



Department
for Transport

Delivery and outcomes of Local Major schemes: meta-evaluation of schemes funded 2006-2010

Moving Britain Ahead

August 2018

The Department for Transport has actively considered the needs of blind and partially sighted people in accessing this document. The text will be made available in full on the Department's website. The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard please contact the Department.

Department for Transport
Great Minster House
33 Horseferry Road
London SW1P 4DR
Telephone 0300 330 3000
General enquiries <https://forms.dft.gov.uk>
Website www.gov.uk/dft

OGL

© Crown copyright 2018

Copyright in the typographical arrangement rests with the Crown.

You may re-use this information (not including logos or third-party material) free of charge in any format or medium, under the terms of the Open Government Licence v3.0. To view this licence visit <http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3> or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: psi@nationalarchives.gsi.gov.uk.

Where we have identified any third-party copyright information you will need to obtain permission from the copyright holders concerned.

Contents

1. Executive Summary	5
Benefits of local transport schemes	5
Delivering local transport schemes	5
Value for money	6
Lessons learned	6
2. Introduction	7
Background	7
3. The schemes	9
Scheme geography	9
Scheme costs	10
Scheme Chronology	11
4. Overview of method	12
Summary of evaluations	12
Desktop review of data quality	12
Desktop meta-evaluation	13
Stakeholder feedback surveys	13
5. Achieving objectives	14
Highway schemes	14
Public transport	17
Integrated Transport Schemes	19
Using these findings	20
6. Delivering on time	21
Delivering on time	21
Using these findings	23
7. Delivering to budget	24
Delivering to budget	24
Using these findings	27
8. Achieving value for money	28
The outturn benefit-cost ratio	28
9. Other findings on Local Major schemes	30

Overview	30
What are the main benefits of Local Major schemes?	30
How do Local Major schemes affect passenger experience?	30
Do Local Major schemes affect people's choice of transport?	31
How do Local Major schemes affect the environment?	31
How do Local Major schemes affect local economies?	32
How do Local Major schemes affect local bus operations?	33
How well have impacts of Local Major schemes been forecast and what are the reasons for any inaccuracies?	33
10. Lessons learned	35
Lessons for scheme promoters	35
Lessons for the Department for Transport	35
Annex A: Short scheme descriptions	36

1. Executive Summary

- 1.1 This meta-evaluation reviews the outcomes of 52 local major transport schemes funded by the Department for Transport (DfT), approved for construction between 2006 and 2010. The schemes account for £2.6bn of public investment, of which the Department contributed £1.8bn. 35 schemes aimed to improve highways, 11 public transport and 6 schemes the integration of both.
- 1.2 The meta-evaluation is based on DfT financial monitoring data and the individual scheme evaluations undertaken mostly one year after a scheme's opening by the local authority who developed the scheme. This report updates and complements the findings previously reported by Atkins et al. (2014).¹
- 1.3 Differences in the quality of, and the approaches used in scheme evaluations limit the ability of this meta-evaluation to draw reliable conclusions about the effectiveness of schemes. The Department has since worked to improve the approaches used by local authorities through the development of a comprehensive evaluation framework.²

Benefits of local transport schemes

- 1.4 **Local transport schemes usually succeeded in achieving their immediate objectives.** Highway schemes tended to relieve congestion, reduce journey times and improve traffic flow. Public transport schemes tended to increase passenger satisfaction and, less consistently, improve journey times and reliability. Schemes integrating road and public transport usually succeeded in reducing journey times and traffic volumes.
- 1.5 Scheme evaluations that looked at changes to air quality usually found improvements in NO₂ and CO₂ levels. Scheme evaluations that assessed noise levels often found that noise decreased in some areas but increased in others.
- 1.6 Evaluations that reported safety and economic indicators have generally found inconclusive evidence of change one year after opening a scheme. All scheme promoters are required to carry out a 5-year post-opening evaluation to address safety and economic impact questions.

Delivering local transport schemes

- 1.7 On average, **schemes were delivered in 2 years and 7 months.** A third of schemes (33%) were delivered ahead of schedule or on time. Across all schemes, schemes opened on average six months later than forecast. The most common reasons for delay were unforeseen environmental, ecological or weather issues and utility works.

¹ Atkins, AECOM (2014) Meta Evaluation of Local Major Schemes: Final Report, London: Department for Transport.

² Department for Transport (2012), Monitoring and Evaluation Framework for Local Authority Major Schemes.

- 1.8 **Schemes cost on average £50m**, ranging from £6m to £745m. Nearly half of schemes (42%) were delivered below or on budget. The average cost overrun across schemes was 9%. Common reasons for overspending were increased cost of contractors and of statutory undertakers like utility companies and telecoms.

Value for money

- 1.9 Achieving value for money means delivering benefits at comparatively low cost. For all schemes being considered for funding by DfT, a 'benefit-cost ratio' (BCR) is calculated that compares the expected benefits with the expected costs³. A benefit-cost ratio can also be calculated at the evaluation stage, replacing input and outturn assumptions with actual measurements.
- 1.10 Only 5 scheme evaluations calculated an evaluation BCR. In these cases, the calculation suggests that the schemes had achieved high or very high⁴ value for money. In 3 of these cases the evaluation BCR was broadly in line with the appraisal BCR, and in 2 cases it was lower.

Lessons learned

- 1.11 **Scheme promoters** should bear in mind that timescales can slip and plan accordingly. They should be aware of common reasons for delay and how these might be avoided or mitigated. Scheme promoters should also ensure that they take account of the most common causes of delay and overspend in their appraisal. Finally, promoters should ensure that evaluations are focused on the scheme's key objectives, and compare outcomes with both baseline measures and the changes expected at the scheme planning stage.
- 1.12 The **Department for Transport** has already acted on many of the lessons identified here. It has improved coherence between scheme evaluations through the 2012 Framework on Local Major Scheme Evaluations. The framework standardises scheme aspects to be monitored and requires, where proportionate, the calculation of an evaluation benefit-cost ratio. In addition, the Department is developing guidelines to further align evaluation methodologies. It is also reviewing the optimism bias corrections that are part of the scheme appraisal process.

³ A benefit-cost ratio of 2 would mean that for every £1 invested, a benefit of £2 would be achieved.

⁴ "High" value for money is equivalent with a BCR of 2 or higher, "Very high" value for money with a BCR of 4 or higher.

2. Introduction

Background

- 2.1 Between 2006 and 2010, the Department for Transport ('DfT', or 'the Department') committed to invest in 52 Local Major Transport infrastructure schemes. The Department provided this funding to enable the development of local transport infrastructure projects that were too large to be funded through local authorities' own budgets.
- 2.2 The schemes were originally proposed by the relevant regional entities, including the Regional Development Agencies that existed at that time, and approved for construction under the then Government's Regional Funding Allocation policy. The schemes aimed to improve local roads and junctions ("highway schemes"), public transport ("public transport schemes") or the integration of roads and public transport ("integrated transport schemes").
- 2.3 As part of this programme, Local authorities committed to evaluate their schemes 1 and 5 years after a scheme opened. The evaluations aimed to show to what extent schemes had met their objectives and to draw out any lessons. Local authorities published the evaluation results in post-opening monitoring and evaluation reports.
- 2.4 To learn lessons from across these evaluations, the Department commissioned a meta-evaluation, conducted by Atkins and AECOM, which was published in 2014.⁵ This drew together findings from 1-year post-opening monitoring and evaluation reports for 23 schemes originally approved between 2006 and 2010. At this time, however, several schemes had not published monitoring and evaluation reports and could not be included in the meta-evaluation.
- 2.5 The current report updates that 2014 meta-evaluation. Compiled by Department for Transport analysts, it combines the original analysis with findings from 29 additional schemes, to cover data from the 52 schemes approved between 2006 and 2010.⁶ This update was carried out to increase the robustness of the 2014 analysis.
- 2.6 Figure 1 sets out a timeline of when schemes were approved, constructed, completed and when evaluation reports became available. It shows that the last schemes completed in 2015, with the latest evaluation reports becoming available in 2017.

⁵ "Meta-evaluation of local major schemes: final report", DfT (2014), hereafter referred to as "the 2014 evaluation". This report also defines the term "meta-evaluation", which, in simple terms, refers to a synthesis of individual evaluations to estimate progress against a defined set of objectives. It differs from a "meta-analysis" in that it does not attempt to analyse data aggregated from individual evaluation reports.

⁶ This includes the 5 schemes identified as without evaluation report in the 2014 evaluation (Greater Bristol Bus Network, A631 West Bawtry Road Improvement, Kirklees Strengthening and Maintenance Work, North Middlesbrough Accessibility and Poole Bridge Regeneration) as well as 24 schemes not considered at the time.

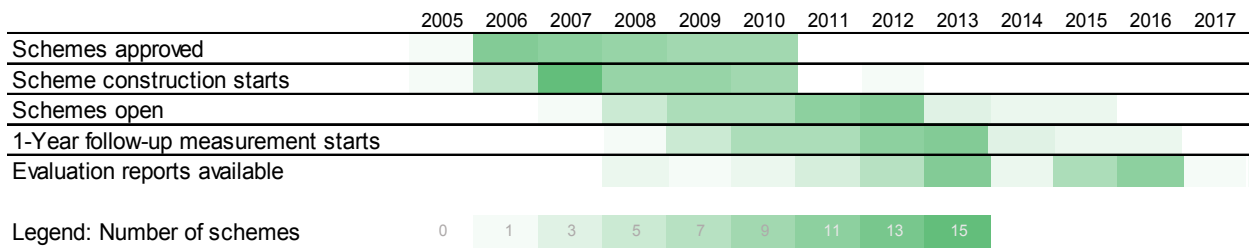


Figure 1 Scheme construction and evaluation timeline

2.7 Many schemes covered in this evaluation opened during or shortly after the economic recession in 2008. Between 2007 and 2012 road traffic in England dropped by 10 billion vehicle miles (3.7%, see Figure 2). This drop is likely to have affected traffic-related outcomes measured in different schemes, although it is not possible to say which schemes and how much.

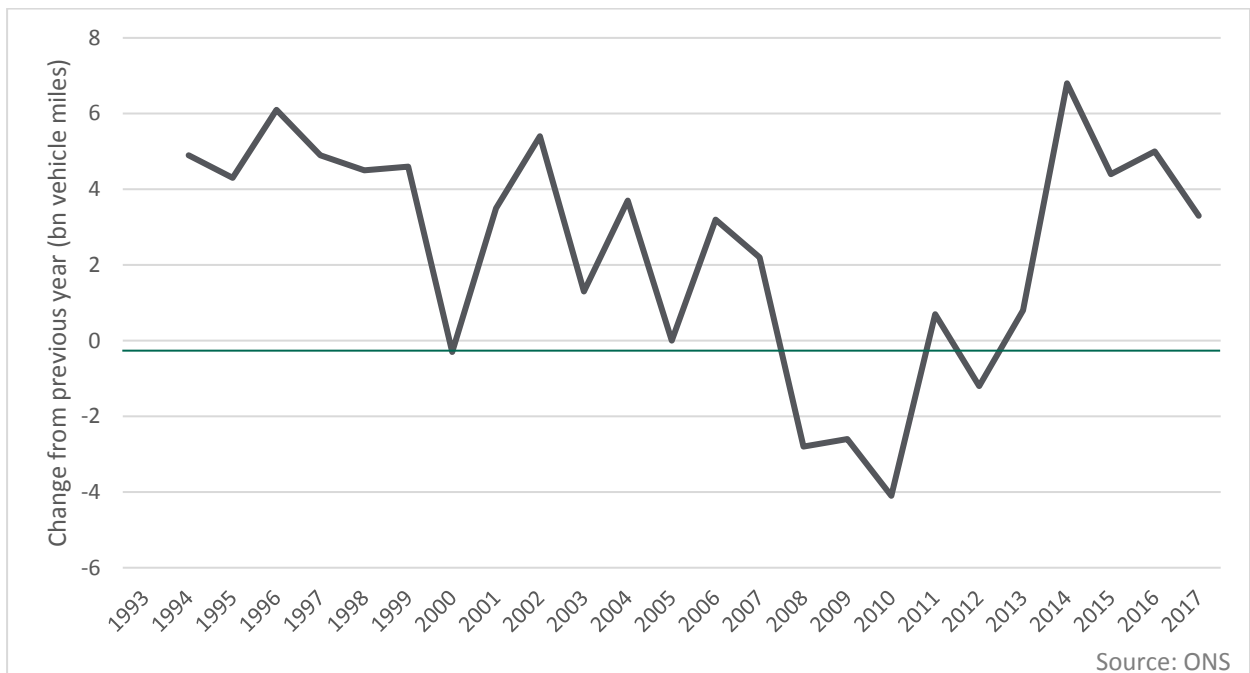


Figure 2 Change in road motor traffic from previous year, England

- 2.8 The updated analysis is intended to be useful both to the Department, as it continues to develop its guidance on appraisal, monitoring and evaluation, and to Local Authorities, when considering which interventions to consider and planning evaluations of transport projects.
- 2.9 It is important to note that the evaluation plans for schemes included in this report were approved prior to the launch of the 2012 Monitoring and Evaluation Framework.⁷ Local transport schemes commissioned in 2012 and later (as part of the "Development Pool and DfT retained Local Growth Fund schemes from 2015/16") are monitored and evaluated using that framework, which means they are monitored and evaluated more comprehensively than the schemes considered in this report (see *Lessons Learned* chapter at the end of the report).

⁷ "Monitoring and Evaluation Framework for Local Authority Major Schemes", DfT (2012)

3. The schemes

Scheme geography

3.1 Between 2006 and 2010 the Department for Transport funded 52 large infrastructure schemes in all English regions, set out in Figure 3. Scheme descriptions are included in Annex A:.

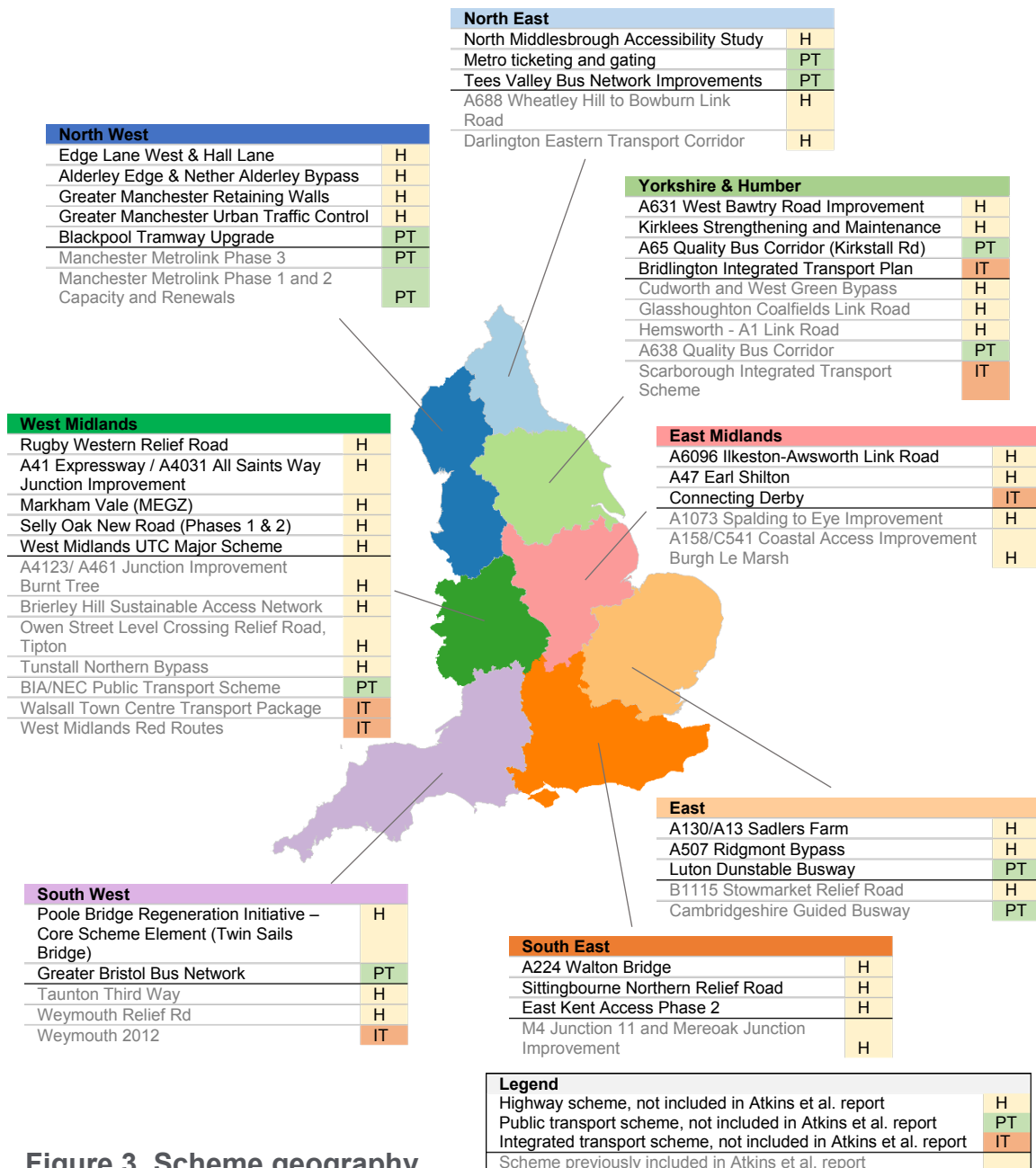


Figure 3 Scheme geography

3.2 Four schemes (8%) were located in the South East, 5 (10%), respectively, in the East, East Midlands, North East and South West, 7 (13%) in the North West, 9 (17%) in Yorkshire and Humber and 12 (23%) in the West Midlands.

Scheme costs

3.3 Across the 52 schemes, £2.6bn were invested, ranging from £6m to £745m. Of the total, DfT contributed £1.8bn (78%) and local authorities and other partners £0.8bn (22%).

3.4 Figure 4 below provides an overview of the scheme geography and cost. The figure shows that local authorities in the North West invested the largest amount of money in local infrastructure, dominated by the investment in the Manchester Metrolink extensions. Local authorities in the West Midlands invested in the largest number of schemes, developing 9 highway, 1 public transport and 2 integrated transport schemes. The least amount of money was invested in the North East, where 5 schemes account for a total of £121m.

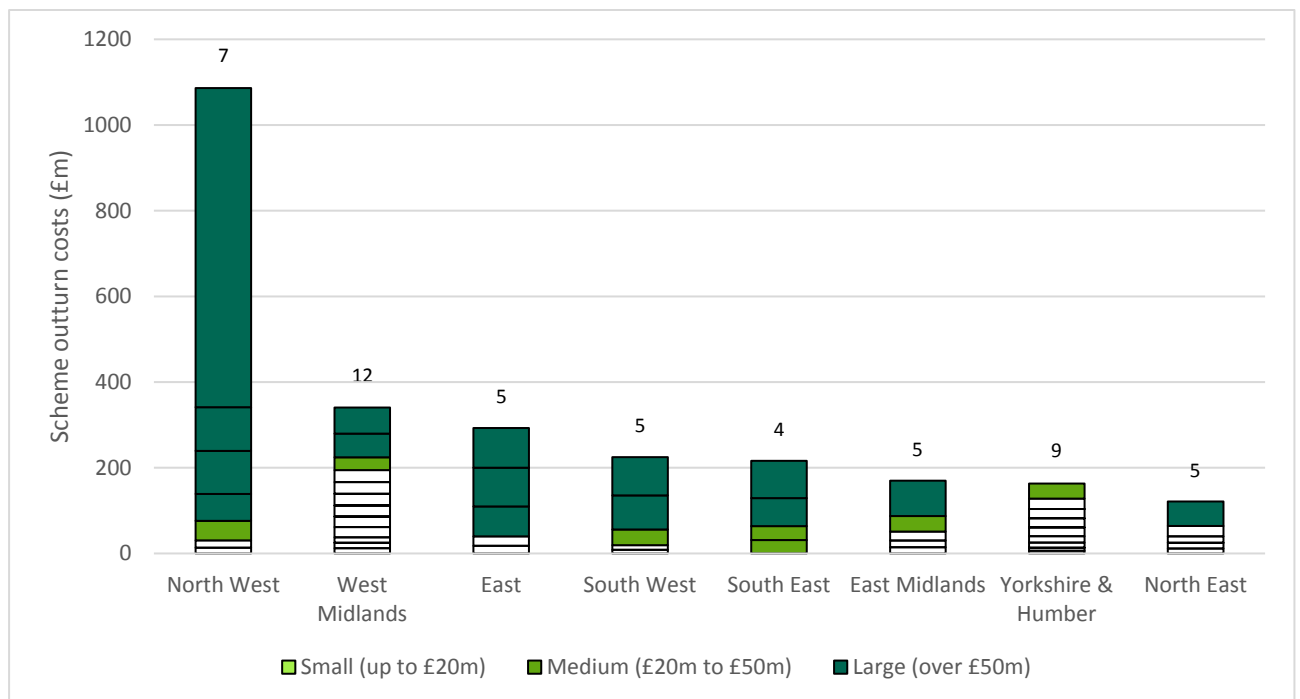


Figure 4 Scheme geography and cost

Scheme typology and value

3.5 Figure 5 presents an overview of schemes classified by outturn cost and scheme type (highway, public transport and integrated transport schemes).

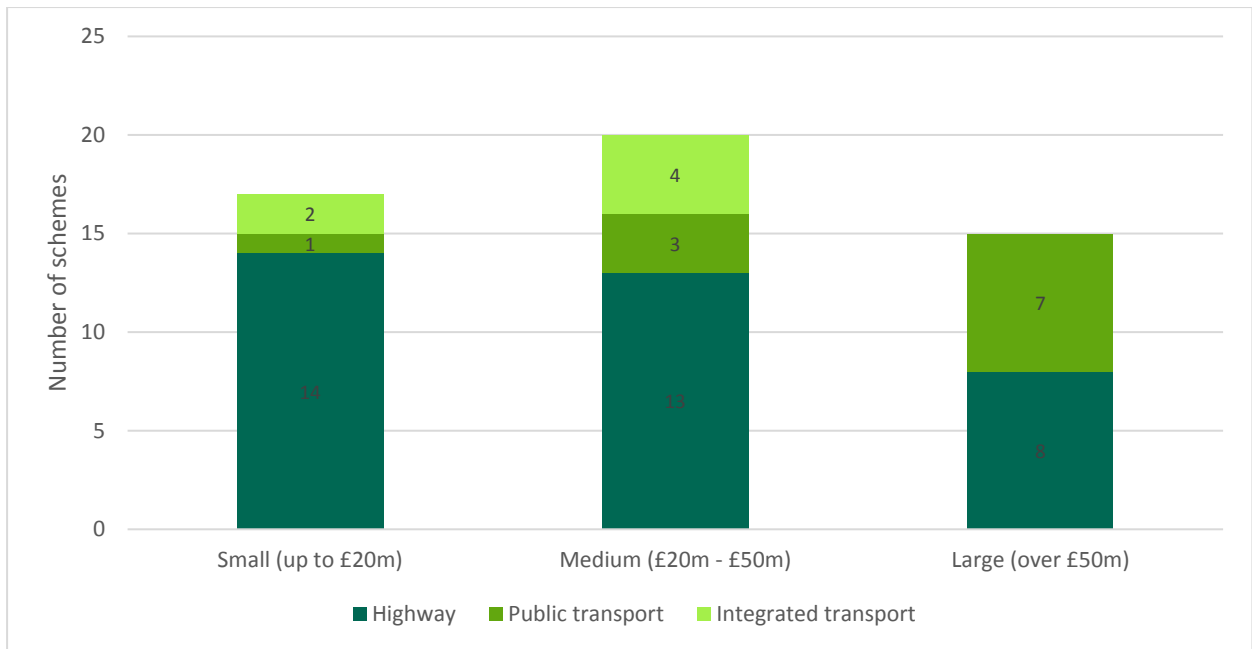


Figure 5 Summary of Scheme Type and Outturn Cost

3.6 Two thirds of the schemes (35) are highway schemes; 14 of which are classified as small, 13 as medium and 8 as large. The majority (7 out of 11) of public transport schemes are categorised as large schemes.

Scheme Chronology

3.7 Figure 6 shows that all 52 schemes opened between 2007 and 2015 with the majority completed by the end of 2012.

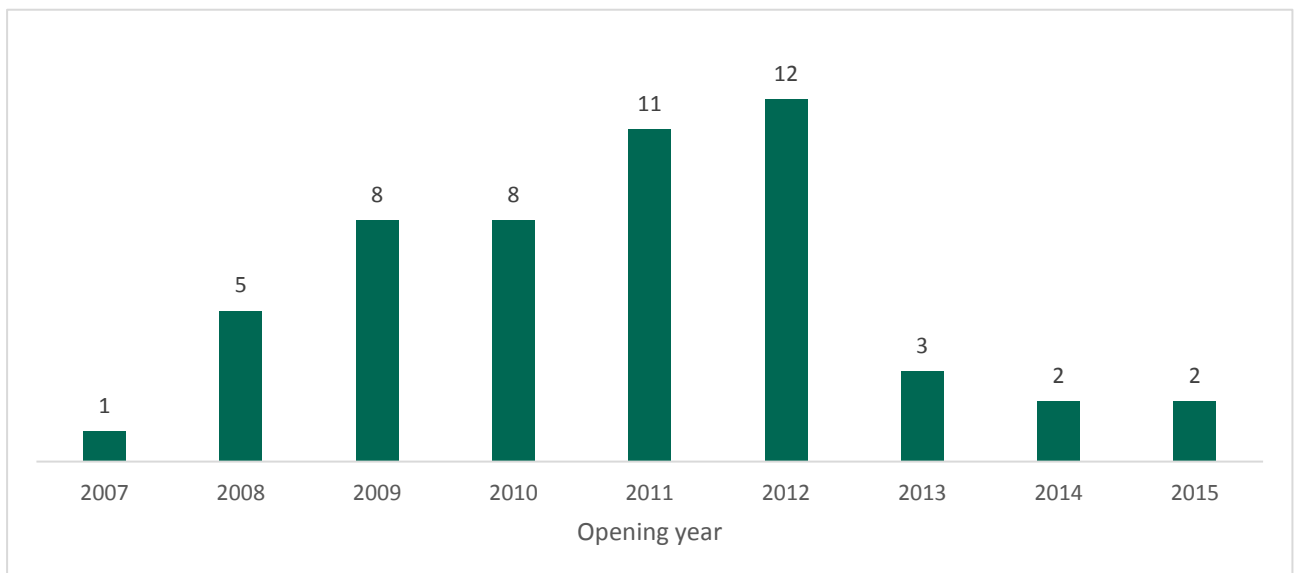


Figure 6 Number of Schemes in Sample by Year of Opening

4. Overview of method

Summary of evaluations

- 4.1 This report synthesises the findings of the 2014 meta-evaluation, which covered 23 schemes, with an analysis of 29 schemes that have since been completed or where reports have become available. The methods used for this report follow those used for the 2014 meta-evaluation. An outline of the method and any difference to the 2014 approach are described below. For full details, please refer to the 2014 report.
- 4.2 The analysis contained 3 parts:
- **A desktop review of data quality**, exploring the usefulness of the data for meta-analysis;
 - **A desktop meta-evaluation** of one-year evaluation reports; aiming to answer 12 primary research questions about aspects of schemes; and
 - **Surveys of scheme promoters**, to gain additional insights into reasons for delays and cost overruns.
- 4.3 Throughout this study, schemes are classified into three categories: **highway** schemes comprise new roads and junctions or improvements to existing roads and junctions; **public transport** schemes are investments in buses, trams and other forms of public transport; and **integrated transport** schemes aim to create better linkages between modes of transport.

Desktop review of data quality

- 4.4 In the 2014 meta-evaluation, the **desktop review of data quality** explored whether available data was of sufficient quality to conduct a *meta-analysis* (a form of analysis that combines raw data to reach an overall conclusion). It concluded that a meta-analysis was possible only for scheme cost and scheme delivery.
- 4.5 For other aspects of the schemes, such as whether they achieved their objectives, the data could not support a meta-analysis. This was usually because, in the absence of a monitoring and evaluation framework, data had not been collected or had been measured differently for different schemes. For these aspects, it was decided to conduct a broader *meta-evaluation*, in which findings are compared qualitatively between schemes.
- 4.6 We repeated the data quality review for this study and confirmed the earlier conclusion that a meta-analysis was feasible for scheme cost and delivery, but a broader meta-evaluation was appropriate for other aspects of schemes.
- 4.7 Two scheme evaluations were not available for inclusion in the meta-evaluation.⁸ For these schemes, only DfT's administrative data was taken into account. Some

⁸ Kirklees Strengthening and Maintenance Work and Selly Oak New Road, Phases 1 & 2

evaluation reports were also delivered late, using data collected after the 1-year measurement point. These time differences impact the comparability of findings. Where the meta-evaluation used 1-year post-opening evaluation reports, the scheme evaluations generally did not assess schemes' long-term impacts, particularly those on safety and the economy.

Desktop meta-evaluation

- 4.8 The aim of the desktop meta-evaluation was to answer the 12 research questions set out in Table 1 below.

Research question	Chapter
Are Local Major schemes delivered on time (if not, why not)?	4
Are Local Major schemes delivered on budget (if not, why not)?	5
How well do schemes deliver their stated outcomes?	6
What are the main benefits of Local Major schemes (does this vary by scheme type/context)?	8
How do Local Major schemes impact on traveller experience?	8
Is there evidence that Local Major Schemes impact on modal choice?	8
How do Local Major schemes impact on the environment?	8
How do Local Major schemes impact on local bus operations?	8
How well have the impacts of Local Major schemes been forecast?	8
What are the reasons for differences between forecast and outturn?	8
What lessons can be learned to improve Local Major scheme evaluation?	9
What key learning points should be communicated to future Local Major Scheme promoters?	All

Table 1 Meta-evaluation research questions

Stakeholder feedback surveys

- 4.9 In the 2014 meta-evaluation, a short questionnaire was distributed to 23 scheme promoters,⁹ of whom 20 responded (87%). The survey aimed to elicit the reasons behind cost and scheduling changes, examine unintended impacts and identify best practice and lessons learned.
- 4.10 In the more recent analysis, the same questionnaire was distributed in 2017 to 22 scheme promoters, of whom 17 responded (77%).
- 4.11 The analysis in this report synthesises data from the 2014 and the 2017 survey.

⁹ In both the 2014 meta-evaluation and the 2017 follow-up analysis, the survey was not sent to all scheme promoters. It is unclear how the scheme promoters who were sent the survey were chosen.

5. Achieving objectives

Key findings

Local major schemes generally achieved their immediate objectives.

- Highway schemes generally improved journey time, congestion and traffic flow.
- Public transport schemes generally increased passenger satisfaction. They often, although not always, improved journey time and reliability.
- Integrated transport schemes generally improved journey times and reduced traffic volumes.

Highway schemes

5.1 35 highway schemes are covered by this study (see Table 2):

- 29 'standard' highway schemes built new bypasses or link roads to provide alternative routes around towns and villages, or implemented junction improvements¹⁰;
- 2 schemes implemented urban traffic control (UTC) systems¹¹; and
- 4 schemes focused on maintaining highway assets.¹²

Highway scheme	Type	Final cost (£m)	Scheme opening
A158/C541 Coastal Access Improvement Burgh Le Marsh	Standard	14	Nov-07
A507 Ridgmont Bypass & Woburn Link	Standard	22	Jun-08
Tunstall Northern Bypass	Standard	13	Jul-08
A688 Wheatley Hill to Bowburn Link Road	Standard	11	Oct-08
Brierley Hill Sustainable Access Network	Standard	27	Oct-08
A631 West Bawtry Road Improvement	Standard	7	Dec-08
A6096 Ilkeston-Awsworth Link Road	Standard	16	Jan-09
Glasshoughton Coalfields Link Road	Standard	12	Mar-09
Darlington Eastern Transport Corridor	Standard	15	Mar-09
A47 Earl Shilton Bypass	Standard	21	Mar-09

¹⁰ Note that for one scheme, Selly Oak New Road Phases 1 & 2, no evaluation report was available at the time of analysis. It is counted in the numbers but not considered in the analysis.

¹¹ Urban traffic control schemes: Greater Manchester UTC and West Midlands UTC

¹² Maintenance schemes: A224 Walton Bridge, Markham Vale, Greater Manchester Retaining Walls and Kirklees Strengthening and Maintenance. Note that no evaluation report was available at the time of analysis for the Kirklees scheme. It is counted in the numbers but not considered in the analysis.

Highway scheme	Type	Final cost (£m)	Scheme opening
Hemsworth - A1 Link Road	Standard	24	Nov-09
North Middlesbrough Accessibility Study	Standard	14	Feb-10
Owen Street Level Crossing Relief Road, Tipton	Standard	27	Feb-10
B1115 Stowmarket Relief Road	Standard	18	Jun-10
Cudworth and West Green Bypass	Standard	22	Aug-10
Rugby Western Relief Road	Standard	55	Sep-10
Alderley Edge & Nether Alderley Bypass	Standard	63	Nov-10
M4 Junction 11 and Mere oak Junction Improvement	Standard	65	Feb-11
A1073 Spalding to Eye Improvement	Standard	82	Mar-11
Selly Oak New Road (Phases 1 & 2)*	Standard	61	Aug-11
Taunton Third Way	Standard	9	Sep-11
A4123/ A461 Junction Improvement Burnt Tree	Standard	12	Oct-11
Sittingbourne Northern Relief Road	Standard	31	Dec-11
Hall Lane	Standard	17	Jan-12
Weymouth Relief Rd	Standard	89	Jan-12
Poole Bridge Regeneration Initiative-Core Scheme Element (Twin Sails Bridge)	Standard	37	Feb-12
East Kent Access Phase 2	Standard	87	May-12
A41 Expressway/A4031 All Saints Way Junction Improvement	Standard	24	Nov-12
A130/A13 Sadlers Farm	Standard	70	Jan-13
Kirklees - Strengthening and Maintenance Work	Maintenance	15	Mar-11
Greater Manchester Retaining Walls	Maintenance	45	Mar-12
Markham Vale (MEGZ)	Maintenance	30	Jun-12
A224 Walton Bridge	Maintenance	32	Jun-14
Greater Manchester Urban Traffic Control	UTC	14	Mar-12
West Midlands UTC Major Scheme	UTC	26	Dec-14

Table 2 Highway schemes

- 5.2 **Standard highway schemes** usually aimed¹³ to improve journey times. Bypasses and relief roads aimed to reduce traffic and congestion in town and village centres, with resulting improvements in safety, air quality and accessibility. They often aimed to improve bus reliability. Junction improvement schemes, in addition, aimed to improve facilities for cyclists. In the longer term, standard schemes aimed to improve quality of life for residents and regenerate town centres.
- 5.3 77% of standard highway schemes providing relevant data report improvements in journey times.¹⁴ Differences in data definitions and coverage prevent the calculation of any average effect. Lack of data also precludes the assessment of net area-wide

¹³ Where this report discusses a scheme "aiming" to do something, this means it appeared in its stated objectives.

¹⁴ 13 schemes reported relevant data, of which 10 showed an improvement.

benefits. Other traffic related achievements, such as congestion and traffic flow, are presented in Table 3.

- 5.4 It is too early to draw conclusions about standard highway schemes' impact on safety. Whilst all schemes that reported on safety record reported improvements, it is unclear whether the changes in accident rates represent a trend.
- 5.5 **Urban traffic control** is the method of coordinating traffic signals through a central computer system. The 2 schemes funded by DfT aimed to ease congestion and improve journey times, resulting in safety and air quality improvements. Greater Manchester's scheme found absolute improvements in journey times. The West Midlands UTC scheme recorded an absolute worsening in journey times, but a positive impact relative to a pre-determined comparison site.
- 5.6 **Maintenance schemes** generally do not aim to improve journey times, but prevent a deterioration. Only one scheme evaluation provided relevant data and found no impact on journey times.¹⁵

Scheme	Key outcomes in other traffic related aspects
A41 Expressway	<ul style="list-style-type: none"> Reduction in average queue length in 2013 vs 2003
A6096 Ilkestone-Awsworth	<ul style="list-style-type: none"> Traffic flows monitored across 10 routes. Traffic flows have increased for one route only (by 21%), whilst the remainder have remained static (one route) or have lower traffic flows (3 routes experiencing a 5% or lower drop in traffic). The greatest decrease in traffic was 21%.
A631 Bawtry Road	<ul style="list-style-type: none"> Overall reductions in delays at the junction with an improvement realised on all approach arms in both the am and pm peak periods (reductions in average delay range between 15 seconds and 2 min 4 seconds), however some delays remain on the Pleasley Road. Significant queues continue to form (ranging from 75m to 1,070m), most of which clear quickly with the exception of Pleasley Road queues. Traffic flow has increased across all four arms of the Whiston Crossroad by c.10% above predicted levels.
A507 Ridgmont Bypass	<ul style="list-style-type: none"> Traffic flow decreases of up to 12% in the Woburn area. Steady traffic flow through the Ridgmont Bypass sites with some seasonal fluctuations.
A47 Earl Shilton	<ul style="list-style-type: none"> Since opening, 50% of the traffic on the old A47 has rerouted to the new bypass. Traffic on routes leading the bypass and leading to and from Hinkley have increased by approx. 10%.
North Middlesbrough Accessibility	<ul style="list-style-type: none"> The data presented (journey time and traffic flow) indicates that congestion has eased for the peak periods, however, there is a lack of detail on the data to be able to draw firm conclusions from the report.
A224 Walton Bridge	<ul style="list-style-type: none"> Average delay data shows that the average delay has decreased in all instances between 2011 and 2014 with the exception of the NB AM period. The decreases in delay are small with the greatest decrease being 4 seconds.
East Kent Access	<ul style="list-style-type: none"> Data was collected for 4 locations (2 sites, on the east and west sides). Reductions in average daily traffic flows range from 49% to 50.1%. The

¹⁵ The A224 Walton Bridge scheme.

proportion of HGVs have been fallen between 59.6% and 72% between the pre (2012) and post (2014) scheme opening periods.

- Average speed has decreased in 3 out of 4 locations between 0.7mph to 3.2mph.

Sittingbourne Northern Relief Road	<ul style="list-style-type: none"> • AADT results show a fall in the number of vehicles in 8 out of 11 monitored sites. The decreases range from 60 vehicles to 5,914 vehicles between the baseline and post-scheme opening period. • The proportion of HGVs have fallen in 6 sites and indicate the volume of HGVs have fallen in the town centre.
Alderley Edge Bypass	<ul style="list-style-type: none"> • 24-62% reduction in traffic through the old route through the village. • The percentage of HGVs travelling on the old route through the village fell from 5% to 1%.
Rugby Western Relief Road	<ul style="list-style-type: none"> • Increases in traffic demand on the RWRR range between 19% and 31% in the three year post opening period compared to the one month post opening period. • Decreases (between 5% and 70%) in traffic flow in all but one location monitored across sites in Rugby Town Centre – this demonstrates that the RWRR is attracting north-south traffic that would otherwise have travelled through the town centre, or along the local road network.
Poole Bridge	<ul style="list-style-type: none"> • The total average annual weekday flow (AAWF) of traffic on the existing and new bridges increased by 31% between 2011 and 2013.
A628 Cudworth and West Green Bypass	<ul style="list-style-type: none"> • A reduction in average annual daily traffic from 10-15,000 to 5,300
Brierley Hill SAN	<ul style="list-style-type: none"> • 34% AM peak and 43% PM peak reduction in traffic
Glasshoughton Coalfields Link Road	<ul style="list-style-type: none"> • Reduced traffic on residential roads
Hemsworth A1 Link Road	<ul style="list-style-type: none"> • 60% improved reliability
B115 Stowmarket Relief Road	<ul style="list-style-type: none"> • A reduction in AM peak hour vehicle flow from 550 to 403
Weymouth Relief Road	<ul style="list-style-type: none"> • 14% reduction in traffic on minor roads
Tunstall Northern Bypass	<ul style="list-style-type: none"> • 5-24% reduction in traffic in town centre

Table 3 Summary of traffic related outcomes

Public transport

5.7 11 public transport schemes were included in this study (see Table 4), implementing improvements to infrastructure, changes in ticketing and extensions to existing bus and tram networks.

Public transport scheme	Final cost (£m)	Scheme opening
A638 Quality Bus Corridor	20	Apr-09
Manchester Metrolink Phase 1 and 2 Capacity and Renewals	102	Jan-10

BIA/NEC Public Transport Scheme	13	Mar-11
Cambridgeshire Guided Busway	93	Aug-11
Greater Bristol Bus Network	79	Mar-12
Blackpool Tramway Upgrade	100	Apr-12
A65 Quality Bus Corridor (Kirkstall Rd)	21	Sep-12
Manchester Metrolink – merged	745	Jul-13
Luton Dunstable Busway	91	Sep-13
Metro Ticketing and Gating	24	Apr-15
Tees Valley Bus Network Improvements	57	Sep-15

Table 4 Public transport schemes

- 5.8 Most schemes aimed to **improve journey times and reliability, service quality, passenger satisfaction and accessibility**.^{16 17} The schemes often had the longer-term goals of increasing employment and improving integration and social exclusion.
- 5.9 **Journey time and reliability improved in some schemes**, although not consistently (see Table 5). However, **schemes often achieved improvements in passenger satisfaction**.
- 5.10 There is little evidence that these schemes achieved improvements to accessibility, although the Manchester Metrolink evaluation noted that residents reported better access to employment, healthcare and further education. There was also mixed evidence around increases in patronage and reduction in congestion.

Objective	Scheme achievements
Journey time and reliability	Luton Dunstable Busway: All monitored routes showed a fall in journey times, with the decrease ranging from 37.5% to 60%.
	Greater Bristol Bus Network: reduced journey time in the AM peak (on seven out of ten corridors) and, to a lesser extent, in the PM peak (on five out of ten corridors in May, two in October). 83.4% of buses starting on time, compared to target of 74.5%.
	Tees Valley: Only 64-82% of non-frequent bus services run on time, against a target of 95%. Waiting time targets were achieved for some, but not all, authorities.
	Blackpool Tramway: Journey times longer than forecast (in summer, 59 rather than 56 minutes; in winter, 55 rather than 52 minutes).
	A638 Quality Bus Corridor: Improved journey time of between 22-28%, depending on time and direction of travel. Improved journey time reliability in the AM peak, but worsening in the PM peak.
	A65 Quality Bus Corridor: Mixed results with some periods reporting a 25% decrease and other periods a 26% increase in traffic flow between 2009 and 2012.

¹⁶ The North East Metro Ticketing and Gating (NEXUS) scheme improved payment systems and did not target journey times. Instead, it aimed to improve integration between local authorities and reduce administration costs.

¹⁷ "Accessibility" has various meanings (see the discussion in [WebTAG unit A4.1: Social impact appraisal](#)), but is conventionally used to refer to whether people can travel to access the services they require.

Objective	Scheme achievements
Service quality and satisfaction	<p>Luton Dunstable busway: 90% felt journey times were excellent/good, while 70% felt service frequency, passenger information and stop quality were excellent/good.</p> <p>Greater Bristol Bus Network: Customer satisfaction levels in 2011/12 averaged 73%, in response to questions about overall quality, punctuality and other factors.</p> <p>Tees Valley Bus Network: Most passengers questioned thought that bus services had improved.</p> <p>A65 Quality Bus Corridor: in 2013, 55% of passengers rated the service as "good" or "very good", an improvement on a previous survey in 2000.</p> <p>Blackpool Tramway Upgrade: Passenger ratings improved for comfort (7.9 to 9.1) and ease of boarding (7.6 to 9.2), but showed little increase for frequency and reliability (both scores increased by 0.1).</p> <p>Cambridgeshire and Metrolink: Improvements in passenger satisfaction results.</p> <p>A638: 88% of passengers satisfied with quality of service (no baseline or target was reported).</p>
Patronage increase	<p>Birmingham International to NEC: Patronage fell from 300.2m in 2010/11 to 276.3m in 2015/16. The aim was for patronage to increase by 5% over this period.</p> <p>Cambridgeshire Guided Busway: Was on track, at the time of the 2014 evaluation, to achieve patronage target.</p>
Congestion reduction	<p>Cambridgeshire Guided Busway: Reported reduced congestion on A14 by 8%, with traffic flow reduced by 2%, although it is unclear whether the scheme was responsible for this.</p>

Table 5 Summary of public transport scheme achievements against objectives¹⁸

Integrated Transport Schemes

5.11 Six Integrated Transport Schemes were included in this study (see Table 6). These generally aimed to reduce traffic congestion, improve network resilience and make transport other than by car more attractive. Other common objectives were improving bus punctuality and journey time reliability. The long-term aims were to improve the environment, reduce accidents and improve the accessibility of the town centre.

Integrated Transport scheme	Final cost (£m)	Scheme opening
Walsall Town Centre Transport Package	25	May-09
Scarborough Integrated Transport Scheme	35	Jun-09
Bridlington Integrated Transport Plan	6	Jul-10
Connecting Derby	36	May-11

¹⁸ The tables in this section give an illustrative selection, rather than a complete list, of the evidence available.

Integrated Transport scheme	Final cost (£m)	Scheme opening
Weymouth 2012	11	Jul-11
West Midlands Red Routes	28	Dec-12

Table 6 Integrated transport schemes

5.12 As Table 7 illustrates, these schemes often **showed improvements in journey times and traffic volumes**. One scheme showed improvements in safety. There was little evidence of economic and regeneration impacts, nor evidence of improvements to the environment, although we would not usually expect to see improvements in these areas after one year.

Objective	Scheme achievements
Journey time	<p><i>Bridlington ITP</i>: Journey time, as measured across three roads, generally improved over four years (by up to 150s).</p> <p><i>Connecting Derby</i>: The new link road provides a journey time benefit of 5 minutes. The Inner Ring Road has also seen improved journey times, with reductions of 1-2 minutes in the PM peak.</p> <p><i>West Midlands Red Routes</i>: Reduced journey times on all routes on certain days and times.</p>
Traffic reduction	<p><i>Connecting Derby</i>: Northwestern sections of the inner ring road showed 11-42% less traffic than predicted, although the Southeastern sections showed more traffic than predicted.</p> <p><i>Scarborough</i>: Traffic reduced by 15-76% on town centre routes.</p> <p><i>Weymouth Traffic Package</i>: AADT reduced by over 5000 on two key routes into the town.</p>
Bus patronage	<p><i>Scarborough</i>: Increase in park-and-ride patronage.</p> <p>West Midlands Red Routes: Increased patronage on some services on all routes.</p>
Safety	<p><i>West Midlands Red Routes</i>: Reductions in accidents of 21-78% and in casualties of 18-74% (depending on routes), on those routes where monitoring was possible.</p>

Table 7 Summary of ITS achievements against objectives

Using these findings

- 5.13 Not all scheme evaluations assessed scheme outcomes against the scheme's objectives, taking account of predicted impacts and baseline measures. Scheme promoters should **ensure that evaluations focus on the scheme's key objectives**, and compare actual outcomes with a baseline and the predicted change. Where proportionate, this may include a process evaluation to assess reasons for not, or only partially, realising the expected benefits.
- 5.14 It is notable that **similar objectives were often measured in different ways**, making comparison difficult. For example, some schemes reported journey time as an absolute value (e.g. 59 minutes), while others compared it against a forecast figure or against figures from previous years. Similarly, the reliability of bus services was sometimes measured in terms of waiting times and sometimes in terms of the proportion of buses that ran on time. In future evaluations, the Department will attempt to ensure that similar objectives are measured in a consistent way.

6. Delivering on time

Key findings

A third of schemes (33%) were delivered ahead of schedule or on time. On average, scheme construction lasted 6 months longer than forecast. This delay was similar for all types of scheme.

Scheme promoters should bear in mind common reasons for delays, take these into account in planning, as well as avoid and mitigate where possible.

Delivering on time

- 6.1 Across the 52 schemes, construction took on average 2 years and 7 months. The quickest scheme construction lasted 14 months (A158/C541 Coastal Access Improvement Burgh Le Marsh) and the longest over 6 years (West Midlands UTC Major Scheme).
- 6.2 In one third of schemes (33%) construction completed ahead of, or on, time. On average, **schemes opened 6 months later than was predicted** when the scheme was fully approved.¹⁹ This figure varies between schemes: as Figure 7 shows, for 17 schemes construction took no longer than predicted, for 27 schemes it lasted up to one year longer and in 7 cases construction overran by more than a year.

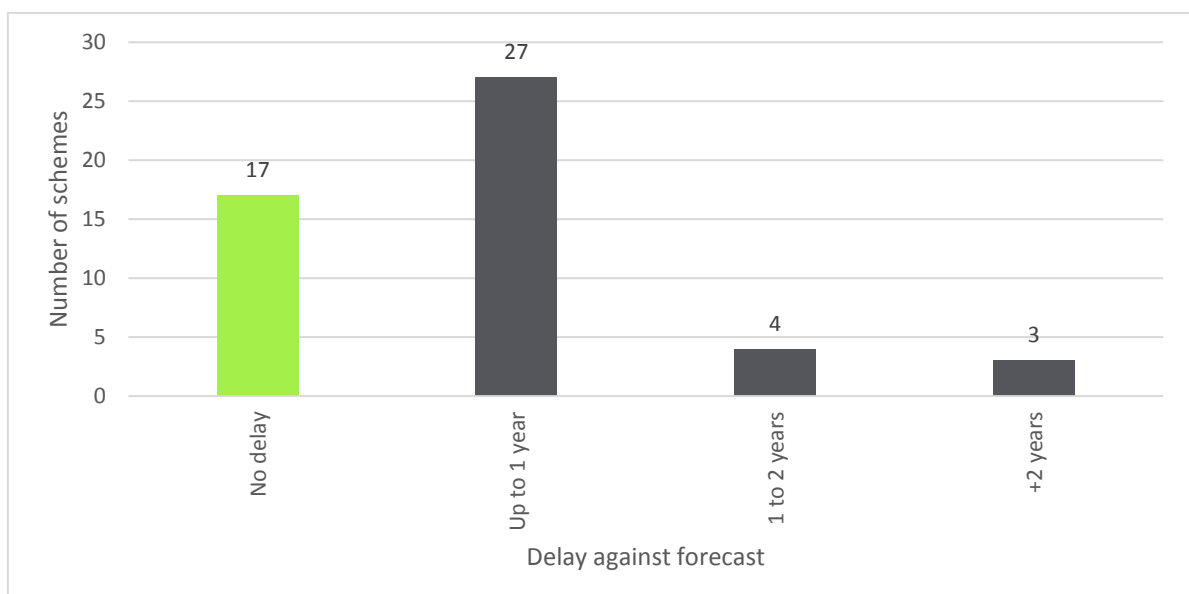
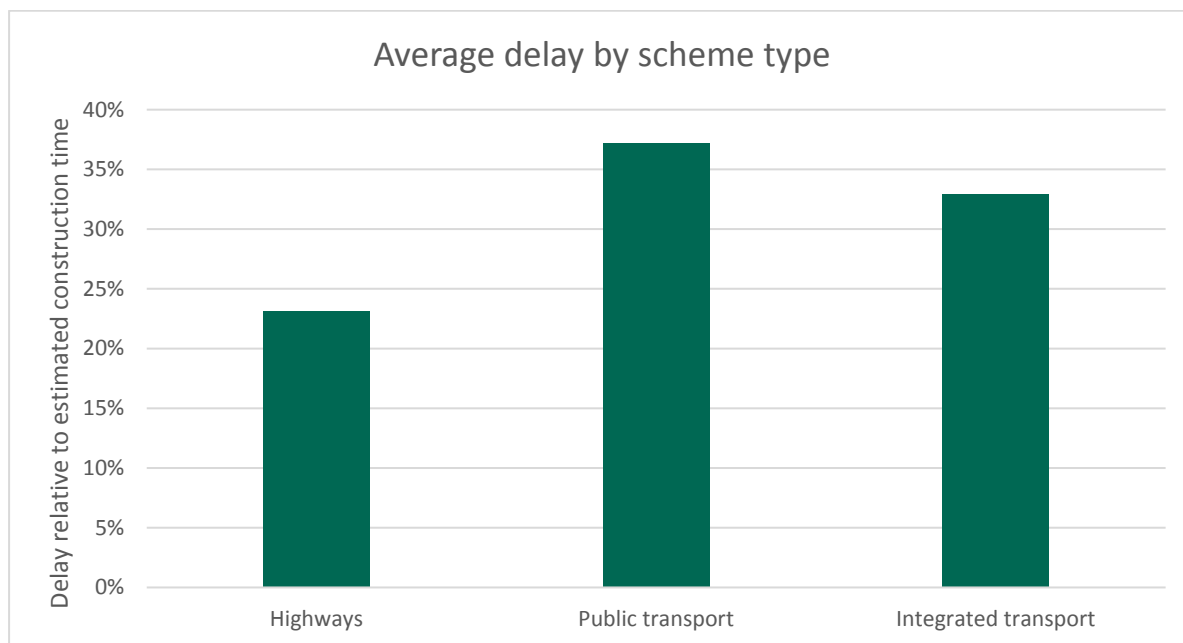


Figure 7 Distribution of changes in construction time

¹⁹ That is, when the business case for the scheme is given final approval by the Department. This stage is known as "full approval".

- 6.3 **Delays are similar for schemes of different sizes.** On average, small schemes (costing less than £20m) are delayed by 28% (4 months), medium schemes (between £20m and £50m) by 29% (6 months) and large schemes (over £50m) by 24% (6 months).
- 6.4 Proportionate to the estimated construction time, **delays are greater for public transport schemes** (37%) and smallest for highway schemes (23%), as set out in Figure 8.



6.5

Figure 8 Changes in completion date by scheme type

- 6.6 **Common reasons for delay were unforeseen environmental, ecological or weather issues and utility works**, according to survey responses from scheme promoters (see Table 8). Interactions with third parties and land procurement and planning issues were also common. In only one scheme did scheme promoters believe the delays were due to DfT.

Summary of Causes	Number of Schemes
Unforeseen environmental/ecological/weather issues and utility works	13
Interaction with third parties	10
Land procurement/planning application approvals	8
Funding problems	3
Design development/changes to scheme design	2
Delays due to DfT approval process	1

Table 8 Main causes of programme slippage, as identified by scheme promoters in questionnaire responses

- 6.7 When asked how these issues could be managed or mitigated, scheme promoters suggested:
- Minimising objections to the scheme by undertaking robust public consultation and taking legal and planning advice.

- Better vetting of sub-contractors to ensure financial stability and minimise the need to find alternative contractors mid-project.
- Involving contractors at an early stage to establish a robust programme prior to construction, which identifies key risks and allowances.
- Using technology improvements to identify problems in the ground before work commences.
- Better programming of construction works, providing "float" in the programme for extended statutory undertakers work and to avoid and mitigate unsuitable weather conditions. This could also have the impact of incorporating additional works on the programme into consideration.
- Using alternative contracts, with closer scrutiny of risk allocation to the client.
- Fully understanding the requirements of Network Rail at pre-tender stage and including in contract documents.
- Partnership arrangement between design and operational staff and the private sector supply chain partners.

6.8 Some scheme promoters noted that, where issues have arisen, they were successfully resolved through frequent meetings with contractors, negotiation and agreement of deadlines.

Using these findings

6.9 When planning transport schemes, **scheme promoters** should bear in mind that timescales commonly slip and plan accordingly. They should be aware of common reasons for delay, as detailed above, and how these might be avoided or mitigated.

6.10 **The Department** should also bear in mind that planned schemes often slip by a number of months. This has implications for appraisal, since the benefits of a scheme may change if the timescale changes,²⁰ and evaluation, since it will mean that measurements are taken at a different time than anticipated.

²⁰ This is largely because benefits at a later date are "discounted". See *The Green Book: Central Government Guidance on Appraisal and Evaluation* (2018), HM Treasury.

7. Delivering to budget

Key findings

Schemes cost on average about 9% more than predicted. The most common reasons for this were increased costs of contractors and statutory undertakers.

Scheme promoters should bear the risk of overspending in mind. This extra cost is borne by scheme promoters and should be budgeted for appropriately.

Delivering to budget

- 7.1 When schemes were approved, the total cost of investment was estimated to be £2.3bn, of which the Department expected to contribute £1.8bn (77%). As a result of cost changes, the final cost of investment across the 52 schemes rose to 2.6bn, to which the Department contributed an additional £30m (reducing the overall contribution to 70% of investments).
- 7.2 On average²¹, **schemes cost 9% more than forecast** when the scheme was fully approved. This equates to an average overspend of £1.6m.
- 7.3 Figure 9 shows the deviation of actual scheme costs from the final forecast, by scheme size. Around one in three schemes (27%) cost the same as forecast and 15% cost less than forecast. Only three schemes (Tunstall Northern Bypass, North East Metro Ticketing and Gating and Rugby Western Relief Road) overran by 50% or more.²²
- 7.4 The proportionate overspend does not seem to be related to scheme size. Small schemes (<£20m) overran by an average of 8% (£0.5m), medium schemes (between £20m and £50m) by 10% (£1.9m) and large schemes (>£50m) by 7% (£2.6m).²³

²¹ This and the following figures quoted in this chapter exclude the Manchester Metrolink extensions scheme to Ashton & East Didsbury and Rochdale–Oldham–Chorlton. That scheme makes up nearly a quarter of total investment over the period, £745m (including a cost overrun of £201m or 37%), and 71% of the total overspend. Including the scheme in the calculations results an unrepresentative view of the other 51 schemes. The average overspend including the Metrolink extensions is £5.4m (9%).

²² According to its evaluation report, Tunstall Northern Bypass overran because of issues and miscommunications with external stakeholders. The other two schemes did not give reasons for the increase in budget.

²³ Including the Metrolink extension scheme would increase the average cost overrun of large schemes to 9% (£15.8m).

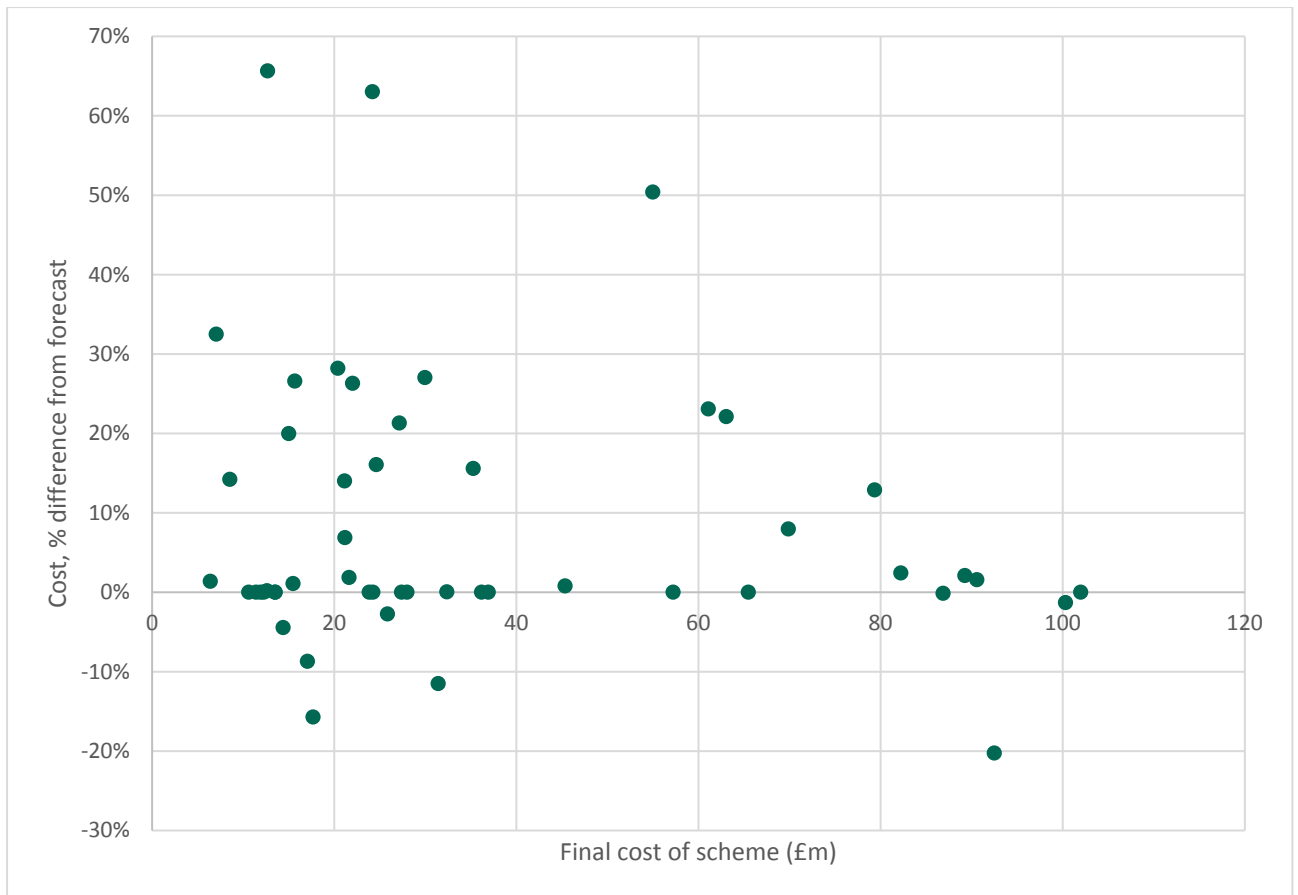


Figure 9 Difference from forecast cost by outturn cost of scheme

7.5 As Figure 10 shows, highways and public transport schemes overrun by similar amounts (9%)²⁴. Due to the small number of schemes (5), it is not possible to say whether the smaller cost increase of integrated transport schemes (6%) is representative of such schemes.

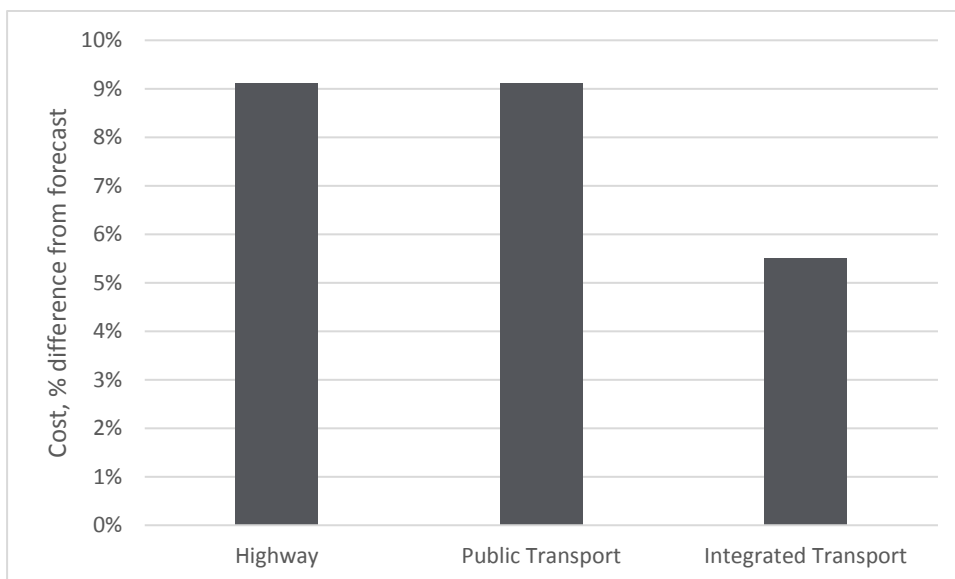


Figure 10 Percentage increase in costs from forecast to outturn, by scheme type

²⁴ Including the Manchester Metrolink scheme would increase the public transport overrun to 12%.

7.6 Schemes that were completed late were somewhat more likely to overspend, although this relationship is not strong (see Figure 11).

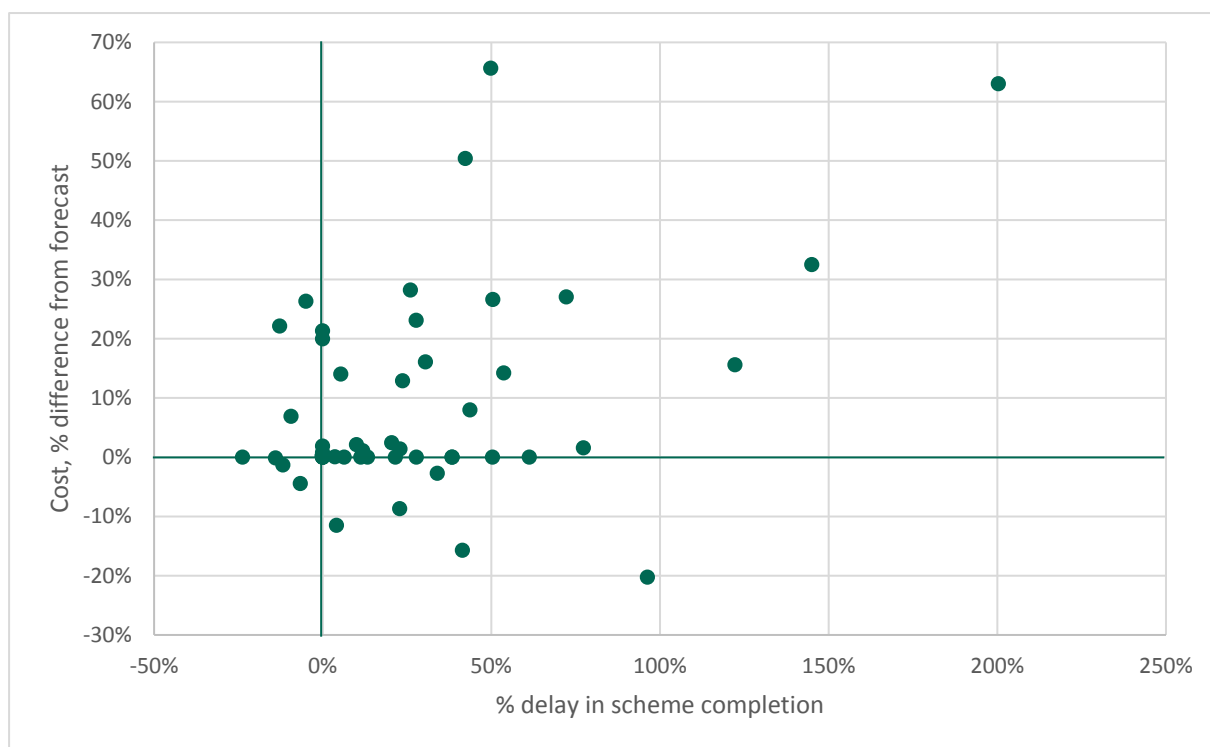


Figure 11 Overspend against delay in scheme completion

7.7 For schemes that cost more than forecast, the most common reason was given as **third-party costs**. That is, increased costs of contractors and statutory undertakers such as utilities and telecoms. As Table 9 shows, other reasons included poor weather conditions, unforeseen ground conditions, ecology and land issues and issues over land purchases or third party disputes.

Reasons for cost change	Number of Schemes
Third party costs (contractors and statutory undertakers)	10
Poor weather conditions and unforeseen ground conditions	4
Disputes and issues over land purchases or third party disputes	3
Ecology and land issues	3
The need to comply with Network Rail (NR) requirements and additional NR possessions and works.	3
Developments/changes in scheme design	1
Late award	1

Table 9 Reasons for cost changes between full approval and actual cost, as given in stakeholder questionnaire

7.8 When asked how cost changes could be avoided, scheme promoters suggested:

- Greater allowance for inflation in estimates;

- Greater time risk allowance;
- Better investigation and identification of statutory undertaker issues at an early stage; and
- The use of a full-time cost consultant.

Using these findings

- 7.9 When planning transport schemes, **scheme promoters** should bear in mind that over half of transport schemes cost more than forecast, with the average overspend being 9%. This overspend is now borne by the scheme promoter, rather than the Department. Scheme promoters should be aware of common reasons for this overspend, as detailed above, and how these might be avoided or mitigated.
- 7.10 **The Department** will use these findings in its planning and especially in considering how to improve its appraisal processes.

8. Achieving value for money

Key findings

Few schemes calculated a revised benefit-cost ratio (BCR) in their one-year evaluation report, making it difficult to assess the value for money of schemes.

When schemes did calculate a revised BCR, this was lower than the forecast BCR, but still represented high or very high value for money.

Transport scheme evaluations should include a recalculated BCR where this is proportionate.

The outturn benefit-cost ratio

- 8.1 As part of their business case, schemes calculate an estimated benefit-cost ratio (BCR). One way of assessing the value for money actually delivered by a scheme is to recalculate the BCR using measures from the evaluation instead of forecasts.
- 8.2 In practice, **only a minority of schemes calculated a revised BCR**. Of those that did so, two did not use a calculation that was considered sufficiently robust. The five remaining schemes are listed in Table 10.

Scheme	BCR calculated when scheme was proposed	BCR calculated from evaluation
Taunton Third Way	19.1	15
A13 Sadlers Farm	"Very high, nearly 10"	9.7 (for wider area, as comparable to forecast BR)
Connecting Derby	6.88	2.1 (based on peak hour journey time) 3.9 (based on predicted journey time benefits)
Walsall Town Centre Transport Package	6.85	3.78
A628 Cudworth Bypass	3.13	3.05

Table 10 Comparison of predicted and observed BCR

- 8.3 As the table shows, **all 5 schemes delivered high or very high value for money**. In 3 of the 5 schemes (Taunton Third Way, A13 Sadlers Farm, A628 Cudworth Bypass), the evaluation BCR is broadly in line with the original estimate, and considerably lower in 2. However, given the small number of schemes considered, it is not possible to draw conclusions about other schemes.

- 8.4 The absence of consistent calculated outturn BCRs has limited the possibility of assessing the quality of appraisal BCRs and the actual value for money. DfT's local major evaluation framework (published in 2012) now requires scheme promoters to explicitly consider the value for money of their schemes, giving an outturn BCR where that is proportionate.

9. Other findings on Local Major schemes

Key findings

For schemes that collected evidence on environmental benefits, evidence suggests improved air quality, reduced NO₂ levels and reduced carbon emissions. Few schemes assessed passenger experience or people's choice of transport.

Overview

9.1 This section considers research questions listed in Table 1 that have not been explicitly considered so far. Because these research questions overlap, there is considerable overlap between the findings below and those given in previous chapters.

What are the main benefits of Local Major schemes?

- 9.2 The main benefits of Local Major schemes are closely aligned to their objectives. Hence, as described in Chapter 6, the most common benefits of schemes are:
- For public transport schemes, improved passenger satisfaction, journey times and reliability.
 - For integrated transport packages, improved journey times and traffic volumes.
 - For highways, improved journey time, congestion and traffic flow.

How do Local Major schemes affect passenger experience?

- 9.3 As outlined in Chapter 6, public transport schemes often reported increased passenger satisfaction. Additionally, all types of schemes reported reduced journey time, which are assumed to give a better passenger experience.²⁵
- 9.4 Two public transport schemes²⁶ looked specifically at equality and passenger comfort. Both found improvements in these areas.
- 9.5 Some highway schemes²⁷ assessed traveller experience through stakeholder consultation and feedback, finding positive perceptions among those consulted. There was similar qualitative evidence of improvements²⁸ to connectivity and accessibility.

²⁵ The Department's guidance for appraising costs and benefits of transport schemes, WebTAG, assumes that reduced journey time represents an improved passenger experience.

²⁶ Weymouth Transport Package and Cambridgeshire Guided Busway.

²⁷ For example, the M4 Junction 11 improvements and West Midlands Red Routes Package One.

²⁸ For example, from Burnt Three, Owen Street, Burgh le Marsh and Manchester Metrolink.

Do Local Major schemes affect people's choice of transport?

- 9.6 Only eight schemes explicitly aimed to change people's choice of transport (i.e. cause a "modal shift"). Unsurprisingly, then, **few schemes gathered evidence on whether people had changed their mode of transport.**
- 9.7 As discussed in Chapter 6, various schemes showed increases in bus patronage. Some individual schemes, such as the Greater Bristol Bus Network, showed increases in levels of cycling. This might be taken as indicative of modal shift.
- 9.8 The main direct evidence of modal shift comes from passenger questionnaires, showing varying degrees of modal shift. For example, a survey for the Luton Dunstable Busway showed that 10% more people travelled to stations by bus and that fewer people walked and drove. Similarly, in a survey conducted after Manchester Metrolink was constructed, 61% of passengers said they would otherwise have used the bus. In a survey for the Cambridge guided busway, 75% said that had always used the bus, but the vast majority of the remainder said they had switched from traveller by car, either as driver or passenger.

How do Local Major schemes affect the environment?

- 9.9 **There was some evidence of improved air quality**, from schemes that collected evidence in this area. For the few schemes that collected evidence on greenhouse gas emissions and noise, there was only mixed evidence of improvements.
- 9.10 Where schemes collected evidence on air quality, this usually concerned NO₂ emissions. As Table 11 shows, **NO₂ levels appear to have improved for most schemes**, although this cannot definitely be fully attributed to the scheme. Note that the national air quality objective (annual mean) is 40µg/m³.

Scheme (where multiple results are given, these represent multiple measurement sites)	Before opening (µg/m³)	After opening [µg/m³]
Poole Bridge	25.61 33.69 18.62	23.12 23.96 14.76
Bridlington ITP	23-25	21-27
GBBN	44	43
Weymouth Transport Package	49.6 35.5	38.9 (-10.7) 26.5 (-9.0)
Owen Street	28.6 23.0	24.67 (-3.9) 20.48 (-2.5)
Taunton Third Way	26	29 (+3)
Darlington Eastern Transport Corridor	26.6	23 (-3.6)

Table 11 Comparison of NO₂ levels, before and after implementation

- 9.11 A small number of schemes reported **improvements in CO₂ emissions, which were modelled using reductions in traffic flows and improved journey times.**

- 9.12 **Evidence on noise levels was inconclusive.** Six schemes presented evidence on noise levels, which was either modelled directly or modelled using changes in traffic levels. Many schemes showed an increase in noise for some areas and a reduction in noise for others.
- 9.13 Schemes rarely presented evidences on other potential environmental effects, such as biodiversity, landscape and water. When these effects were considered, it was normally in terms of mitigation measures: for example, preserving landscapes by planting hedgerows or water protection through attenuation ponds and drainage facilities.

How do Local Major schemes affect local economies?

- 9.14 There are known challenges in collecting robust evidence on how transport schemes affect the local economy. Even where the local economy is influenced, it is unlikely this will be detected a year after the scheme's opening (i.e. when the evaluations considered in this report were conducted). Even where a change is detected, it usually cannot be attributed to the scheme.
- 9.15 Table 12 outlines some examples of **qualitative evidence of impact on local economies**. While there is some limited evidence of improvements, this is often relatively weak (e.g. statements that the scheme facilitated or contributed to development). There are also examples that appear to show negative impacts.

Scheme	Evidence presented of improvements
A6096 Ilkeston-Awsorth	New retail park has opened. 2000 homes to be built at Stanton Regeneration Site.
Poole Bridge	Estimated 4631 full-time equivalent jobs created and 2000 new homes to be built.
A41 Expressway	New high-quality housing stock and construction of office developments. New developments include New Square, Tesco and retail and leisure areas.
Luton Dunstable Busway	House prices have risen 17-27% along the busway, as compared to an area average of 15%. Employment is also reported to have increased.
Markham Vale	938 jobs created on Markham Vale site. 49% of land used for development.
East Kent Access Phase 2	Thanet's GVA increased from £12,880 to £15,098 per capita, although remains lower than the Kent average. In 2011/12, 3628m ² floor space developed, against a target of 19750m ² .
Alderley Edge bypass	10% more business units in Alderley Edge, which is higher than the average increase in Cheshire East towns.
Sittingbourne Northern Relief Road	Net gain of 12958m ² of employment floor space available
Hall Lane and Edge Lane West	Mixed responses from business and residents on whether scheme had improved housing provision, generated new employment opportunities or regenerated the city.

Scheme	Evidence presented of improvements
Weymouth Relief Road ²⁹	Employment fell between 2008-2016, although it was forecast to increase. Wages increased since implementation. Tourism numbers increased post-implementation, although average and total spend reduced.
Owen Street	Reduced employment and number of businesses between 2006 and 2011.
Taunton Third Way	Reduction in businesses and employment in Taunton and Somerset.
Brierley Hill Sustainable Access Network	Over £40m development facilitated by the scheme. Increase of 200 jobs between 2009 and 2010.
Hemsworth-A1 link	Scheme promoted states that 1200 homes and >29,000m ² of development contributed to by the scheme.

Table 12 Summary of evidence on improvements to local economies

How do Local Major schemes affect local bus operations?

- 9.16 Bus schemes often showed evidence of increased public satisfaction and reduced journey time, as outlined in Chapter 6. Some schemes showed an increased number of passengers.
- 9.17 For local transport schemes that were not specifically bus schemes, **there was some evidence of improvements to bus services**. For example, Weymouth Transport Package, West Midlands Red Routes and the A41 Expressway reported improved journey times and reliability.
- 9.18 There was little evidence of adverse impact on bus services. Manchester Metrolink found, as forecast, that there had been little impact on bus operations, although A631 West Bawtry reported an unforeseen increase in bus journey times, because of traffic queuing at certain junctions.

How well have impacts of Local Major schemes been forecast and what are the reasons for any inaccuracies?

- 9.19 Few schemes compared forecast with actual results. Where they did, the results were not always comparable, because the scheme opened later than predicted.
- 9.20 For those schemes that made the comparison, **actual traffic flows were often less than forecast**. This may have been due to the economic recession. Table 13 gives data for selected schemes.

Scheme	Difference between forecast and actual traffic demand
A13 Sadlers Farm	Traffic was forecast to increase by 13%. Traffic in fact fell across Essex by 1%.
A6096 Ilkestone	Traffic was forecast to decrease by 59% through Station Road, but actually decreased by 20%.

²⁹ All schemes in this table from Weymouth Relief Road downwards were implemented earlier and took place in more challenging economic circumstances.

Table 13 Summary of evidence on forecast and actual traffic flows

- 9.21 For the few schemes that made the comparison, journey times were sometimes longer and sometimes shorter than forecast. For example, Greater Bristol Bus Network aimed to restrict traffic growth to 13% and achieved this target on most, but not all, of the routes measured.
- 9.22 There is no conclusive data on accident rates, since these cannot be accurately measured after a one-year period.

10. Lessons learned

Lessons for scheme promoters

- 10.1 Scheme delivery timescales can slip. Scheme promoters should take account of the common reasons for delays and incorporate these into their risk management strategies and forecasts.
- 10.2 Schemes often cost more than anticipated. Scheme promoters should take account of the common reasons for overspend and incorporate these into their risk management strategies and forecasts.
- 10.3 Evaluations do not always assess the achievements of scheme objectives, and in particular do not always compare outcomes with baseline measures and forecast outcomes. Scheme promoters should ensure that evaluations are focused on the scheme's key objectives, and compare outcomes with both baseline measures and the changes expected at the scheme planning stage.

Lessons for the Department for Transport

- 10.4 Due to the data limitations discussed, the lessons drawn for the Department mainly address evaluation design and approaches. The Department has already addressed many of these lessons through its 2012 Evaluation Guidance.³⁰
- 10.5 DfT's appraisal and evaluation planning should take into consideration the risk of slippage. Evaluation plans must be drafted relative to actual rather than anticipated scheme completion.
- 10.6 DfT's appraisal should take into consideration the risk of overspend. DfT includes an optimism bias assumption in its appraisal. This is currently being reviewed in the light of newer evidence. In addition, the financial contribution to local major schemes is now capped, so that the risks from overspend are carried by local authorities.
- 10.7 To improve the quantitative evidence on achieved value for money, scheme evaluations should, where appropriate, calculate an evaluation benefit-cost ratio. Following the 2012 guidance, DfT requests evaluation benefit-cost ratios to be calculated as part of Fuller evaluations. Whenever proportionate, DfT also requests such calculations in other scheme evaluations.
- 10.8 Many aspects of transport schemes (e.g. passenger satisfaction) were measured in different ways, which made comparisons difficult. Where possible, aspects of transport schemes should use comparable measurement approaches. DfT is developing guidance to support the Evaluation Framework, which will identify preferred approaches to measurement.

³⁰ Department for Transport (2012) Local authority major schemes: monitoring and evaluation framework.

Annex A: Short scheme descriptions

A.1 Table 14 sets out a short description of each scheme, including the scheme promoter and the total final cost. Fuller descriptions, including scheme objectives and data quality review, is included in Appendix B, published separately.

Scheme name	Scheme promoter	Scheme total cost and description
North East		
North Middlesbrough Accessibility Study	Middlesbrough Co.	£14m – new link road plus widening of the existing A66 and the carriageway at Newport Roundabout
Metro ticketing and gating	Nexus	£24m – replacement of 225 existing ticket machines at 60 stations and installation of gating at 13 key stations on the Tyne & Wear Metro
Tees Valley Bus Network Improvements	Joint TV Co.s	£57m – upgrading of bus network across Tees Valley
A688 Wheatley Hill to Bowburn Link Road	Durham County Council	£11m – new road linking East Durham and the A1(M)
Darlington Eastern Transport Corridor	Darlington Co	£15m – 3km single carriageway road linking the A66 with the B6297 on its approaches to Darlington Town Centre.
North West		
Edge Lane West & Hall Lane	Liverpool City Co.	£17m – two schemes designed to improve the main road link from Liverpool city centre to the M62 including widening the existing single carriageway to two-lane dual carriageway with a central reservation plus a new east-west route to the city centre.
Alderley Edge & Nether Alderley Bypass	Cheshire East Council	£63m – 5km (3 mile) single carriageway bypass of the villages of Alderley Edge and Nether Alderley.
Greater Manchester Retaining Walls	joint GM Authorities	£45m – repair and reconstruction of highway retaining walls
Greater Manchester Urban Traffic Control	joint GM Authorities	£14m – implementation of real time urban traffic management control systems in the Greater Manchester area plus replacement of existing obsolete traffic control equipment.
Blackpool Tramway Upgrade	Blackpool Co.	£100m – upgrade of Blackpool tram system including 16 new trams, new tram stops, replacement of 8km of track and a new depot.
Manchester Metrolink Phase 3	TfGM	£745m – extensions of Manchester Metrolink to Rochdale, Oldham and Chorlton.
Manchester Metrolink Phase 1 and 2 Capacity and Renewals	TfGM	£102m – infrastructure replacement (track, structures and overhead lines), the purchase of eight new vehicles and modifications to the depot.

Scheme name	Scheme promoter	Scheme total cost and description
Yorkshire & Humber		
A631 West Bawtry Road Improvement	Rotherham MBC	£7m – 1km dual 2-lane carriageway plus improved junction between the A631 and the A618 at Whiston
A65 Quality Bus Corridor (Kirkstall Rd)	Leeds City Co.	£21m – 3.5km of dedicated bus lanes on the A65 approach to Leeds from the North West.
Bridlington Integrated Transport Plan	East Riding Co.	£6m – new park and ride, the relocation of the boat compound at Wilsthorpe, and new roundabout at Carnaby.
Cudworth and West Green Bypass	Barnsley MBC	£22m – 5.2km bypass of A628 through Cudworth
Glasshoughton Coalfields Link Road	Wakefield MBC	£12m – new 3.4km mainly single carriageway road linking the A655 Normanton Bypass to the A6359 Leeds Road at Glasshoughton.
Hemsworth - A1 Link Road	Wakefield MBC	£24m – 5 mile new single carriageway running from the Hemsworth Bypass to the A1 at Barnsdale Bar
A638 Quality Bus Corridor	Doncaster MBC	£20m – two Park & Ride car parks on the A638 to the north and south of Doncaster, road widening to accommodate new bus lanes and a short section of dedicated busway
Scarborough Integrated Transport Scheme	N Yorkshire CC	£35m – new 2.7 mile (4.3km) bypass on the A165, two new park and ride facilities, and an urban traffic control system.
East Midlands		
A6096 Ilkeston-Awsorth Link Road	Derbyshire CC	£16m – new link road bypassing Station Road.
A47 Earl Shilton	Leicestershire CC	£21m – 5km long single carriageway bypass of Earl Shilton
Connecting Derby	Derby City Co.	£36m – Improvements within Derby including bus and taxi priorities, construction of new junctions and new dual and single carriageways.
A1073 Spalding to Eye Improvement	Lincolnshire CC / Peterborough City Co	£82m – 13.7 mile road linking the A16 near Spalding to the A47 (T) and the A15 (near Peterborough), bypassing a number of local settlements.
A158/C541 Coastal Access Improvement Burgh Le Marsh	Lincolnshire CC	£14m – 5km bypass to the north of the town.
Markham Vale (MEGZ)	Derbyshire CC	£30m – construction of a new junction on the M1 motorway (J29A) and a new principal road linking into the local road network to provide access to the Markham Vale regeneration area.
West Midlands		
Rugby Western Relief Road	Warwickshire CC	£55m – new 6 km single carriageway road designed to bypass the congested gyratory system in Rugby town centre as well as removing through traffic from the villages of Cawston and Bilton.

Scheme name	Scheme promoter	Scheme total cost and description
A41 Expressway / A4031 All Saints Way Junction Improvement	Sandwell MBC	£24m – dual carriageway underpass to carry the A41 beneath the existing roundabout to improve access to West Bromwich Town Centre.
West Midlands UTC Major Scheme	WM Combined authorities	£26m – programme of improvements including co-location of a strategic UTMC facility, infrastructure improvements including signal and junction upgrades, improved communications systems and Variable Message Signs.
A4123 / A461 Junction Improvement Burnt Tree	Dudley MBC	£12m – replacement of the existing five-arm roundabout with a four-arm traffic signal junction and the diverting of one arm into a further new signal controlled junction on the A4123.
Brierley Hill Sustainable Access Network	Dudley MBC	£27m – new road to bypass the town centre, plus the Waterfront Way link which will move much of the remaining traffic to the north of the town.
Owen Street Level Crossing Relief Road, Tipton	Sandwell MBC	£27m – a new relief road to bypass the level crossing in the town centre
Tunstall Northern Bypass	Stoke on Trent City Co.	£13m – construction of a strategic link from the A527 to the A50, A500 and M6 relieving Tunstall town centre of heavy through traffic
BIA/NEC Public Transport Scheme	Solihull MBC	£13m – package of measures including a new multi-modal interchange at Birmingham International rail station, new bus lanes and priority measures, greater frequency of bus services, real time information facilities, new pedestrian and cycle facilities.
Walsall Town Centre Transport Package	Walsall MBC	£25m – package of measures to increase capacity on the ring road and improve conditions for cyclists and shoppers within the town centre.
West Midlands Red Routes	Joint WM authorities	£28m – 130km of Red Routes across the West Midlands.
East		
A130/A13 Sadlers Farm	Essex CC	£70m – improvements to Sadlers Farm Junction and the adjacent A13
A507 Ridgmont Bypass	Bedfordshire CC	£22m – 2.5 km bypass of Ridgmont.
Luton Dunstable Busway	Luton BC	£91m – 7.2m bus rapid transit scheme running from Luton Airport, through Luton, to Dunstable and Houghton Regis.
B1115 Stowmarket Relief Road	Suffolk CC	£18m – 0.5 mile single carriageway including new bridge over the Norwich to London railway line removing a level crossing
Cambridgeshire Guided Busway	Cambridgeshire CC	£93m – 25km of segregated guided busway between Huntingdon and Cambridge and 17km of on-street running through the city of Cambridge linking the Science Park and Addenbrooks Hospital.
South East		
A224 Walton Bridge	Surrey CC	£32m – new bridge across River Thames

Scheme name	Scheme promoter	Scheme total cost and description
Sittingbourne Northern Relief Road	Kent CC	£31m – 1.5km single carriageway completing relief road around Sittingbourne.
East Kent Access Phase 2	Kent CC	£87m – 5 miles of new dual carriageway to replace sections of substandard single carriageway on the A256 and A299.
M4 Junction 11 and Mere oak Junction Improvement	Reading BC / Wokingham BC	£65m – upgraded M4 Jct 11 plus adjacent junction improvements
South West		
Poole Bridge Regeneration Initiative – Core Scheme Element (Twin Sails Bridge)	Poole Borough Council	£37m – new lifting bridge between Poole and Hamworthy and associated road improvements.
Greater Bristol Bus Network	South Gloucestershire Council	£79m – 10 showcase bus corridor improvement schemes in the sub-region.
Taunton Third Way	Somerset CC	£9m – new link road linking A38 Wellington Road & Bridge Street, Taunton, providing a new North – South route to relieve town centre congestion
Weymouth Relief Rd	Dorset CC	£89m – 7km single carriageway road linking the A354 Manor Roundabout to the A354 at the top of Ridgeway Hill.
Weymouth 2012	Dorset CC	£11m – A public transport package incorporating junction capacity improvements

Table 14 Short scheme descriptions