



Department
for Transport

A1 NEWCASTLE-GATESHEAD WESTERN BYPASS

Feasibility Study Summary

March 2015

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Contents

1. Introduction	4
2. Context.....	5
3. Study aims and objectives.....	6
4. Current and future situation.....	8
5. Investment options	10
6. Investment cases	12
7. Study outcomes	13
Annex: Reference Group Members.....	15

1. Introduction

- 1.1 The A1 Newcastle-Gateshead Western Bypass feasibility study was one of six studies undertaken by the Department for Transport to look at problems and identify potential solutions to tackle some of the most notorious and long-standing road hot spots in the country.
- 1.2 The commitment to the studies was part of the biggest ever upgrade of the strategic national roads network, announced by the Government at the time of the 2013 Spending Review.
- 1.3 The studies have been progressed alongside the Highways Agency's Route Strategy programme, which is considering the current and future performance of the entire strategic road network, in order to inform future investment decisions.
- 1.4 This summary document for the A1 Newcastle-Gateshead Western Bypass feasibility study outlines: the study's aims and objectives; the current and likely future problems along the route; the development and assessment of potential options; the assessment of business cases for prioritised investment options; and the investment decisions and outcomes announced by Government in its Road Investment Plan¹.

¹ <https://www.gov.uk/government/collections/road-investment-strategy>

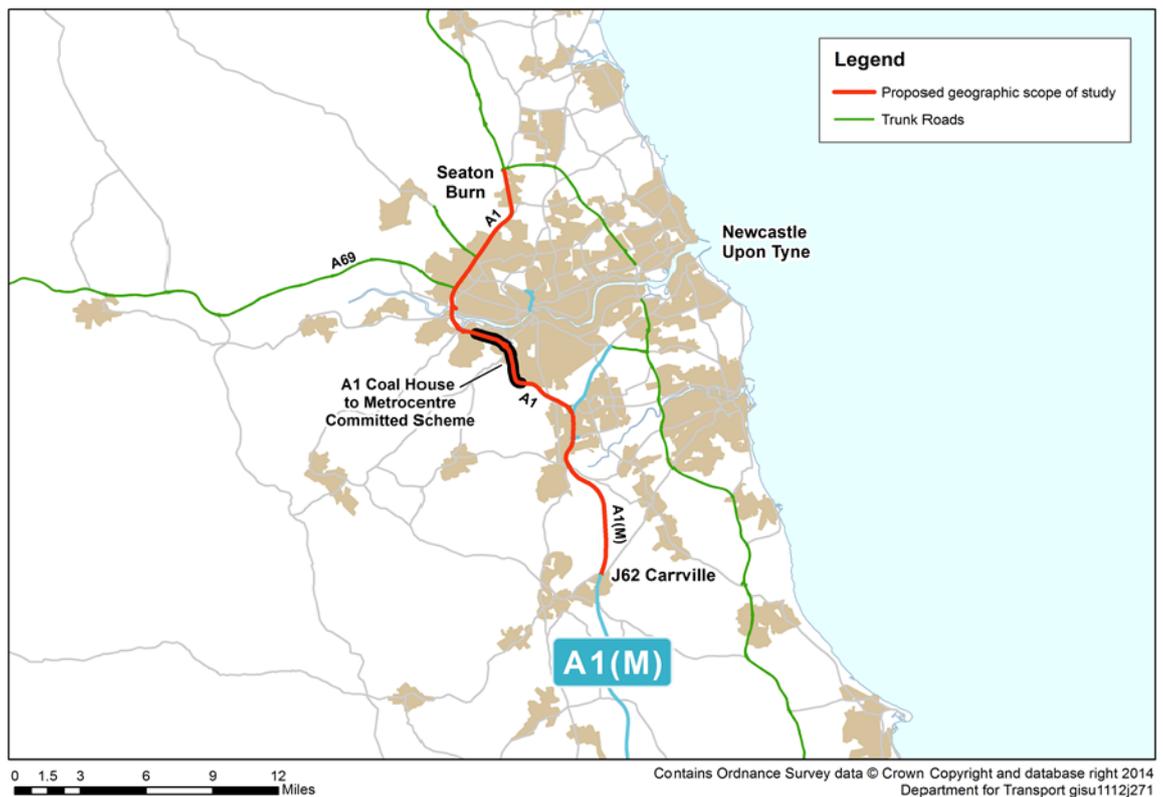
2. Context

- 2.1** The A1 Newcastle-Gateshead Western Bypass comprises 15 miles of primarily two lane dual carriageway with some of the most congested highway links in the North East region. The route has high economic importance for the region as it strongly aids both internal and external connectivity and it is an integral part of the Tyne and Wear transport network.
- 2.2** Public transport currently plays a relatively minor role along the route and offers little alternative for the local orbital journeys that utilise the corridor. Local heavy rail use is insignificant compared to the flows on the A1 Newcastle-Gateshead Western Bypass, with a poor local service.
- 2.3** Major improvements to this route are seen as crucial to enable the development aspirations of City of Newcastle and Gateshead Councils to come forward in line with their joint Local Development Framework “Draft Core Strategy”. Some of the major sites include areas around the Metrocentre, the Team Valley Trading estate as well as planned development associated with Newcastle International Airport and Newcastle Great Park.

3. Study aims and objectives

- 3.1 The aim of the study was to identify the opportunities and understand the case for future investment solutions on the A1 Newcastle-Gateshead Western Bypass that are deliverable, affordable and offer value for money.
- 3.2 In terms of geographic scope, the study considered the length of the A1 from the A1(M) Junction 62 at Carrville in the south to the junction of the A1 with the A19 at Seaton Burn in the north (Junction 80). The map showing the geographic scope of the study from the scope document is below.

Figure 1: The geographic scope of the A1 Newcastle-Gateshead Western Bypass feasibility study



- 3.3 The modal scope of the study was predominantly road-based, taking into consideration the details of performance and current investment proposals on the strategic road network. The study also took into consideration complementary measures on the local authority road network and related local transport improvements. The study of necessity looked at short to medium term interventions which could improve performance on the A1. Longer term solutions need to be based

on a sustainable transport strategy for Tyne and Wear, as highlighted in the Newcastle City Deal.

3.4 The objectives of the study were to:

- identify and assess the case, deliverability and timing of specific road investments that address existing and future priority problems on the Western bypass;
- identify and assess the case, deliverability and timing of specific complementary investment on local transport modes that improve the performance of the Western Bypass;
- understand the balance of benefits and impacts from potential individual investment proposals and any additional benefits or impacts from investment on a corridor basis; and
- evidence, where possible, the wider economic benefits from transport investment in the corridor.

3.5 The study took place from spring to autumn 2014 and was undertaken by the Highways Agency and its consultants. The study process followed that in the Department for Transport's guidance (WebTAG) for such studies and a stakeholder Reference Group was formed to ensure effective external involvement. This Reference Group acted as a sounding board and allowed the views of stakeholders to be captured and considered during the study process. The organisations represented on the group are listed in the Annex.

4. Current and future situation

- 4.1** The first part of the study reviewed evidence from other relevant study work and analysed current data to form a view as to the current and future situation on the A1 Newcastle-Gateshead Western Bypass. It also established both the availability of transport models and the need to undertake specific transport modelling for the study.
- 4.2** The A1 Newcastle-Gateshead Western Bypass is 15 miles of predominantly two-lane dual carriageway, with limited three-lane carriageway sections. More than 110,000 vehicles use the route every day on the busiest section, which is more than double the theoretical design capacity of the road; a very low percentage of traffic on the route is through traffic. There are sixteen junctions on the route. The Allerdene Bridge (between junctions 66 and 67) carries the A1 over the East Coast Main Line; it was constructed nearly 40 years ago and requires regular maintenance works to keep the bridge operational. Improvement works are currently underway between Coal House and the Metrocentre (the 4 mile section between junctions 67 and 71).
- 4.3** The analysis of available traffic data suggested that there is a number of problems and issues on the A1 Newcastle-Gateshead Western Bypass that impact upon the efficient and safe movement of people and goods. These problems are likely to be exacerbated in the future as a result of forecast traffic growth on the route, largely due to a number of proposed development sites to be delivered through the Newcastle/Gateshead Local Plan. Consideration is being given to potential major public transport improvements, such as extensions to the Metro system and reopening of the Leamside Line, which could potentially have some impact on travel demand on the A1 Newcastle-Gateshead Western Bypass but this is likely to be limited.
- 4.4** The problems and issues along the route were identified as:
- current and future traffic congestion – with increased journey times and low traffic speeds;
 - poor or low capacity junction standard and layout;
 - difficult merge and diverge between junctions leading to traffic congestion and accidents;
 - safety - relatively high accidents and incidents for vehicle occupants and for pedestrians and cyclists;
 - lack of information for drivers;
 - poor carriageway quality; and
 - traffic noise and poor air quality.

4.5 The data collection and analysis and identified problems and issues informed the definition of a set of intervention objectives that were used to identify and assess potential options to improve the route. The resulting intervention objectives were:

- to facilitate and support economic growth and housing at key centres and locations served by the corridor;
- to maintain and enhance the role of the corridor in facilitating the movement of goods and access to transport hubs, in particular ports and airports;
- to maintain and improve accessibility to jobs, housing and key services, with due regard to the needs of people living in disadvantaged areas and non-car users;
- to reduce delays and journey time unreliability which occur in the corridor;
- to improve the safety of the corridor for road users, including pedestrians and cyclists;
- to improve the resilience of the route, reducing the impacts of collisions and other perturbations for road users;
- to avoid, mitigate and compensate for potential impacts upon the built and natural environment; and
- to be substantially delivered by 2021 and represent value for money.

5. Investment options

- 5.1** Following the identification of problems on the route, the study reviewed previous work to identify proposals that could address the problems. The study considered a range of individual potential investment proposals and possible combinations of investment propositions, initially building on work done to date, rather than completing a fresh process of identification of investment proposals.
- 5.2** The study drew upon completed and recent related studies or strategies for the A1 Newcastle-Gateshead Western Bypass, including: the Tyneside Area Multi Modal Study (TAMMS, 2003); the Access to Tyne & Wear Study (Department for Transport, 2010); and the A1(M) Junction 62 Carrville to A1/A19 Seaton Burn route based strategy (Highways Agency, 2013). The study also captured details of potential investment proposals emerging from the first phase of the Highways Agency's London to Scotland East Route Strategy (within the study's geographic scope).
- 5.3** The option generation process identified a long list of discrete highway and public transport interventions, together with packages of interventions. The next stage was then to 'sift out' any potential solutions that clearly failed to meet the objectives, failed to alleviate the identified problems or failed to meet key deliverability and feasibility criteria.
- 5.4** Only those potential interventions that met all sifting criteria were selected for further consideration using the Department's Early Assessment and Sifting Tool – a total of sixteen options for the highway corridor and eight junction interventions.
- 5.5** Following this, six corridor options and seven junction options were taken forward for more detailed assessment against the DfT's Option Assessment Framework, with evidence presented against the best practice Treasury five case model (which assesses the strategic, economic, financial, management and delivery and commercial cases):
- J65-J67: online widening, with replacement of the Allerdene Bridge;
 - J71-73: an online widening option and a narrow lane option, both of which included closure of J72;
 - J74-J79: online widening and narrow lane widening options;
 - information technology scheme for the whole route; and
 - junction interventions for the following junctions: 62, 65, 66, 68, 71, 72 and 79.
- 5.6** All the highway corridor options scored beneficially against the majority of strategic policy and objective goals, with the larger-scale widening options scoring the highest. However, these larger-scale options tended

to score lower on deliverability due to the extent of engineering works required.

5.7 Based on the assessment, five options were prioritised for more detailed assessment:

- J65-J67: online widening (2.2 miles) with replacement of the Allerdene Bridge;
- J71-73: narrow lane widening (0.4 miles) with closure of J72;
- J74-J79: narrow lane widening (4.6 miles);
- technology option; and
- interventions for the following junctions: 62, 65, 66, 68, 71, 72 and 79.

6. Investment cases

- 6.1** The affordability, value for money (VfM) and deliverability of the prioritised proposals were then assessed. The study used the Department's transport appraisal guidance and considered the benefits and business cases for each of the transport investment proposals, as well as the cumulative or additional benefits and impacts from investment in the corridor as a whole.
- 6.2** The appraisal conducted was appropriate to the early stage of development of the proposals and will be developed further to ensure a full understanding of the impacts of the proposals and value for public money. Explanation of the way DfT assesses VfM can be found in the VfM note².
- 6.3** *J65 Birtley to J67 Coal House* - this generates high levels of travel time benefits and could offer very high value for money (with the cost of the replacement of the Allerdene Bridge excluded, as this was considered as a separate maintenance scheme).
- 6.4** *J71 Metrocentre to J73 Derwenthaugh* - the disbenefits due to delays associated with rerouting on the local road network caused by the closure of J72 outweigh the benefits to the A1. Consequently, the option is likely to offer poor value for money. A key benefit would be the reduction in accidents as a result of the closure of J72 leading to fewer vehicles on the weaving / merging section between J72 and J71. The monetary value of the accident saving is however not significant enough to alter the value for money of the scheme.
- 6.5** *J74 Scotswood to J79 North Brunton* – this offers very high value for money (due to the high level of journey time savings over this stretch of road) and is the best performing of the schemes in terms of value for money.
- 6.6** *Technology from J61 Bowburn to J80 Seaton Burn* - this option offers poor value for money with the large scheme costs outweighing the quantifiable benefits that are generated. The key benefits are strategic rather than quantifiable; the current approach to quantifying benefits of technology schemes is relatively high level.
- 6.7** *Junction interventions* - the key benefit of these options is to reduce delay at the junctions and mitigate the potential for queueing traffic to block back onto the A1. Based on experience of similar junction improvement schemes elsewhere, these are likely to result in a positive value for money case due to the relatively small cost of these schemes.

² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/255126/value-for-money-external.pdf

7. Study outcomes

- 7.1** Following completion of the study work, and consideration of the potential investment options, the Government has committed to take forward an overall investment package of around £3.5 billion for the six feasibility studies.
- 7.2** The A1 Newcastle-Gateshead Western Bypass is important to the economy of the North East, supporting both regional and local connectivity. The route has some of the most congested highway links in the region and it needs to perform well to support the ambitions for local growth. As part of the 2012 Newcastle City Deal and the 2013 Spending Review, the Government committed to widen the bypass from Coal House to the Metrocentre (J67 to J71) to three lanes, where delivery work has already started.
- 7.3** To tackle the current congestion and address the forecast impacts of traffic growth from planned development on the A1 Newcastle-Gateshead Western Bypass, the Government announced investment worth around £350m as part of the Road Investment Strategy in December 2014. This consists of the following:
- **A1 Birtley to Coal House (J65-J67)** – online widening south of Gateshead to three lanes. Alongside this enhancement, a separate maintenance scheme will replace and improve the Allerdene Bridge, which carries the A1 over the East Coast Main Line. Constructed nearly 40 years ago, the bridge requires regular maintenance works to keep it operational.
 - **A1 Scotswood to North Brunton (J74-J79)** – four and a half miles of narrow lane widening to allow three lanes of traffic through the junctions, with four lanes between some junctions.
- 7.4** Other improvement measures have also been identified. The planned investment package, for example, includes technology upgrades and a number of associated improvements for pedestrians and cyclists to provide better access and reduce severance caused by the bypass. Taken together, this investment will help to ease congestion and support local growth and tackle the on-going maintenance requirement of the Allerdene Bridge, making the route more resilient.
- 7.5** These proposals will require further work, engagement and consultation in order to reach agreement on the specific details of the proposals. Delivery will require the successful completion of the necessary statutory planning process and the continued development of business cases and demonstration of value for money.

Annex: Reference Group Members

Local Highway and Planning Authorities:

Durham County Council
Gateshead Council
Newcastle City Council
North East Combined Authority
North Tyneside Council
South Tyneside Council
Sunderland City Council

Local Economic Partnership:

North East LEP

Statutory Bodies:

Natural England

Other organisations:

Durham Wildlife Trust (3 Rivers - Local Nature Partnership and Living Waterways)
Environment Agency
Northumberland Wildlife Trust