton to Carlisle)
Air Quality & Greenhouse Gases	PCM link in excess of 40 $\mu\text{g m}^{-3}$			
Cultural Heritage	Frontiers of the Roman Empire World Heritage Site within or adjacent to the A69 corridor Scheduled Monuments within 1km Grade I and Grade II* Listed Buildings			
Landscape		Within 2km of North Pennines AONB	Within 2km of Northumberland National Park and Northumberland Dark Sky Park.	
Nature Conservation / Biodiversity	Hallow Hill SSSI 1.5km to the south East Denton Ancient Woodland adjacent to A69 carriageway.	North Pennines SPA/SAC within 2km; A69 crosses Tynewatersmeet SSSI.	River Eden SAC/SSI within 2km.	A69 carriageway crosses River Eden SAC/SSI.
Noise & Vibration	Sections of carriageway within/adjacent to Noise Important Areas			
Road Drainage & Water Environment	Sections of carriageway within Flood Risk Zone 3a/b			
Peoples & Communities	Hadrian's Cycleway crosses the A69 carriageway Pennine Way National Trail crosses the A69 carriageway			
Geology, Soils & Materials	Sites of Special Scientific Interest on all sections			

FUTURE ISSUES IN THE A69

- Development plans are focused on either end of the route...need to ensure access to any opportunities from communities along the route
- There are specific development plans which will be helped by improved highway links e.g. Newcastle Airport, Carlisle Airport
- The Northern Powerhouse Agenda will have some impact on the demand from strategic traffic
- Its greatest impact is likely to be on the need for good access to employment opportunities for local communities

A69 CORRIDOR – CASE FOR INTERVENTION

- The A69 performs a key function in integrating communities along the route into the wider North East/North West economy
- The route also supports access to key tourist destinations and some inter-regional freight
- There are some specific issues along the route which will constrain the future economic development of the communities and development growth areas, such as Carlisle and Newcastle airports
- Interventions will therefore have a positive impact on the economic vitality of local communities and the economic success of specific development areas.

BREAKOUT SESSION

- When considering our conclusions is there anything you disagree with or would like more evidence on?
- Are there any problems or issues we may have missed in our understanding of the current and future situation in the study corridors?



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Northern Trans-Pennine Routes Strategic Study

Draft Intervention-Specific Objectives



DRAFT STRATEGIC OBJECTIVES

Current and Future Issues:

- Attractiveness of both routes (esp. A66) as strategic links diminished by mix of dual/single standards – particularly for freight
- Importance of A66 as strategic link is likely to increase in response to Northern Powerhouse agenda
- A69 links local communities to regional centres and growth sites

Objectives:

Improving the Strategic Road Network (SRN)	Ensure the improvement, enhancement and long-term development of the SRN through improved national connectivity across the wider network
Facilitating Economic Growth – Freight	Improve the reliability and resilience of the A66 as a strategic route for freight traffic
Facilitating Economic Growth – Northern Powerhouse Agenda	Support the economic growth objectives of the Northern Powerhouse agenda by improved east-west regional connectivity and access to ports/airports

DRAFT ECONOMIC OBJECTIVES (1)

Current and Future Issues

- Access to services - reflection of the rural nature of the area
- Access to future opportunities either end of the routes
- Access to specific growth sites e.g. Carlisle Airport, Newcastle Airport
- Impact of incidents/accidents

Objectives:

Social and Distributional – Accessibility	Improve (and as a minimum maintain) access to services and jobs for the local area residents
Access to Regional and Local Development Sites	Improve access to regional and local growth sites served by the A66/A685 and A69
Improve Safety	Reduce the number and seriousness of incidents involving road users, including NMUs, particularly at identified accident cluster locations

DRAFT ECONOMIC OBJECTIVES (2)

Current and Future Issues

- Unreliability due to carriageway standards, incidents and accidents
- Important routes for access to tourism facilities
- Unreliability causes higher operating costs, particularly for freight
- Timely improvements required to assist economic growth agenda

Objectives:

Increase Reliability	Increase journey time reliability at identified pinch points on the A66/A685 and A69
Access for Tourism	Maintain and improve access to tourism attractions served by the A66/A685 and A69
Transport Efficiency	Reduce transport operating costs
Deliverability and Value for Money	Be progressed within the RIS 2 programme and represent value for money

DRAFT ENVIRONMENTAL OBJECTIVES

Current and Future Issues

- Major environmental constraints in both corridors
- Community impacts at specific points on the A66 and A69 e.g. Kirby Thore; Warwick Bridge

Objectives:

Environmental mitigation and opportunities	Avoid unacceptable impacts on the surrounding natural environment and landscape. Optimise the environmental opportunities and mitigation that any intervention could bring
Severance	Reduce the impact of the routes on severance for local communities

DRAFT OPERATIONAL OBJECTIVES

Current and Future Issues

- Journey time unreliability caused by accidents and incidents, such as road works and weather
- Diversionary routes are poor, particularly for HGVs

Objectives:

Improve network resilience

Reduce the impact that road works and closures of any kind cause to the transport system. Maintain the condition of the asset.

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Northern Trans-Pennine Routes Strategic Study

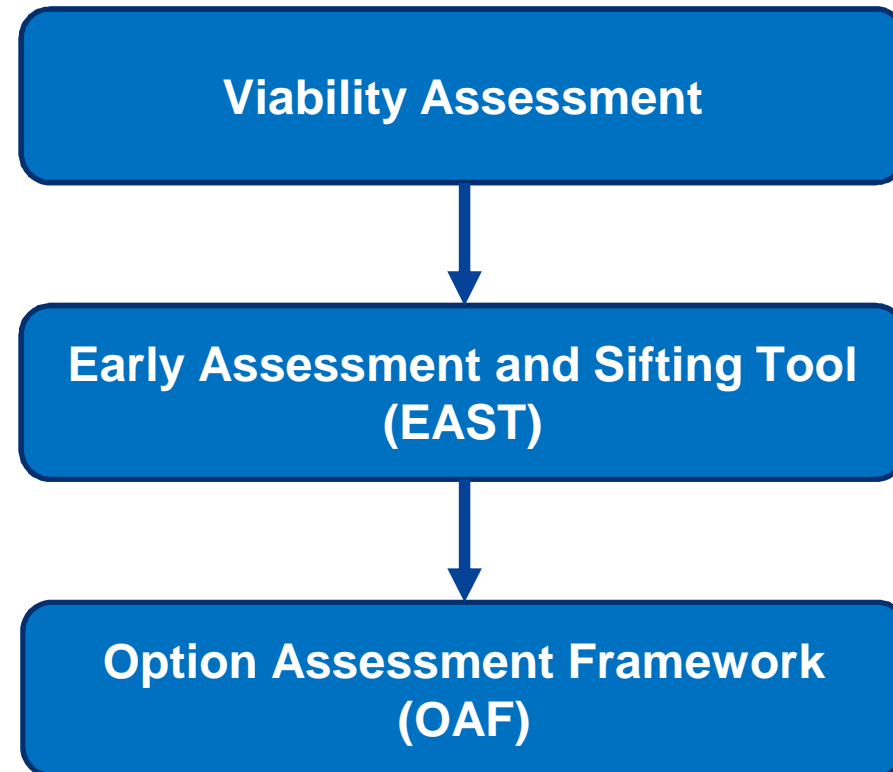
Option Assessment



OPTION ASSESSMENT - OVERVIEW

→ Assessment process follows the WebTAG: Transport Appraisal Process

→ Standard DfT guidance on the appraisal of infrastructure schemes



VIABILITY ASSESSMENT

The viability assessment will consist of two questions:

- Is the option located within the defined study area?
- Does the option fit the defined project scope of improving east-west links between the M6 and A1 in the A66/A685 and A69 corridors?

Option taken forward to EAST if the answer is “yes” to both



APPLICATION OF EAST

- EAST is a DfT tool based on the Treasury's five-case model and therefore meets DfT Assurance requirements

- Scores options against:
 - EAST categories – strategic fit; economic impact; management; financial; commercial

 - Intervention-specific objectives developed in response to the problems identified by this study

 - Highways England Business Plan objectives



OUTPUTS FROM EAST AND NEXT STEPS

➤ Output from EAST:

- scores are collated and presented for each of the options
- recommendations are then made on which options to take forward to the next stage

➤ Next stage:

- Option Assessment Framework (OAF) to assess these options in more detail





Northern Trans Pennine: Next Steps



Moving Britain Ahead



25 February 16



Next Steps – Calendar of Engagement

- ▶ Publication of the Interim Report – March 2016

- ▶ Stage 2- Stakeholder Reference Group Meeting – April 2016
 - ▶ Agreed intervention specific objectives informed by an evidence base
 - ▶ Identification of a range of potential investment options

- ▶ Progress Updates – How would you like to be kept informed?

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