



Department
for Transport

A47-A12 CORRIDOR

Feasibility Study Summary

March 2015

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1. Introduction

- 1.1 The A47-A12 corridor 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 A47-A12 corridor feasibility study outlines: the study's aims and objectives; the current and likely future problems along the route; the development and assessment of potential investment options; the assessment of business cases for prioritised investment options; and the investment decisions and outcomes announced by the Government in its Road Investment Plan¹.

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

2. Context

- 2.1** The A47 and A12 trunk roads form part of the strategic road network and provide for local, medium and long distance trips between the A1 and the east coast. The corridor connects the cities of Norwich and Peterborough, the towns of Wisbech, Kings Lynn, Dereham, Great Yarmouth and Lowestoft and many villages in a largely rural area. The route also passes through the Broads National Park.
- 2.2** Norwich and Peterborough have developed service-based economies and the towns along the route have retained market town and other functions including agricultural-related industries. In recognition of the potential for energy-related businesses on the east coast and to maximize support for the offshore energy sector, the Chancellor announced the establishment of the Great Yarmouth and Lowestoft Enterprise Zone in 2011. In December 2013 the Government announced a Greater Norwich City Deal which would enable knowledge based industries to develop.
- 2.3** There has been rapid population growth over the past decade and the area is expected to continue to grow. The cities of Peterborough and Norwich attract commuting traffic along the route, particularly during the morning and evening peak periods.
- 2.4** The route is 115 miles long; 54 miles (47%) is dual carriageway while 61 miles (53%) is single carriageway. Previous studies have proposed dualling a number of sections of the A47 in the short and long term, together with a number of junction improvements.
- 2.5** Comprehensive improvement of the A47 is a strategic aspiration of local MPs, local government, business and other stakeholders who have formed the A47 Alliance. Their aim is to capitalise on the potential economic benefits of improved accessibility to the Midlands and the North, as well as address safety issues on the route.

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 A47/A12 corridor that are deliverable, affordable and offer value for money.
- 3.2 In terms of geographic scope, the study considered the A47 trunk road, from its junction with the A1 at Wansford (west of Peterborough) through to Great Yarmouth, as well as the A12 trunk road from its junction with the A47 to Lowestoft.

Figure 1: Geographic scope of A47-A12 corridor feasibility study



- 3.3 The modal scope of the study was predominantly road-based, taking into consideration potential investment proposals on both the strategic and local road networks and the interaction with the local road network. The study also took into consideration the availability of rail and public transport services as well as the patterns of travel demand within the corridor.
- 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 problems on the A47-A12 corridor;

- understand the balance of benefits and impacts from potential individual investment proposals and any additional benefits or impacts from an investment on a corridor basis; and
- evidence, where possible, the potential of wider economic benefits from 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 studies and analysis to form a view as to the nature and scale of current and future performance on the A47-A12 route.
- 4.2** The road is a mix of dual and single carriageway, with a dualled bypass to Norwich and other short dualled sections. There is a number of direct accesses to properties along the route including those providing access to agricultural premises.
- 4.3** On single carriageway sections of the route, traffic flows can be between 14,000 and 22,000 vehicles a day, or moderately busy when compared with its design capacity. Around Norwich and King's Lynn, the road is of higher quality and copes with more traffic.
- 4.4** Fluctuation in flows along the route suggests that a significant proportion of trips are made along relatively short sections, rather than long-distance trips along the entire route. The number of HGVs also varies along the route.
- 4.5** Information from the 2011 Census similarly indicates that work-related journeys by car or bus are likely to use sections of the A47-A12 route, not end-to-end trips. The information also shows that a high proportion of work-related journeys are made by road. For example, on average over 70% of commuter trips are by car (either as driver or passenger), less than 10% by public transport and around 15% by walking or cycling.
- 4.6** The analysis of available traffic data and evidence from other studies indicated a number of problems along the route that impact on the efficient and safe movement of people and goods and have consequential effects on local communities:
- *Congestion* - the study identified a number of locations where capacity constraints contribute to congestion. For example, between the villages of Wansford and Sutton and between North Tuddenham and Easton. There are also congestion hotspots at key junctions such as the A47 junction with the A11 south of Norwich and junctions along the A12 in Great Yarmouth;
 - *Inconsistent carriageway standards* - the corridor comprises a mixture of single and dual carriageway sections leading to problems where capacity reduces;
 - *Lack of overtaking opportunities* - a proportion of the traffic using the corridor comprises HGVs whose speed is limited below that of cars and can, therefore, slow down other traffic on single carriageway sections. In addition, agricultural vehicles use the route and lead to much slower traffic speed, especially where the opportunities for overtaking along single carriageway sections are limited;

- *Poor resilience* - the study has identified resilience as an issue, particularly where there are single carriageway sections or no alternative routes and limited opportunities for refuges. Broken down vehicles can obstruct a lane and cause considerable delay especially on single carriageway sections of the road, where vehicles already have difficulty passing. The Wansford to Sutton section of the A47 is one such section;
- *Collision hotspots* - the overall collision and casualty rates appear to be decreasing. The exception are hotspots such as the section between Wansford to Sutton and Blofield to North Burlingham where the collision rate is above the route and national averages; and
- *Limited rail and public transport alternatives* - the A47 is used by bus services, but there are no direct train services parallel to the A47. Rail services between Peterborough and Norwich require a change at Ely and some towns - such as Wisbech, Swaffham and Dereham - are not served by rail. There is, therefore, limited scope for changing the proportion of journeys undertaken by public transport along the corridor.

4.7 The study also identified a number of environmental challenges. The route passes through the Norfolk Broads National Park, a unique landscape of shallow lakes and rivers to the east of Norwich. It also passes through or close to other areas and assets protected by national or international designations for their environmental or heritage value; for example, Ramsar sites and scheduled ancient monuments.

4.8 The cities and districts continue to plan for significant growth with over 50,000 new jobs and 100,000 new homes planned for the next 15 years. Analysis indicates that as a result of such development, congestion is expected to worsen, particularly on the Wansford to Sutton section of the A47, the Guyhirn Roundabout linking the A47 with the A141, the Thickthorn Interchange with the A11 and junctions in Great Yarmouth.

4.9 The evidence and analysis of identified problems and issues were used to define a set of intervention objectives in order to identify and assess potential investment options. The objectives established were:

- *Support economic growth:*
 - facilitate growth in employment at key centres and locations along the A47/A12 corridor; and
 - facilitate growth in housing at key development hotspots along the corridor.
- *Improve capacity, resilience and safety:*
 - reduce delay and queues that occur during the peak hours and seasonal times of the year;
 - improve the resilience of the route, such that the number of incidents and the effects of incidents is reduced; and
 - reduce the number of collision on the A47/A12 at key hotspots on the corridor.
- *Environment* - minimise unacceptable impacts on the surrounding natural environment and landscape and optimise the environmental opportunities and mitigation that the intervention could bring.

4.10 The study also prioritised challenges to be addressed along the route. It did so by drawing upon the Highways Agency's Route Strategy Evidence Report² to identify 32 links or locations along the route and categorising these as having either current issues or likely future problems. By prioritising current issues as well as future problems based on forecast growth in the area, the study prioritised 22 challenges.

²East of England Route Strategy Evidence Report, April 2014, available at <http://assets.highways.gov.uk/our-road-network/route-strategies/East%20of%20England.pdf>

5. Investment options

- 5.1** Following the identification of the current and future situation, the study reviewed previous work to identify investment proposals that could address the issues and problems. The study considered a range of individual investment proposals, as well as combinations of investment propositions. This approach looked to build on work done to date, rather than completing a fresh process of identification of investment proposals.
- 5.2** The study drew upon a range of completed or recent related studies and strategies including the Thickthorn Interchange Improvements completed by Norfolk County Council in June 2013³, and the A47 Blofield to North Burlingham Dualling Scheme that was withdrawn in the 2010 spending review.
- 5.3** The 22 challenges that were identified as having problems either currently or imminently in the future were considered further at a high level. At this stage, a range of possible measures was developed for each for comparison. Usually three options were considered for tackling the problems at each challenge. The total of 66 options was then assessed using criteria from the Department's Early Assessment and Sifting Tool. Twelve met most of the intervention objectives and high level deliverability and feasibility criteria and were prioritised for assessment:
- A47 dualling between A1 Wansford and Sutton, west of Peterborough;
 - A47 dualling between North Tuddenham to Easton;
 - A47 dualling between Blofield to North Burlingham;
 - A47/A141 Guyhirn junction improvement;
 - A47/A11 Thickthorn junction improvement;
 - A47/A12 Vauxhall junction improvement;
 - A12 Asda junction improvement;
 - A47 Acle Straight safety measures;
 - A12 Gapton Hall roundabout improvement;
 - A12 Harfreys roundabout improvement;
 - A12 Bridge Road junction improvement; and
 - A12 James Paget hospital junction improvement.

³Norfolk Council Engineering Report for Thickthorn: <http://www.gndp.org.uk/content/wp-content/uploads/downloads/2013/06/Final-Engineering-Report-P3-reduced-size.pdf> – Accessed November 2014

- 5.4** The twelve prioritised options were assessed 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 commercial cases. The 'economic case' requires consideration of environmental and social as well as economic impacts of options.
- 5.5** All twelve options scored beneficially against the majority of the intervention objectives and were, therefore, considered to indicate good strategic fit. They were all prioritised for further assessment.

6. Investment cases

- 6.1** The study considered a high level assessment of the case for dualling all remaining single carriageway sections of the A47. It concluded that there is currently no case for such a proposal and confirmed that the approach of identifying and tackling hotspots along the corridor is likely to deliver better Value for Money (VfM).
- 6.2** The affordability, VfM and deliverability of the prioritised proposals were then assessed. The study used the Department's transport appraisal guidance and considered the 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.
- 6.3** The appraisal conducted was appropriate to the early stage of development of the proposals and will be further developed 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 note⁴.
- 6.4** One business case was developed for the route comprising the full package of prioritised interventions:
- *A47 A1/Wansford to Sutton dualling* – this could reduce the risk of collisions, increase resilience and improve capacity to support economic growth. The assessment indicated good strategic fit and medium VfM;
 - *A47/A141 Guyhirn Junction improvements* – this could improve capacity to support economic growth. The assessment indicated good strategic fit and high VfM;
 - *A47 North Tuddenham to Easton dualling* – this could reduce the risk of collisions, increase resilience, improve capacity to support economic growth. The assessment indicated good strategic fit and high VfM;
 - *A47/A11 Thickthorn Interchange* - improvement of this interchange could improve access into Norwich and support economic growth. The assessment indicated a good strategic fit. While it indicated that a higher cost solution could result in low to medium VfM, the assessment also identified scope for a lower cost solution comprising less scope, which could potentially offer the prospect of medium to high VfM;

⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/255126/value-for-money-external.pdf

- *A47 Blofield to North Burlingham dualling* – this could reduce the risk of collisions, increase resilience and improve capacity to support economic growth. The assessment indicated good strategic fit and high VfM;
- *A47/A12 Vauxhall Roundabout and Great Yarmouth Station improvements* – this package could improve capacity to support economic growth. The assessment indicated good strategic fit and very high VfM;
- *A12 Package of roundabout improvements in Great Yarmouth* - this package includes improvements at Gapton Hall Roundabout, Harfreys Roundabout, Bridge Road and James Paget Hospital Junctions to reduce congestion and support economic growth. The assessment indicated good strategic fit and very high VfM; and
- *A47 Acle Straight measures* - the intention is to address safety concerns on the A47 but this requires work with Natural England and the Norfolk Broads National Park to assess the environmental impacts and mitigation of potential route solutions.

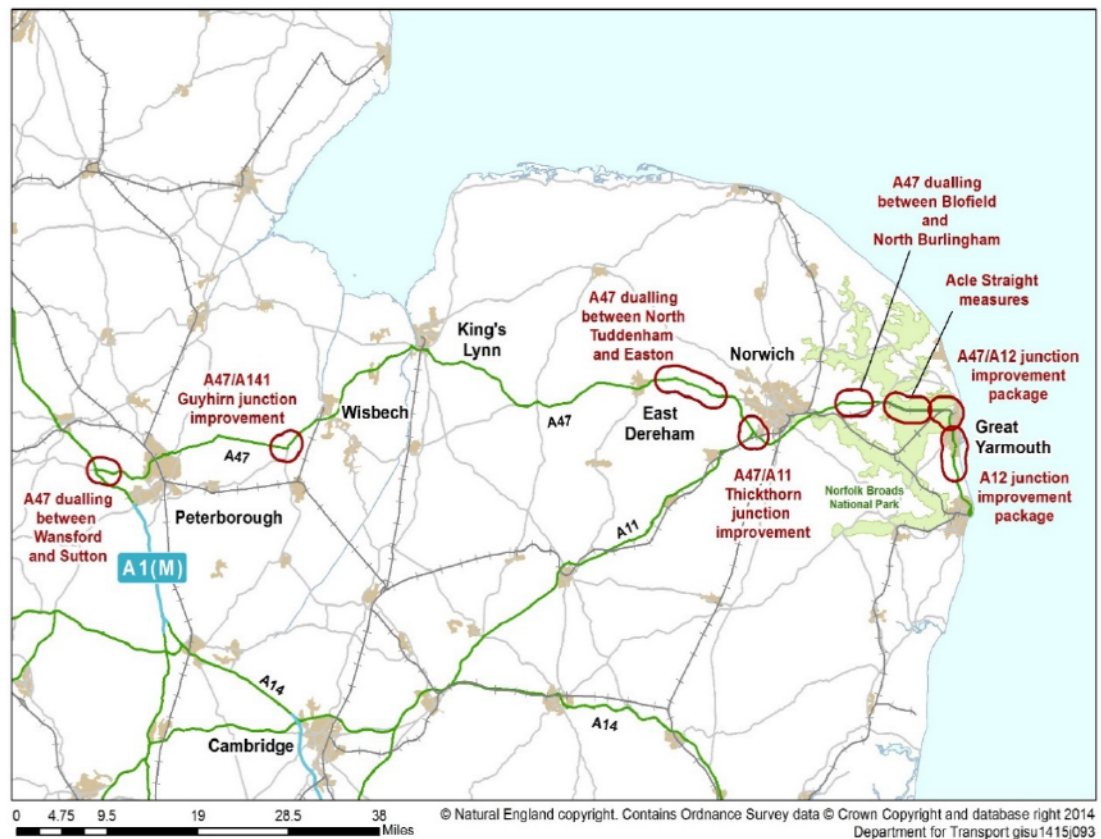
7. Study outcomes

- 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 A47/A12 trunk road runs for 115 miles from the west of Peterborough to the east coast ports of Great Yarmouth and Lowestoft. It also passes through the Broads National Park. There has been rapid growth in the area over the past decade and the area is expected to continue to grow. This means congestion and delay for users, as well as a greater risk of accidents. While there have been some improvements in recent years, over half the road is still single carriageway.
- 7.3** Most people travel relatively short distances, rather than the entire length of the route and some stretches of the road are over-capacity. For that reason there is no case for making the entire route a dual carriageway at this moment in time.
- 7.4** The Government does, however, recognise the need to address key challenges on specific parts of the route and, therefore, announced investment worth over £300 million as part of the Road Investment Strategy in December 2014. This consists of the following:
- *A47 Wansford to Sutton* – dualling of the A47 between the A1 and the dual carriageway section west of Peterborough;
 - *A47/A141 Guyhirn junction* – creation of a new, larger junction linking the A47 and A141;
 - *A47 North Tuddenham to Easton* – dualling of the single carriageway section of the A47 between Norwich and Dereham, linking together two existing sections of dual carriageway;
 - *A47/A11 Thickthorn junction* – improvement of the interchange between the A47 and A11, improving access into Norwich;
 - *A47 Blofield to North Burlingham* – dualling of the A47 to fill a gap in the dual carriageway section between Norwich and the Acle Straight;
 - *A47 & A12 junction enhancements* – improvements to junctions throughout Great Yarmouth, including reconstruction of the Vauxhall roundabout;
 - *A47 Acle Straight measures* – addressing safety concerns by making short-term and long-term improvements, potentially including installation of safety barriers, junction improvements, road widening and capacity improvements. These will be subject to appropriate environmental mitigation, working with Natural England and the National Park Authority at all stages; and

- *Renumbering part of the A12* – the Department for Transport intend to renumber the A12 between Great Yarmouth and Lowestoft as the A47 to reflect the route as a continuous corridor.

7.5 These proposals in this investment package will require further work, engagement and consultation in order to reach agreement on the specific details of the proposals. Any scheme progressed will require the successful completion of the necessary statutory planning process and the continued development of business cases and demonstration of value for money.

Figure 2: Outcomes from the A47-A12 corridor feasibility study



Annex: Reference Group Members

Local Highway and Planning Authorities:

Cambridgeshire County Council
Fenlands District Council
Norfolk County Council
Peterborough City Council
Suffolk County Council
Waveney District Council

Local Economic Partnerships:

Greater Cambridgeshire and Greater Peterborough LEP
New Anglia LEP

Statutory Bodies:

English Heritage
Natural England
The Broads Authority

Other organisations:

A47 Alliance
Campaign for Better Transport
Campaign to Protect Rural England
RAC Foundation
RSPB
Suffolk Chamber of Commerce
The Broads Society
The Wildlife Trusts

Members of Parliament:

George Freeman MP
Elizabeth Truss MP
Steve Barclay MP