



Department  
for Transport

# Impact of the Local Sustainable Transport Fund Summary Report

**Moving Britain Ahead**

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# Foreword

Local transport affects people in every corner of the country. The quality of our local infrastructure and services shape the choices we make about how we travel, including our ability to act in sustainable and healthy ways.

In 2011, the Department launched a £540 million fund to improve local infrastructure and change travel behaviours. The project aimed to improve infrastructure for cyclists, provide better information offering people more and better options for getting around locally, and hopefully having a lasting influence on their travel behaviour.

It is now a year since the last of the 96 projects we funded across 77 local authorities was completed. Now is a good time to look back at the projects we funded and share our experience of how well they have delivered against their intended objectives.

We have collected the evidence to see how the different interventions (proposed, planned and delivered by Local Authorities) worked. This work will both help us celebrate the successes we have achieved, and learn some important lessons which can be built into any future funding programmes aimed at achieving similar objectives.

This report – which sets out the findings of a full independent evaluation – contains some impressive success stories. We have helped to rejuvenate town centres, making roads safer, more pleasant to use and more user friendly, supported access to work, increased cycling, and reduced carbon emissions. At a programme level, the independent evaluation shows that on average the schemes we supported have achieved their intended results, with the best schemes surpassing them.

To make sure that we learn as much as possible from this programme, we will be following up this initial report with a more detailed meta-evaluation, case studies and a synthesis report. These will support the annual reports which have already been published through the lifetime of the scheme, and the accompanying What Works study.

As a Department, we take great pride in the way in which our programmes and policies are shaped by clear evidence and careful evaluations. I hope that this report on our four year LSTF programme will be useful not just to us but to partners in local authorities elsewhere, engaged in the important business of designing and delivering initiatives aimed at improving the quality and sustainability of local travel choices.

**Patricia Hayes**

**Director General, Roads Devolution and Motoring, Department for Transport**

# Executive summary

## Local authorities received £540m for sustainable transport initiatives

- 1 The Local Sustainable Transport Fund (LSTF) was the biggest-ever competitive funding programme for sustainable transport initiatives in England. Between 2011 and 2015 the Department for Transport (DfT) distributed **£540 million in grants** to 12 'Large Projects' (receiving 46% of the total) and 84 'Small Projects' (receiving up to £5 million each). The **overall expenditure was approximately £1 billion**, including contributions from local authorities and DfT grants for non-local schemes such as Bikeability.
- 2 The Fund's core objectives were to support the local economy and to reduce carbon emissions. In addition, the Fund aimed to deliver wider social and economic benefits (e.g. accessibility and inclusion); improve safety; improve air quality; and increase physical activity and the resulting health benefits.
- 3 Local authorities invested the funding in **infrastructure schemes** to increase bus and rail patronage and active travel (cycling and walking), and **complementary initiatives** such as new bus services, cycle training and travel support for job-seekers.
- 4 Each funded project undertook monitoring in line with an overarching monitoring and evaluation framework. A meta-evaluation pulled together data and evidence to assess overall impact.
- 5 **The programme was successful in achieving its objectives**, particularly in relation to the local economy, carbon emissions, wider social and economic benefits, and physical activity. There was less direct evidence of its impacts on air quality or road safety, although both may have benefited to some degree.

## Projects reduced car use and successfully promoted bus use, cycling and walking

- 6 **Car use fell in LSTF Large Project areas.** Relative to a 'comparator group' of local authorities, per capita car traffic fell by 2.3 percentage points (pp) (in Large Projects it fell by 2.6%; in the comparator group by only 0.3%). Although LSTF schemes were unlikely to be the only cause of the fall in per capita car traffic, the meta-evaluation concluded that they were likely to have contributed significantly.
- 7 While per capita bus trips fell by 3.3% in the Large Project areas, they declined by 8.5% in the comparator group. **Relative to the comparator group, per person bus trips thus increased by 5.2pp.**
- 8 **The proportion of adults who cycled increased by 6.6pp in the LSTF Large Project areas relative to the comparator group** (it increased by 2.8% in LSTF areas and decreased by 3.8% in the comparator areas). The seven Large Projects that had implemented many cycling interventions had some evidence of increased

cycling levels from automatic or manual cycle counts.

- 9 Many LSTF Projects implemented measures to reduce **car commuting**. Across 93 workplaces in the Large Project areas, car driving fell by 2.7pp. This was equivalent to a **4.1% reduction** in car driver commuting. The impact was smaller than that of previous interventions, probably because most LSTF workplace interventions focused on encouragement and information, rather than reducing or restricting parking.

## The local economy was supported and carbon emissions fell

- 10 The LSTF programme was intended to support local economies. Although an overall judgement of local economic impact is difficult to make, evidence shows a range of positive effects from different types of interventions:
- Town centre public realm enhancements. The Town Centres Case Study, which reviewed two town centres, found these **drove up retail confidence and growth**.
  - **Help for unemployed** people to get to interviews, training and new jobs. Over a two year period, 10% of all unemployed people in Large Project areas received this support. Survey evidence suggests it had helped job-seekers to secure employment, and had enabled them to accept jobs that they would otherwise have had to turn down.
  - Improvements to **bus punctuality**, which in some cases were network-wide and in other cases tackled problems on targeted corridors. Some areas improved bus punctuality even in the context of worsening congestion for general traffic.
  - Other measures included support for the rural tourism economy; training to prepare people for transport sector employment; establishing new enterprises to provide sustainable transport services; working with businesses to reduce transport operating costs; and provision of bus services to peripheral employment sites, enabling businesses to recruit more widely.
- 11 The LSTF programme also aimed to reduce carbon emissions. **Per capita CO2 emissions from transport fell by 2.2pp** in the Large Project areas relative to the comparator group (it fell by 6.9% in Large Projects and by 4.7% in the comparator group). Absolute CO2 emissions fell by 1.9pp more than in the comparator group. A significant proportion of the fall in carbon emissions in the Large Project areas is likely to be directly attributable to the LSTF programme.

## The LSTF investments achieved high value for money

- 12 **The programme delivered by the LSTF Large Projects was very high value for money**, with a benefit-cost ratio (i.e. the amount of Pounds in benefit achieved for every £1 invested) of above 5. The 'outturn' BCR (best estimate 5.2 - 6.1) was similar to the predicted BCR (5.2), suggesting that the programme was successful in achieving its expected outcome so far as value-for-money was concerned. The estimated cost per car kilometre removed (i.e. the cost of interventions that encouraged a shift from driving divided by the reduction in car kilometres driven as a result) was 4.8p. This was broadly comparable with estimates from previous sustainable transport investment programmes.

# Lessons learned

- 13 The following lessons were derived by the authors of the meta-evaluation and the What Works report and are summarised here for convenience. They do not represent a statement of official government policy or recommendations by government.
- 14 The evaluation of LSTF-funded projects provided an opportunity to generate evidence about the effectiveness of different types of interventions, processes of implementation and of providing funding, but also on how to carry out effective evaluations. Lessons for national and local practitioners and policy makers, and national and local evaluators, are set out in detail in the meta-evaluation (section 14.11) and in the What Works? report<sup>1</sup>. Some of the key lessons are summarised below.

## National policy makers

- Local authorities are likely to make full use of the breadth of scope provided by funding opportunities, investing in projects that differ widely in scale, focus and effectiveness. **There is a trade-off between allowing schemes to reflect local priorities, and the limits such diversity imposes** on the ability to share experience and learn about the effectiveness of different types of interventions.
- The **inclusion of both revenue and capital funding was a major strength** of the programme, as this enabled local authorities to develop the optimum mix of complementary schemes to maximise effectiveness.
- A significant proportion of LSTF implementation time was spent in ‘start up’ and ‘wind down’ phases, reducing the effectiveness of implementation. **Consider a longer funding period** to allow for more effective implementation and provide better value for money. There could be advantages in phased funding, with an initial development period before full funding is released to viable projects.
- **Competitive funding programmes offer a way to encourage innovation and take good practice to the next level up**, but they are **not a substitute for core funding**, and their benefits may be reduced if they are implemented within a wider context of retrenchment.
- **Structured opportunities for projects to share experience and to collaborate** (e.g. through regionally-based or theme-based ‘communities of practice’) could improve programme outcomes.
- The evaluation framework used for the LSTF evaluation generated, despite some shortcomings, valuable evidence at local and national level. Similar funding programmes should also **integrate evaluation considerations into the early part of the policy making process**.

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<sup>1</sup> Available at <https://www.gov.uk/government/publications/local-sustainable-transport-fund-what-works>



## Local policy makers and practitioners

- 15 **The What Works? report draws out detailed lessons** for the local delivery of sustainable transport activities. Lessons are presented separately for initiatives aimed at increasing bus use, cycling, and travelling to stations and by train; encouraging sustainable transport to work; and helping job seekers into work. In addition, the What Works report covers marketing of sustainable travel and strategy and leadership. Here we present a short summary of the key lessons in relation to strategy and leadership:
- **Continuity is important.** Stop-start funding cycles lead to wasted effort and money. This can to some extent be mitigated by local authorities that have consistent political support for sustainable transport, a long-term strategy, and an experienced in-house sustainable transport team. Local authorities that succeed in maintaining in-house sustainable transport teams between funding cycles are better placed to take advantage when funding opportunities arise.
  - **Keeping the core delivery team in-house also gives greater flexibility,** builds on the team's existing familiarity with the area, and means that when the project ends, the learning and relationships that have been developed will be retained.
  - **Projects should be targeted to geographical areas where there is the most potential for change,** and where there is strong community and political support. Projects that grow out of a pre-existing partnership (e.g. with employers or a university) are more likely to succeed than projects where there is no pre-existing relationship.
  - **It is important to be flexible and where necessary to adapt projects in the light of experience** in the early stages. However, experimental initiatives may not work straight away, and so it is also important to be persistent.
  - The 'right' balance between capital and revenue schemes depends on the starting point, but **schemes should be planned so that they offer synergistic effects.**

## National evaluators

- 16 The overarching evaluation of programmes that fund a wide range of initiatives is inherently complex. The meta-evaluation<sup>2</sup> included detailed recommendations for the design of similar national evaluations in future. In summary:
- At the outset, evaluation planning could improve the chances of an effective meta-evaluation by a more directive 'top-down' approach, including: designing an approach to data collection and reporting in which outputs and outcomes are linked rather than separated; standardising the way in which scheme elements are reported; providing detailed guidance specifying the data characteristics required to ensure reported outcomes can be attributed to interventions; requiring unsuccessful initiatives to be reported as well as successful ones; and focussing data collection on metrics that would be expected to show observable change as a result of the schemes being implemented, rather than on overly high-level metrics.

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<sup>2</sup> Lynn Sloman, Sally Cairns, Anna Goodman, Jean Hopkin, Ian Taylor, Lisa Hopkinson, Oliver Ricketts, Beth Hiblin and Matthew Dillon (in press): *Meta-analysis of Outcomes of Investment in the 12 Local Sustainable Transport Fund Large Projects*. Report to the Department for Transport.

- On an ongoing basis, national evaluators should work closely with local evaluators to ensure that data are being collected and reported in a comparable way across schemes, to enable meta-analysis.
- Evaluation should be framed so as to gather 'output' information on all activities of a particular type, regardless of the funding source, rather than only gathering information on that subset of activities funded by the particular grant programme that is being evaluated.
- The evaluation period should extend for several years after the end of the programme, to allow time for full effects to be realised (including the effects of schemes implemented at or near the end of the programme), and to ensure that secondary datasets for the full period up to and beyond the end of the programme are available for analysis.
- The establishment of a central repository for local evaluation data ought to be considered to enable future evaluations and other researchers to make full use of the evidence collected.

## Local evaluators

- It is important to keep a record of the scale of all activities on a rolling basis (e.g. quarterly), to enable judgments to be made about whether any changes in 'outcome' metrics could plausibly be due to the activities.
- Evaluations that collect primary outcomes data should seek where possible to collect continuous time-series data covering both the pre-intervention period and an extended time period afterwards. This increases the likelihood that it will be possible to make judgments about whether any change is attributable to the intervention.
- A comprehensive network of automatic cycle counters is essential for collecting evidence on how effective an area-wide cycle investment programme has been. Sufficient funding must be allocated to ensure that all automatic cycle counters are maintained and fully-functioning for the duration of the programme and several years afterwards.
- Where funding is allocated to bus service improvements, the local authority should secure the agreement of the relevant commercial bus operators to share detailed patronage data, disaggregated by route, as a condition of funding.
- In principle, the careful identification of suitable local comparator areas has the potential to strengthen the conclusions that can be drawn. However, identification of areas that are sufficiently similar, in terms of socio-demographics, traffic flow, number of monitoring sites etc. can be challenging.

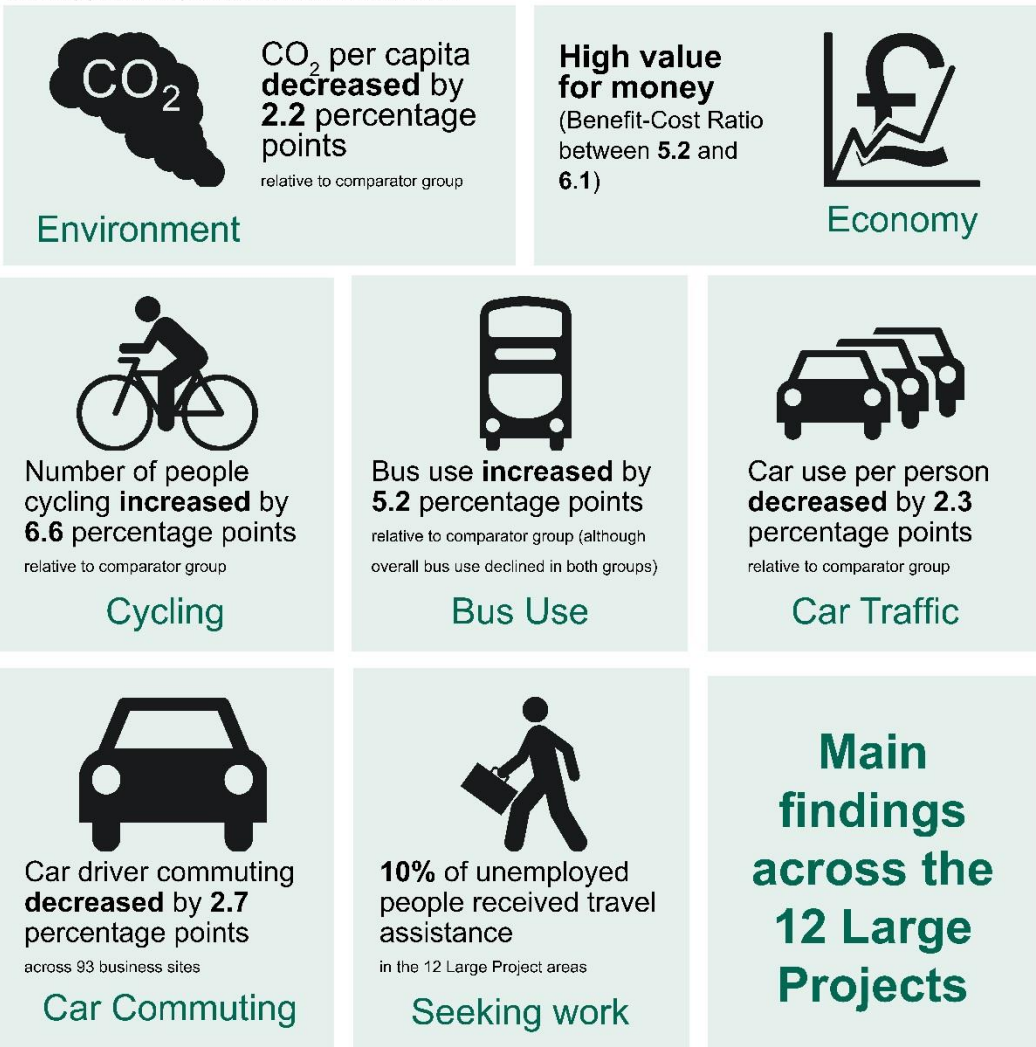
# Local Sustainable Transport Fund (LSTF)



## The LSTF:

- Supported 96 projects: 12 Large projects and 84 Small projects
- The total fund was £540 million, of which the large projects received 46%
- Met the two core policy objectives: to support local economies and to reduce carbon emissions

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# 1. Context and outputs

## Introduction

- 1.1 In 2011, the Department for Transport (DfT) launched the biggest-ever competitive funding programme for sustainable transport initiatives in England, the Local Sustainable Transport Fund (LSTF). The Fund was open to all local transport authorities in England outside London, and offered **£540m in capital and revenue funding** for investment in sustainable transport projects<sup>3</sup>. Local authorities also contributed significant amounts of their own funding, to take the **total sum invested in projects supported by the LSTF to around £1bn**.
- 1.2 The Fund supported projects that were designed to meet two core policy objectives<sup>4</sup>:
  - **To support the local economy and facilitate economic development**, for example by reducing congestion, improving the reliability and predictability of journey times, or enhancing access to employment and other essential services
  - **To reduce carbon emissions**, for example by bringing about an increase in the volume and proportion of journeys made by low carbon sustainable modes including walking and cycling.
- 1.3 It also had four secondary objectives:
  - To help to deliver **wider social and economic benefits** (e.g. accessibility and inclusion) for the community
  - To **improve safety**
  - To bring about **improvements in air quality** and increased compliance with air quality standards, and wider environmental benefits such as noise reduction
  - To **actively promote increased levels of physical activity** and the health benefits this can be expected to deliver.
- 1.4 96 projects were awarded funding. Twelve of these were 'Large Projects', receiving grants of more than £5 million (and in all, accounting for 46% of the total grant). The remaining 84 projects were 'Small Projects' and received grants of up to £5 million.
- 1.5 The main phase of the LSTF programme ran from July 2011 to March 2015. Some LSTF projects ('Tranche 1' and 'Key Components' of Large Projects) received funding for the whole of this period; others ('Tranche 2' and Large Projects) received funding between July 2012 and March 2015. There was also an 'extension' year of funding from March 2015 to March 2016, which enabled some LSTF projects to continue their projects.

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<sup>3</sup> A further £60m were invested in the Bikeability cycle training scheme. This scheme is not considered part of LSTF in the context of this report.

<sup>4</sup> Department for Transport (2011) *Local Sustainable Transport Fund – Guidance on the Application Process*

## Implementation context

- 1.6 The LSTF built on experience from three smaller-scale programmes, the Sustainable Travel Towns (STT) programme, the Cycling Demonstration Towns / Cycling City and Towns (CDT/CCT) programme and, to some extent, the contemporaneous Better Bus Areas (BBA1) programme. It differed from these previous programmes in four significant respects:
- 1 Firstly, LSTF entailed a considerable expansion of scale, involving a much larger number of local authorities. Some of the local authorities were therefore starting with less experience of implementing sustainable transport interventions.
  - 2 Secondly, LSTF adopted much wider-ranging objectives than previous programmes. While this meant that the funding could be used for a variety of schemes, as suited local circumstances, it also carried the potential for a loss of focus.
  - 3 A further difference was that the depth of peer-to-peer learning was less than for previous programmes, and there was also less expert specialist support built into the programme.
  - 4 A final difference was that, as a result of the expansion of funding to many local authorities, local authorities inevitably could not retain the high 'pioneer' status they had gained by participating in previous smaller programmes, which could have led to less involvement and backing by senior officers and councillors. Conversely, the expansion brought the large benefit, in policy terms, of supporting many local authorities to trial unfamiliar sustainable transport initiatives, with the potential for this to lead to wide adoption of new approaches if the experimentation funded through LSTF was found to be effective.

## Main strands of activity

- 1.7 The activities implemented by LSTF projects varied widely, but there were also some common themes:
- There was a strong (but not exclusive) emphasis on **travel to work**, reflecting the Fund's core focus on supporting the local economy while reducing carbon.



Brighton's LSTF project focused on the A270 Lewes Road corridor. The scheme included traffic signals with bus and cycle priority; bus and cycle lanes in both directions for 5km; and new bus shelters with seating and real-time information. Pedestrian and cycle crossing facilities were improved, and the public realm was enhanced by tree-planting and new paving. The personalised travel planning team spoke to over 8,000 people on doorsteps and over 2,000 people at events, offering services such as eco-driver training and bike maintenance.

- Many Projects adopted a **corridor approach or an area approach**, in which infrastructure such as bus priority measures and cycle paths, and behaviour change activities such as personalised travel planning and workplace travel planning, were concentrated along a limited number of main routes into a town, or in an area with many employment sites. Some had a particular focus on improving non-car access to 'hard-to-reach' car-dependent employment sites, thereby increasing access to jobs and widening the workforce pool available to employers.
- Most Projects promoted **bus travel** through measures that included bus lanes, bus priority at traffic lights, new or more frequent bus services (often aimed at commuters), real-time passenger information, bus shelter upgrades, improvements to existing buses such as free WiFi and on-board 'next stop' information, multi-operator smartcard ticketing, and marketing.
- Most Projects promoted **active travel** (cycling and walking) through measures including cycle paths, cycle parking, adult cycle training, bicycle loan schemes, public bike hire schemes, cycle 'hubs' with secure parking and storage lockers, walk and cycle challenges, led walks and cycle rides, 20mph zones, 'safe routes to school' traffic calming and public realm improvements.

- Many Projects developed **innovative approaches to travel behaviour change** such as workplace-based personalised travel planning and free bus ticket offers; marketing along public transport corridors (including distribution of free bus tickets to households); neighbourhood-based approaches such as virtual ‘community smarter travel hubs’; and engagement with people at times of transition (e.g. from school to college or the workplace).
- Most behaviour change interventions tended to **rely on ‘pull-factors’** (carrots) and did not attempt to create a supportive environment through intervening with ‘push-factors’ (sticks).
- Some Projects developed services to **support job-seekers in finding work**, such as free travel passes, free bicycles and cycle training, and personalised travel information.
- Some Projects sought to **reduce carbon emissions** through eco-driving schemes and an ECO Stars fleet efficiency scheme.

## Summary paper

- 1.8 This paper is based on the evaluators’ Synthesis report, which itself synthesises the findings of (i) the Meta-evaluation, (ii) the topic-specific case studies and (iii) the What Works? report. The Summary is provided in order to offer an easily accessible synopsis of the key findings and lessons. For more detail on methodology, sources of evidence and detail of the different interventions, please refer to the main reports.



### Local Sustainable Transport Fund in numbers

Nearly 90% of LSTF Projects included activities to increase cycling. They built **740km of cycle routes** and **33,600 cycle parking spaces**. They gave 62,000 adults the skills to repair a bike or serviced their bike for them. They gave 27,900 adults cycle training, and 55,900 took part in led cycle rides.

More than half of LSTF Projects funded new bus services, or upgraded existing bus services to run more often, operate longer hours, or serve more places. 90% of Projects included actions to improve bus travel, and **3,800 bus stops received major improvements** such as real-time information displays, new shelters or higher kerbs for step-free bus access.

Over 90% of LSTF Projects helped people travel to work by sustainable transport. Commuters to **6,600 workplaces** are estimated to have been assisted by LSTF-funded schemes.

Over half of LSTF Projects encouraged train travel or sustainable travel to stations. Better access routes and station facilities for pedestrians, cyclists and bus users were installed at **230 stations**. Thirty stations received more train services, and two completely new stations were built.

A quarter of LSTF Projects helped unemployed people to access work. About **116,000 job-seekers** received some form of support as a result of LSTF-funded schemes\*.

Personalised travel planners contacted more than **390,000 households**, of which 206,000 requested sustainable transport information, taster bus tickets, free cycle training or other offers.

\* Total increased from estimate published in the *What Works Report?* in light of subsequent data.



## 2. Car traffic

During the LSTF period, per capita car traffic reduced in the Large Project areas by 2.3 percentage points, relative to a comparator group of local authorities. LSTF was unlikely to be the only cause of this, but appears to have made a significant contribution.

- 2.1 To achieve the LSTF's objective of reducing carbon emissions, many projects sought to reduce car traffic. This aim appears to have been achieved: according to road traffic statistics, car traffic per person<sup>5</sup> fell by 2.6% in Large Project areas over the LSTF period.<sup>6</sup> Car traffic also fell in a 'comparator group' of local authorities<sup>7</sup>, but by a smaller amount (0.3%). This means there was a relative reduction in car traffic of 2.3pp, which was statistically significant.
- 2.2 We can have some confidence that this reduction was at least in part related to the LSTF. First, it was not simply a continuation of existing trends. As Figure 2 shows, the divergence in per capita car traffic between Large Project areas and the comparator group was much smaller before 2011, when the LSTF started, than it was afterwards<sup>8</sup>. Furthermore, all 10 Large Project areas experienced a reduction,<sup>9</sup> rather than average benefits being caused by a small number of successful areas.
- 2.3 The picture of per capita car use falling in LSTF Large Project areas is reinforced by other evidence. According to the Carbon and Congestion Case Study, the average weekly distance driven per person fell by 8.4 miles in the case study's LSTF areas, relative to its comparator areas<sup>10</sup>. This represented a comparative 7% fall in car driving levels<sup>11</sup>.
- 2.4 Taking the evidence as a whole, it appears that an ongoing programme of sustainable transport interventions, of which was the LSTF was a part, was a main cause of the reduction in car traffic, although other factors are likely to have played a significant role.

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<sup>5</sup> We report *per capita* trends here and elsewhere in this briefing paper. The *Meta-analysis* also reported overall changes in traffic. There was higher population growth in the Large Projects than in the comparator group over the LSTF period, but despite this, overall traffic volumes still increased less for the Large Projects as a group, and for each Large Project individually, than for the comparator group.

<sup>6</sup> The pre-post change is measured between a baseline combining the years 2009-11, and the end of the LSTF programme in 2015.

<sup>7</sup> The comparator group was all local transport authorities in England that are not part of a Large Project or in London. It therefore included areas that received some LSTF funding as Small Projects, as well as areas that did not receive funding.

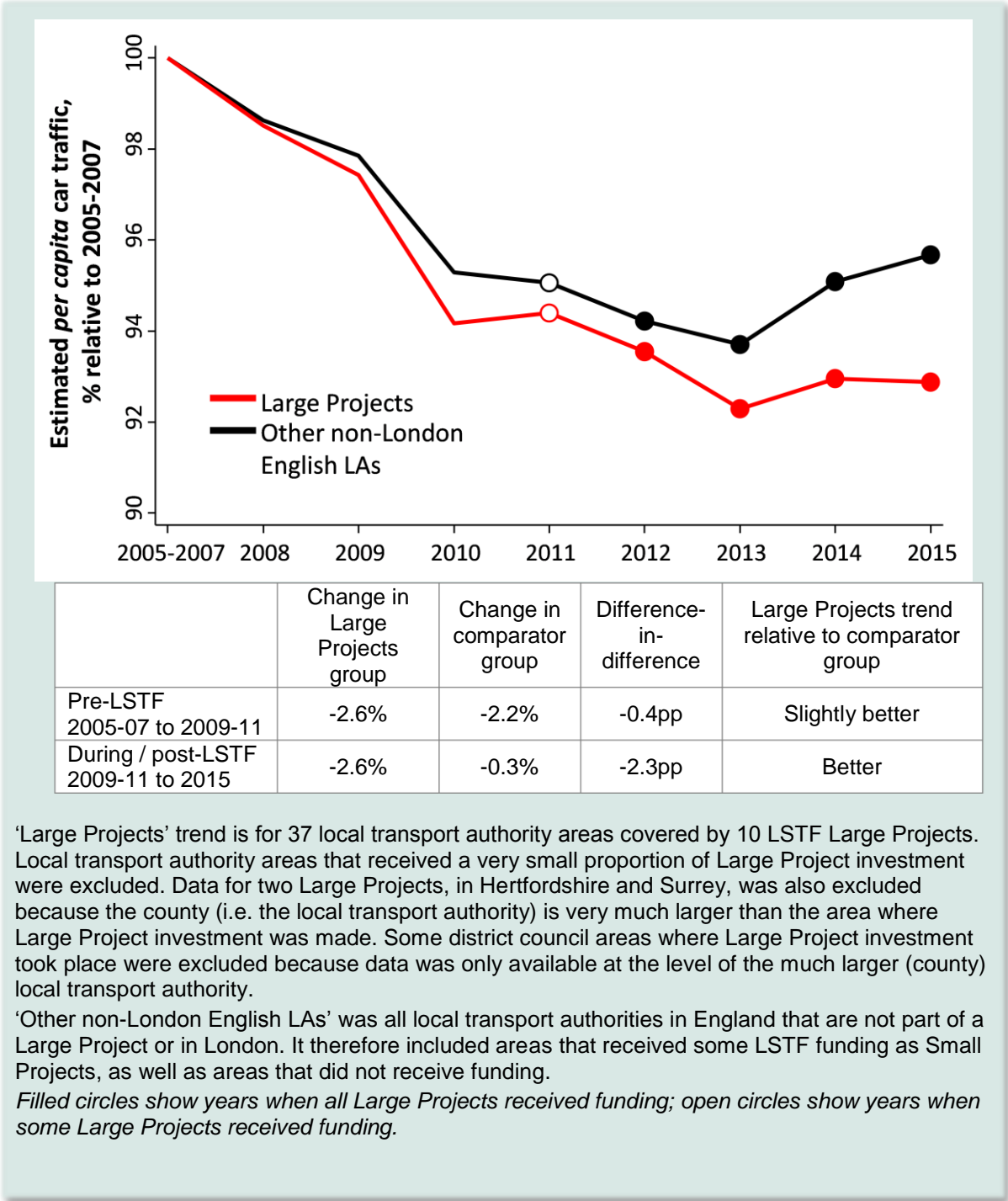
<sup>8</sup> This divergence was -0.4pp in the period 2005/7 to 2009/11 and -2.3pp in the period 2009/11 to 2015. Note also that the LSTF started in a period of economic recession, affecting both LSTF and comparator areas. As a result, traffic in all areas fell until 2013 and increased thereafter. The impact of the LSTF, i.e. the difference in pre-post changes between the areas, is unaffected by that general trend.

<sup>9</sup> Two Large Project areas, Hertfordshire and Surrey, were excluded because the county (i.e. the local transport authority) is much larger than the area where Large Project investment was made.

<sup>10</sup> Note that the case study defined its own group of comparator local authorities, so that both treatment and comparator groups differ from those for the Large Project areas discussed previously.

<sup>11</sup> Change was between a baseline survey in 2013 and a repeat survey in 2014.

**Figure 2: Indexed change in per capita car traffic in the Large Projects and the comparator group**



	Change in Large Projects group	Change in comparator group	Difference-in-difference	Large Projects trend relative to comparator group
Pre-LSTF 2005-07 to 2009-11	-2.6%	-2.2%	-0.4pp	Slightly better
During / post-LSTF 2009-11 to 2015	-2.6%	-0.3%	-2.3pp	Better

'Large Projects' trend is for 37 local transport authority areas covered by 10 LSTF Large Projects. Local transport authority areas that received a very small proportion of Large Project investment were excluded. Data for two Large Projects, in Hertfordshire and Surrey, was also excluded because the county (i.e. the local transport authority) is very much larger than the area where Large Project investment was made. Some district council areas where Large Project investment took place were excluded because data was only available at the level of the much larger (county) local transport authority.

'Other non-London English LAs' was all local transport authorities in England that are not part of a Large Project or in London. It therefore included areas that received some LSTF funding as Small Projects, as well as areas that did not receive funding.

*Filled circles show years when all Large Projects received funding; open circles show years when some Large Projects received funding.*



Nottingham achieved the biggest reduction in *per capita* car traffic of any English local authority outside London during the LSTF period (-8.2% between 2009-11 and 2015). LSTF funded development of a pay-as-you-go smartcard covering bus, tram and local rail. The smartcard also provides access to a car club, 17 secure cycle parking hubs and a network of 500 bikes for hire. Five community-based behaviour change programmes ran local events, activities, services and a travel support package for job-seekers. 600 bikes were loaned to staff and students at the universities. Nottingham's LSTF programme was in the context of major expenditure on public transport and introduction of a workplace parking levy.

## 3. Bus use

Before the LSTF, bus use had declined in both the LSTF Large Project areas and the comparator group. However, during the LSTF period, bus use fell more slowly in the Large Project areas than in the comparator group, such that there was a relative increase in per capita patronage of 5.2pp. Before the LSTF, per capita patronage had declined faster in Large Project areas than in the comparator group, but after the start of LSTF, that pattern was reversed.

Of the new LSTF-funded bus services examined during the meta-evaluation, most had achieved commercial viability and appeared likely to continue beyond LSTF. These routes represented 2.5 million extra bus trips per year, replacing 12 million car kilometres and avoiding 2,300 tonnes of carbon dioxide emissions.

- 3.1 Many LSTF projects aimed to increase bus travel. There was some evidence of success: according to DfT statistics,<sup>12</sup> per capita bus travel in Large Project areas increased by 5.2pp relative to the comparator group. In absolute terms, bus travel declined both in the Large Project area and the comparator group,<sup>13</sup> but there was a noticeable change when LSTF was implemented: before the start of LSTF, bus trips per person fell faster in Large Project areas (6.1%) than the comparator group (2.4%), but after the start of LSTF, bus trips per person fell slower (3.3%) than in the comparator group (8.5%).<sup>14</sup>
- 3.2 However, the better performance of the group of Large Projects was largely due to exceptional rises in patronage in two Large Projects (Reading and WEST), and to a lesser extent in Bournemouth and Solent. Most Large Projects showed a fall in bus use similar to the comparator group. It is likely that other initiatives (e.g. Better Bus Areas funding in Bristol, Bournemouth and Solent, and work by the local authority and the municipal bus company in Reading) were significant factors in the strong performance in these areas.

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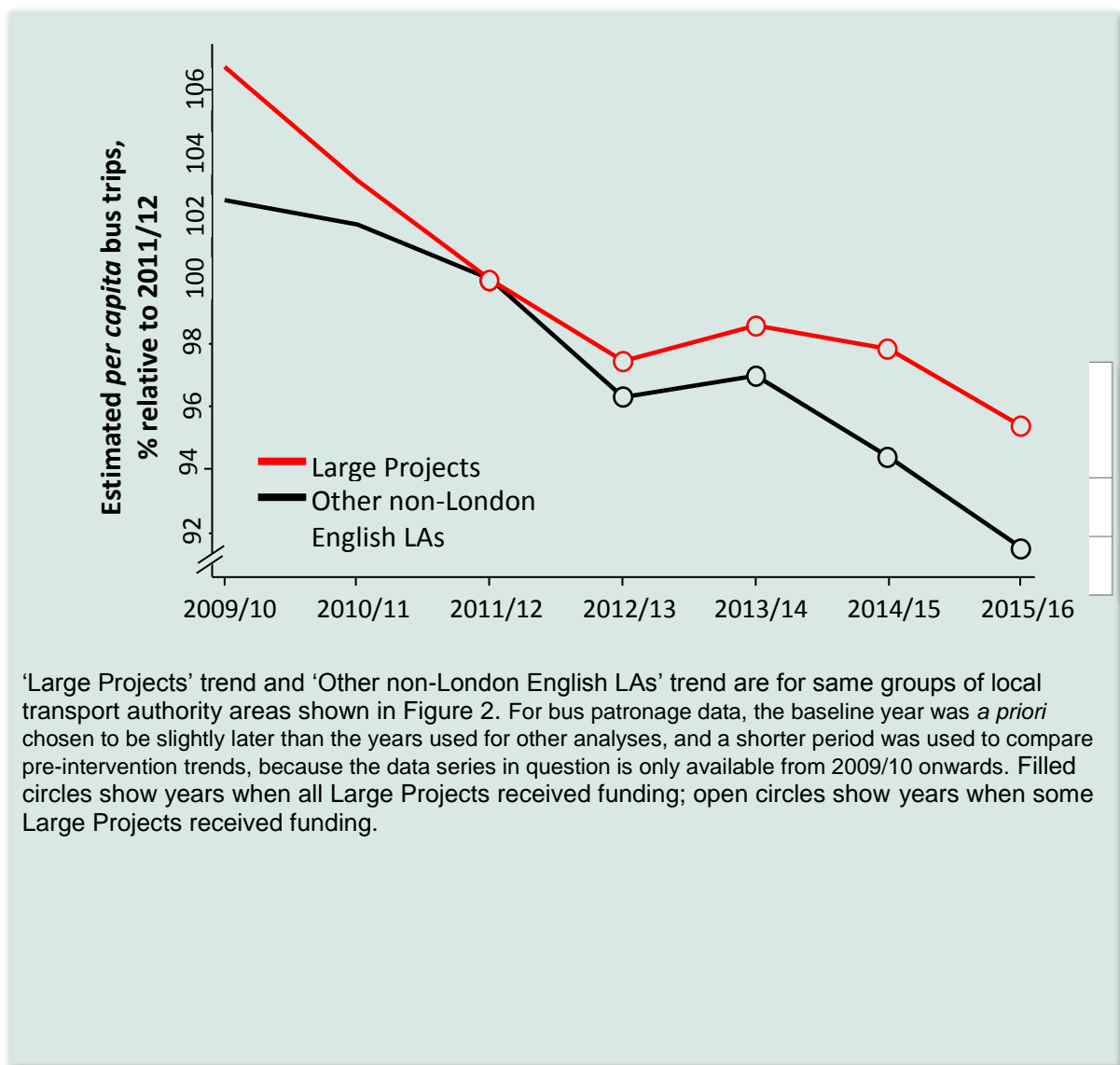
<sup>12</sup> See *Meta-analysis* for full details of metrics.

<sup>13</sup> Both measured in absolute terms and per capita.

<sup>14</sup> The difference between Large Project areas and the comparator group after LSTF is statistically significant, the difference before LSTF is not.

- 3.3 Towards the end of or after the LSTF, some Large Projects introduced smartcard ticketing. This is likely to produce benefits<sup>15</sup> which would not have been measured during this evaluation.
- 3.4 Many LSTF bus services (21 out of 28 examined in the Large Projects) appeared likely to continue beyond the end of LSTF funding, either because they had become commercially viable or because they were part of a longer term strategy. These 21 routes together resulted in an annual patronage uplift of 2.5 million trips, replacing an estimated 12.0 million car kilometres per year<sup>16</sup>, and avoiding an estimated 2,300 tonnes CO2e per year.

**Figure 3: Indexed change in per capita bus trips in the Large Projects and the comparator group**



<sup>15</sup> For example, one review of areas in the UK, Europe and America that had introduced simplified integrated ticketing found that it had increased patronage by 6-20%: Booz and Co (2009) *The benefits of simplified and integrated ticketing in public transport* Report for pteg.

<sup>16</sup> Calculations drew on surveys of bus users that showed the proportion who previously drove.

## 4. Cycling and walking

In the Large Project areas, the proportion of people cycling increased by 6.6pp relative to the comparator group. This appeared to be due to more people cycling, rather than existing cyclists cycling more.

There was only weak evidence of an increase in people walking in the Large Project areas.

- 4.1 There was some evidence pointing towards an increase in cycling in Large Project areas. According to the Active People Survey, the proportion of adults in the Large Project areas who had cycled in the past month rose (from 14.1% in 2010-12 to 14.5% in 2013-15, an increase of 2.8%), while the same proportion decreased in the comparator group (from 16.0% to 15.4%, a decrease of 3.8%).<sup>17</sup> This is equivalent to a difference in changes of 6.6pp.
- 4.2 There was indirect evidence that this increase may have been due to more people cycling, rather than existing cyclists cycling more, since existing cyclists reported little change in the hours they spent cycling.
- 4.3 There was also some evidence of increasing cycling from automatic and manual counts. In the seven Large Projects that invested in a large number of cycling schemes, data from multiple automatic cycle counter sites showed increases of +46% in Merseyside, +28% in Greater Nottingham and +23% in WEST excluding the City of Bristol. These figures do not suggest an overall cycling uplift of 20-50% in these cities, as cycle counters are likely to have been preferentially located in places where improvements to cycle infrastructure had been made, but they are suggestive of some increase in cycling activity. Data on change in overall cycling levels is more limited,<sup>18</sup> although Transport for Greater Manchester showed an area-wide uplift of +9% and Reading showed +2%.<sup>19</sup>
- 4.4 Although LSTF may have contributed to the uplift in cycling, other factors, such as previous investment in cycling, are likely to have played a part. This is suggested by an increase in cycling, in various areas, before LSTF.
- 4.5 Specific interventions included cycle routes, secure cycle parking, cycle training, cycle maintenance schemes and cycle hire, along with promotional events such as cycling challenges, festivals and led rides. When interviewed, project managers

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<sup>17</sup> The increase in Large Projects was statistically significant ( $p=0.04$ ) and the increase as compared to the comparator group was also statistically significant ( $p=0.02$ ).

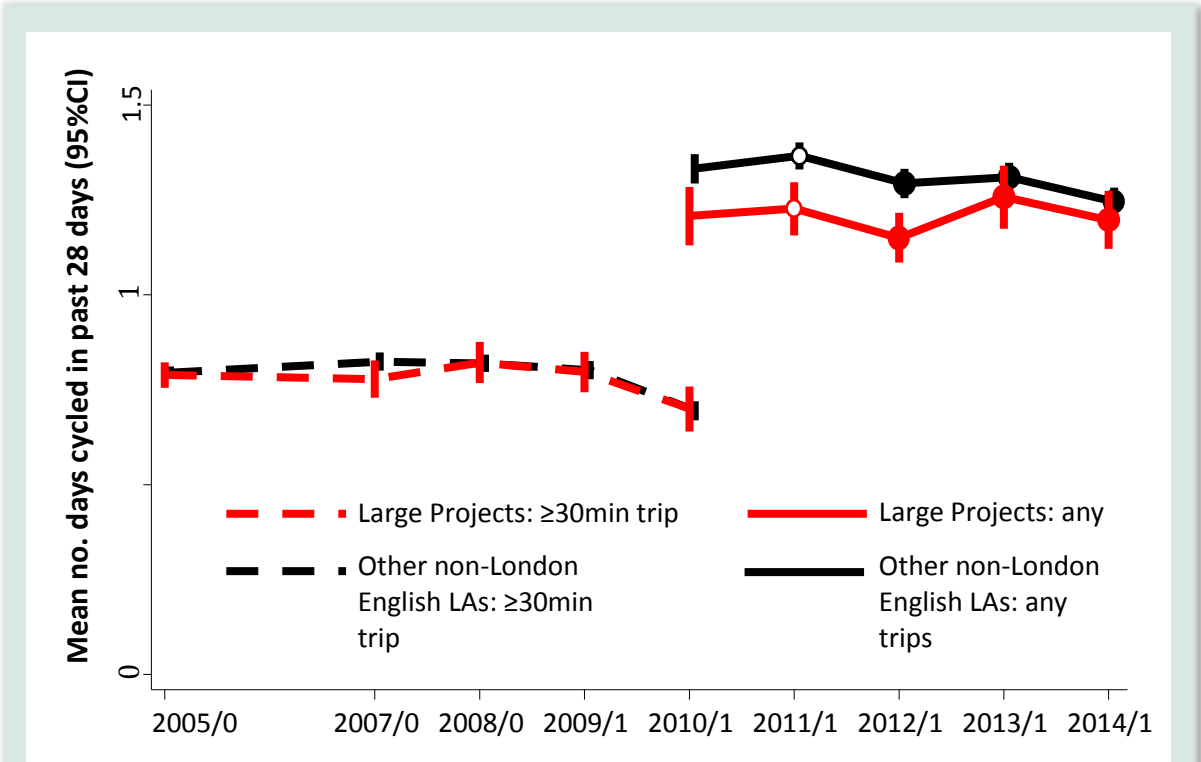
<sup>18</sup> Due mainly to inadequate deployment and maintenance of automatic cycle counters.

<sup>19</sup> Data from manual cordon counts. Data for TfGM is across all 10 district centres between 2012 and 2015. Data for Reading is between 2009-11 and 2014-16.

suggested that promotional activities were unlikely to be successful without good cycling infrastructure, and that a combination of approaches was most effective.

- 4.6 Various LSTF projects aimed to promote walking. While some individual interventions showed positive results, analysis of the Active People Survey showed similar trends in walking participation (the average number of days when adults had done any walking in the previous four weeks) in the Large Project areas and in the comparator group.

**Figure 4: Trends in the mean number of days on which adults had cycled in the previous four weeks, and proportion of adults who had cycled in previous four weeks**



Proportion of adults who had cycled in last four weeks				
	Change in Large Projects group	Change in comparator group	Difference-in-ratios	Large Projects trend relative to comparator group
During / post-LSTF 2010-12 to 2013-15	+2.8%	-3.8%	+6.6pp	better

‘Large Projects’ trend is for 53 unitary / district council areas covered by 12 LSTF Large Projects. Local authority areas that received a very small proportion of Large Project investment were excluded. ‘Other non-London English LAs’ trend is for the comparator group of all unitary / district council areas in England that are not part of a Large Project or in London. It therefore includes areas that received some LSTF funding as Small Projects, as well as areas that did not receive this funding. This means that it is not a ‘no intervention’ group, but is probably a ‘lower level of intervention’ group.

Filled circles show years when all Large Projects received funding; open circles show years when some Large Projects received funding.

Data is from the Active People Survey. Until 2010/11, the survey asked the number of days in the past four weeks when the respondent had made a cycle trip of at least 30 minutes. From 2010/11 onwards, the question was changed to ask about cycle trips of any duration.



## 5. Travel to work

For workplaces in Large Project areas who encouraged people to avoid driving to work, the proportion of people who drove to work fell by 2.7pp (equivalent to 4.1% fewer car driver trips).<sup>20</sup>

This change was smaller than the change found for previous initiatives. This may be because LSTF initiatives focussed on changing behaviour through encouragement and information, rather than forcing a change by reducing or restricting parking.

- 5.1 Many LSTF projects aimed to change the way people travel, focussing especially on people who drive to work. According to surveys of workplaces in Large Project areas who implemented LSTF initiatives, the proportion of people driving to work fell by 2.7pp. This was equivalent to 4.1% fewer car driver trips.
- 5.2 This change was less than previous initiatives that aimed to reduce the number of people driving to work.<sup>21</sup> This may be because LSTF schemes focussed on encouragement and information, rather than reducing or restricting parking. This conclusion is supported by the Strategic Employment Sites and Business Parks Case Study, which found that single occupancy car commuting fell by 1.7pp among businesses surveyed in the WEST Large Project area, but found that a relatively small number of employers were responsible for this fall, and that sites with restricted car parking showed better results. Interviews with senior managers confirmed that restricted parking was a key motivator.
- 5.3 This suggests that, in future such initiatives, it is important to reduce or ration car parking, as well as encouraging people to change how they travel to work.

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<sup>20</sup> That is, in Large Projects that delivered workplace-based activities to encourage a shift away from single occupancy car use for travel to work, data from 93 workplaces suggests a fall in car driver mode share (i.e. the proportion of people travelling to work who choose to drive) of 2.7pp%, which was statistically significant.

<sup>21</sup> For example, a 15% median reduction in Cairns et al. (2004) *Smarter Choices Changing the Way We Travel*

## 6. Travel for other reasons

There is evidence that some behavioural change initiatives succeeded in changing the way people travel for non-work trips. Because results were measured in different ways, the overall impact cannot be calculated, but some intervention-level results suggested significant effects.

- 6.1 Many LSTF Projects implemented behavioural change initiatives to encourage people to shift away from single occupancy car use towards more use of public transport, walking and cycling. These included household personalised travel planning projects, engagement programmes with schools and universities, and initiatives at railway stations, community hubs and in new residential developments.
- 6.2 Some of these initiatives appeared to deliver area-wide change. According to surveys, two Large Projects saw an area-wide fall in the proportion of pupils who were driven to school, and colleges in two other Large Project areas showed a fall in car use amongst staff and students. Against this, one Large Project area showed a rise in the proportion of pupils who were driven to school. Among the LSTF Small Projects, one notable result was that the proportion of trips to school by sustainable modes in Darlington reached 72% by 2013, the highest level since the local authority began collecting data in 2004/05. This result illustrates the benefit of long-term consistent engagement with schools: Darlington's LSTF work with schools was a continuation of a programme that started when it was a Sustainable Travel Town between 2004 and 2009.
- 6.3 In three Large Project areas, large-scale household personalised travel planning showed reduced levels of car use and increased levels of sustainable transport. Falls in car driver mode share ranged from 4-9pp in different projects implemented by CENTRO, and car driver trips fell by 2-12% in different projects implemented by Hertfordshire. In Greater Manchester, 9-10% of car drivers who received personalised travel planning reported reducing their car mileage. A number of Small Projects also reported positive results from household or community-based personalised travel planning.
- 6.4 Some of the monitoring of behavioural change initiatives was short-term, and it is unclear how long the benefits will be sustained. There was some evidence from TfGM that without continued input there may be regression. However, where a longer term programme of interventions continues, evidence from other studies<sup>22</sup> indicates that modest initial improvements in sustainable travel mode are likely to be sustained or increase over a longer time period.

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<sup>22</sup> Cairns et al. (forthcoming) *Sustainable travel towns: an evaluation of the longer term impacts*. Main report and appendices. TRL Report for DfT, PPR 776 and 776a.

# 7. Economic impacts of LSTF

LSTF public realm initiatives and walking and cycling access improvements improved perceptions of town centre accessibility. Retailers considered that LSTF investments had been positive for retail.

Activities to support jobseekers were seen by jobseekers to have helped to secure employment, and enable them to accept jobs. Rush-hour congestion worsened in the LSTF Large Projects. However, in a number of LSTF Large Projects, bus punctuality improved.

Activities to support sustainable travel for leisure (e.g. bus services aimed at visitors, cycle hire schemes) increased the use of sustainable modes. Businesses involved reported a greater increase in business volume than those that were not involved.

The programme delivered by the LSTF Large Projects was very high value for money, with a benefit-cost ratio that was above 5. The estimated cost per car kilometre removed (4.8p) was broadly comparable with estimates from previous sustainable transport investment programmes.

- 7.1 LSTF Projects used a variety of approaches to support the local economy and facilitate economic development (see Figure 6)<sup>23</sup>. The most prominent ones aimed to
- enhance town centre vitality<sup>24</sup>;
  - help jobseekers into work;
  - reduce congestion; and
  - strengthen the tourism economy.
- 7.2 Other approaches trained people to take up jobs in the transport sector; supported sustainable transport enterprises; helped businesses make transport efficiency

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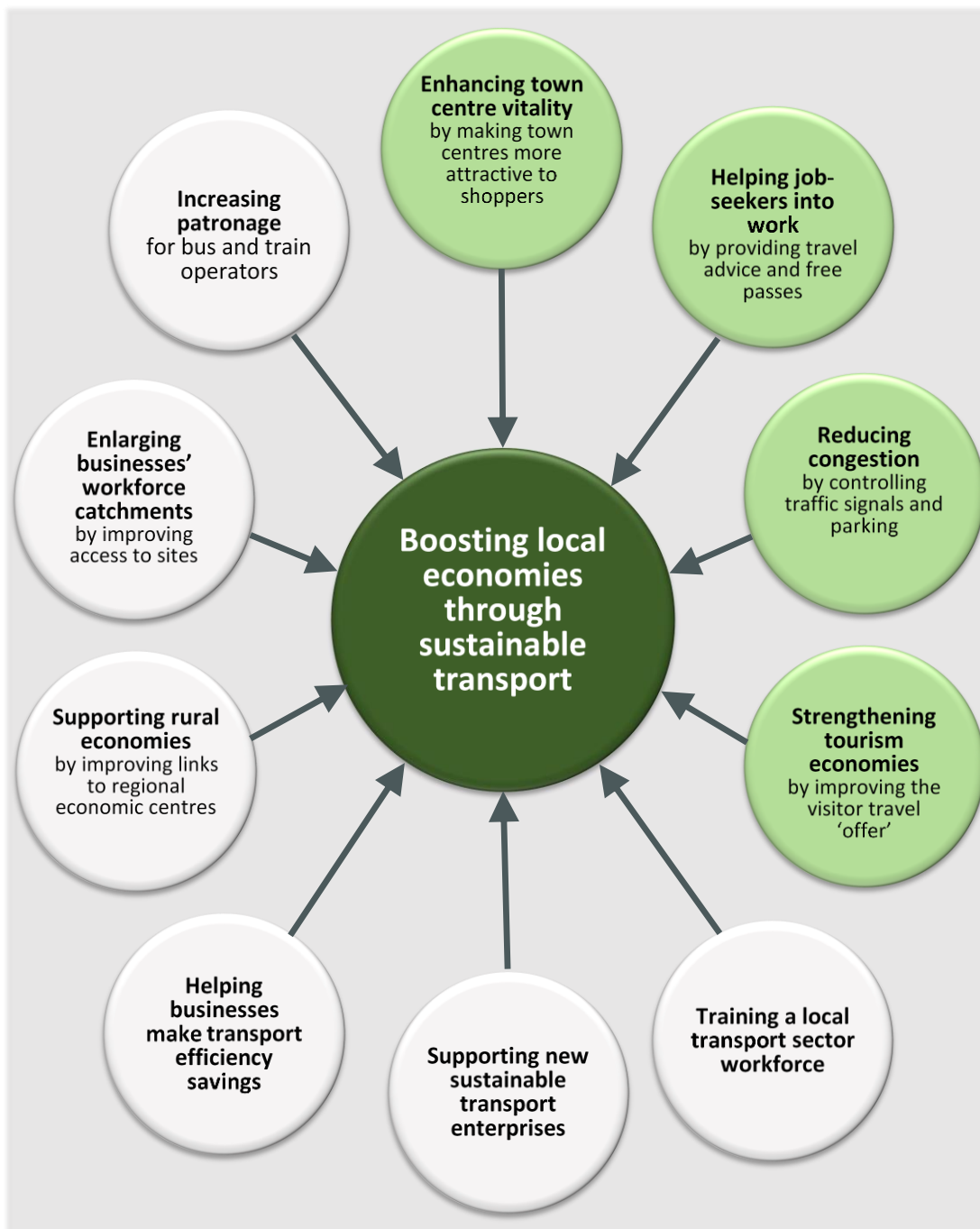
<sup>23</sup> Evidence about the types of activities undertaken to support local economies was available both for the Large and Small Projects. Interventions are described in the *LSTF Annual Reports*, and there is evidence of outcomes in the *Case Studies* and the *Meta-analysis*.

<sup>24</sup> "Town centre vitality" refers, broadly speaking, to how busy a town centre is.

savings; improved links between rural areas and regional economic centres; enlarged businesses' workforce catchment areas by improving sustainable transport access to hard-to-reach sites; and aimed to increase patronage for bus and train operators.

- 7.3 Evidence on the impacts of measures to enhance the local economy is difficult to gather and not always clear in its implications. This is due, firstly, to the fact that there is no single outcome measure that comprehensively captures the impacts of the various approaches taken. Secondly, monitoring activities on which the evaluation has been based have generally taken place no more than six months after the completion of the schemes, while most economic impacts take longer to develop.

Figure 6: LSTF and economic impacts



## Enhancing town centre vitality

- 7.4 Several Projects aimed to boost the town centre economy by improving access by foot, cycle and bus<sup>25</sup>. The evaluation of two such projects found early indications that the initiatives had been **beneficial for accessibility** by sustainable travel modes:

<sup>25</sup> The projects were Portsmouth, Telford, Redhill, Cheltenham and Gloucester, see Meta-evaluation. Telford and Redhill featured in the *Town Centres Case Study*, which provides some of the evidence cited here.

- The perceived accessibility of the town centre by sustainable modes of travel increased and, where improvements were on a larger scale, the attractiveness of active travel also increased.
- While there was no evidence of an overall shift towards sustainable modes, the proportion of people describing access by sustainable modes as 'easy' increased by 8-12pp for access by foot and, in one area, by 17pp for cycle access.
- There were net increases in frequency of use of sustainable modes of travel among users of these modes, particularly for walking, with survey evidence suggesting this change is attributable to LSTF investment.

7.5 The evaluation also found **indications of economic benefit:**

- Over half of the residents thought that the improvements had helped to promote the town centre as a destination, with indications of more trips into the centre in one town with larger investments.
- Retailers believed that LSTF investment had been positive for retail.
- In one area, retailers believed the LSTF investment helped to drive retail confidence and growth, enabled retail and leisure development, and contributed to increased inward investment. In another area, retailers felt that the retail economy would have been worse without the LSTF investment, and that the investment would, over time, encourage developers to invest in the town.



Telford Box Road: before and after



In Telford, an LSTF public realm scheme reconfigured the Box Road, a high-speed, three-lane, one-way circulatory system surrounding and constraining the pedestrianised retail area. Under the scheme, the shopping area was connected to the site of a planned major development including a cinema, hotel, bars and restaurants and other leisure attractions. Three sides of the Box Road were modified for two-way traffic, with a design to encourage lower speeds. Twelve pedestrian crossings were installed, and new cycle-ways built. The fourth side of the Box Road was modified to be a shared space for pedestrians, cyclists, buses and general traffic, with a 20mph speed limit.

## Helping job-seekers into work

- 7.6 A quarter of LSTF Projects included activities to help unemployed people get to interviews, training and new jobs. In the 12 Large Projects, the number of job-seekers helped across the whole funding period was equivalent to 10% of the number of unemployed adults of working age in those areas during 2013/14 and 2014/15 combined.
- 7.7 Evidence suggests that these activities:

- **enabled unemployed people to find work:** in five Large Projects<sup>26</sup>, between 20% and 43% of job-seekers who were offered travel assistance (free or discounted public transport tickets or cycle vouchers) subsequently succeeded in gaining work. Around 80% of these people felt, according to surveys in two areas<sup>27</sup>, that assistance had been important in enabling them to get a job.
- **helped to broaden travel horizons.** 83% of people receiving travel training in one Large Project area<sup>28</sup> felt more confident in planning their journeys and learning different ways to travel. More than half of young people with special educational needs and disabilities who undertook independent travel training in another area<sup>29</sup> gained full or partial independence.
- **allowed people to accept job offers** that they would not otherwise have been able to take up. In a number of LSTF areas, loans of a moped or bicycle were offered for that purpose, and community transport services established to link to major employment sites. 47% of workers using such a service in one area<sup>30</sup> indicated that they would not have been able to get to work without the service.

7.8 There was some evidence that interventions had long-term benefits<sup>31</sup>. In two areas, **around three quarters of people who had received free travel** for a limited time after starting employment reported that they **were still regularly using public transport** or buying a season ticket. In one area 37% reported that they used public transport more. Finally, of job-seekers who had a received a bike **nearly 6 in 10 reported they were now cycling**, whereas previously they were not.

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<sup>26</sup> BDRS, Bournemouth, Merseyside, Nottingham and Solent

<sup>27</sup> Nottingham and Bournemouth

<sup>28</sup> BDRS

<sup>29</sup> Hertfordshire

<sup>30</sup> Transport for Greater Manchester project area

<sup>31</sup> Note that the survey evidence on which these findings are based does not enable construction of a 'counterfactual' i.e. it was not possible to compare effects amongst job-seekers who *had* received support with effects among a comparable group of job-seekers who *had not* received support.





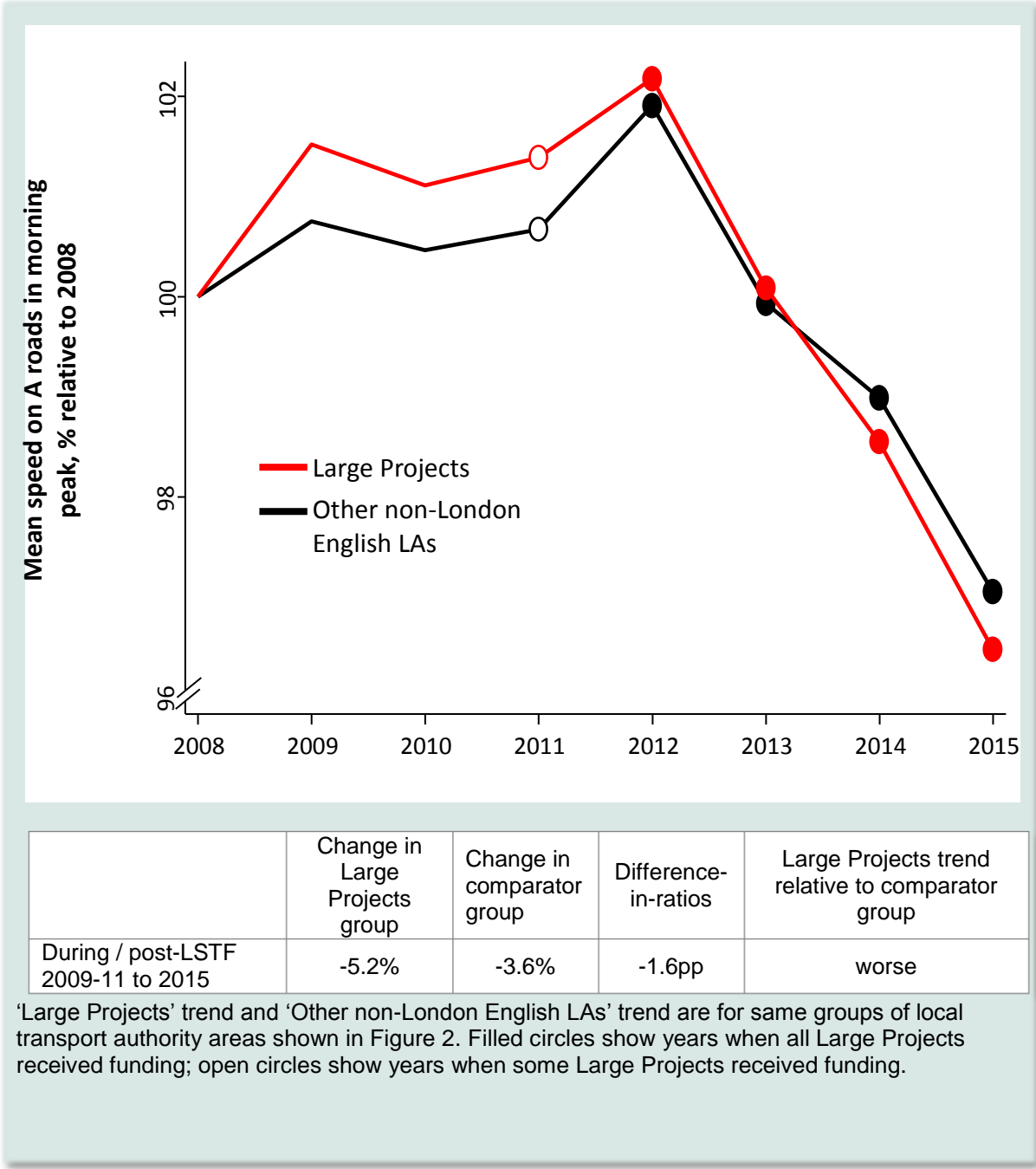
## Reducing congestion

- 7.9 Despite many Projects including measures to improve traffic flow<sup>32</sup>, the LSTF investment **did not lead to the sought reduction in congestion**. Rush-hour congestion<sup>33</sup> at the local authority level for the Large Projects as a whole had slightly worsened relative to the comparator group (speeds fell by 5.2% in the Large Project areas and by 3.6% in the comparator group, i.e. a 1.6pp reduction in the Large Project areas). The lack of a positive result was in part due to increases in population and jobs in some Large Project local authority areas.
- 7.10 There is evidence that **individual interventions reduced congestion problems** for bus users. In four Large Projects, bus punctuality or bus journey times improved either at a network-wide level or along some corridors, and measures funded through LSTF seem likely to have contributed to this.
- 7.11 Figure 7 shows the development of rush-hour speeds between 2008 and 2015 for both Large Projects and the comparator group. The comparator group showed a slight increase in rush-hour speeds from 2010 to 2012, followed by a fall in rush-hour speeds from 2012 to 2015. The Large Projects showed broadly the same pattern, but with a slightly larger relative worsening of congestion.

<sup>32</sup> These included traffic signal management to optimise vehicle flow, parking enforcement, bus priority measures, and variable message signs to alert drivers to congestion ahead and parking availability.

<sup>33</sup> Measured as average vehicle speeds in the morning peak on locally-managed 'A' roads.

**Figure 7: Indexed change in rush-hour speeds in the Large Projects and the comparator group**



7.12 While rush-hour speeds for the Large Projects worsened relative to the comparator group, 24-hour traffic volumes improved, relatively. This means that either peak-hour traffic volumes increased while off-peak traffic volumes reduced by more; or that road capacity had been reduced. Discussions with the Large Projects local authorities indicate that both factors related and unrelated to LSTF may have been responsible for a reduction in road capacity (e.g. temporary disruptions due to utility roadworks, major transport schemes or LSTF schemes; permanent reallocation of road or junction capacity). In some locations, new development for housing or employment uses caused localised increases in congestion, and some Large Project officers judged that LSTF interventions had lessened the adverse impact of these developments.

## Strengthening tourism economies in rural areas

- 7.13 Projects in visitor areas made tourism businesses easier to reach by sustainable modes of travel or helped them develop their sustainable travel leisure offer<sup>34</sup>. In three National Parks<sup>35</sup>, these projects led to a 3.7% increase in visitor bus journeys (+20,353 journeys), with services receiving funding showing more positive patronage trends than those which did not. Between 2012 and 2014, cycle counts showed an increase of 24% and 93% in two parks, respectively, and a 24% increase in cycle hire in one. Over the same period, station usage (for all purposes) increased in two areas, but fell in a third.
- 7.14 Businesses engaged in the LSTF programme outperformed businesses that were not, although the difference cannot be attributed to the LSTF. Two-thirds (66%) of engaged businesses reported an increase in business volume since 2012 (including 11% reporting a significant increase), compared to 47% and (1%).
- 7.15 Finally, the opportunity to try cycling or use the bus whilst on holiday may have some effect on visitors' future behaviour. Almost all respondents (94%) gave their experience of using a sustainable travel mode a positive rating. Perhaps as a result, 61% of respondents said they would definitely be more likely to travel that way again on holiday, and 36% said they would definitely be more likely to use their travel choice when back home.

## Other local economic impacts

7.16 Other economic impacts identified included:

- **Transport sector training, work experience and employment:** Two Projects ran initiatives that offered training, work experience and support to job-seekers, to equip them to work in local transport industries. In Merseyside, bespoke training courses developed with employers prepared participants for employment in the bus, rail and maritime industries. Over the course of the LSTF programme, Merseylearn helped 247 people into transport employment.

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<sup>34</sup> Relevant investments covered buses (new and existing services, integrated tickets, bike bus), cycling (improving and extending existing routes; parking, signing and information; and increasing hire availability), pay-as-you-drive cars, rail hubs (enhancing stations as hubs for sustainable transport), and marketing and branding (advising tourism providers on promoting sustainable travel information, promoting access by rail and coach, co-ordinating branding and developing promotional films).

<sup>35</sup> South Downs, New Forest and Lake District. These formed part of the *Visitor Travel Case Study*.



Derby's bike recycling scheme worked with a prison, so nine inmates achieved City & Guilds qualifications in cycle mechanics.

- **New enterprises:** Some Projects supported development of new sustainable transport enterprises. Some were set up as social enterprises and others on a commercial basis. They included bike hubs providing cycle maintenance and secure parking, car clubs, Park & Sail services and Wheels to Work. In East Sussex, 'Wheels 2 Work' community interest company generated income from its motorcycle dealership and workshop that supported its Wheels to Work scheme.
- **Transport efficiency savings for businesses:** Some Projects helped businesses reduce the operating costs of fleet vehicles through more efficient practices and new technology. Initiatives included accreditation for good vehicle maintenance, freight consolidation centres, eco-driver training and electric car and bike pool schemes for business travel. For example, Thurrock facilitated a 114-member Freight Quality Partnership, certified 3,000 vehicles through its fleet efficiency scheme and trained 117 drivers in safe and fuel-efficient driving techniques.
- **Stronger rural economies:** Some Projects delivered sustainable transport schemes that made it easier for rural residents to reach local or regional economic centres. For example, in the Yorkshire Dales a £1 flat fare gave young people affordable access to jobs, shopping and entertainment in Northallerton, Ripon and Skipton.
- **Larger workforce catchments for businesses:** New bus services to peripheral employment sites meant that businesses at those sites were able to recruit from a larger pool of employees. For example, Transport for Greater Manchester's four Local Link services enabled employees to reach job locations that would otherwise have been inaccessible to them. A survey of users found that 75% agreed or strongly agreed that Local Link allowed them to look for work in more

places. Interviews with senior managers at businesses, undertaken as part of the Strategic Employment Sites and Business Parks Case Study, found a perception that commuter travel was important to business performance. Employers experiencing congestion, parking limits, and recruitment difficulties, saw greater need for investment in sustainable transport.

- **Increased patronage for bus and train operators:** Most Projects worked with bus operators and train operating companies to increase patronage. For example, Wiltshire Small Project worked with First Great Western to quadruple train services and improve stations on the TransWilts rail line, increasing patronage from 10,000 per year before LSTF to 183,400 in 2014.

## Value for money of LSTF

7.17 The LSTF programme has been **very high value for money**. The best estimate<sup>36</sup> ex post benefit-cost ratio (BCR) was 5.2 – 6.1, based on the 11 Large Projects for which assessment was possible. This was similar to the ex-ante BCR of 5.2. This suggests that the programme was successful in achieving its expected outcome, so far as value-for-money was concerned.

7.18 The benefits stemmed from:

- Journey quality benefits (49%). These resulted from interventions like simplified (smartcard) ticketing, real-time passenger information, and new cycle infrastructure.
- Lower traffic levels (38%), mainly comprising decongestion benefits<sup>37</sup>, fewer accidents and lower greenhouse gas emissions, offset by drops in indirect taxation.
- Health benefits (8%) due to increased cycling and increased walking as part of bus trips.

7.19 The cost of the programme per car km removed from the network was estimated to be 4.8p per car km. This cost divides the total costs of programmes that aim to reduce the amount of people's driving, by the number of kilometres driven less. The estimated cost was broadly comparable with estimates from previous sustainable transport investment programmes.

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<sup>36</sup> Due to a lack of adequate data, the BCRs did not include benefits of public realm enhancements; health benefits from increased walking (other than that associated with bus travel); and benefits associated with rail and station enhancements.

<sup>37</sup> These benefits relate to congestion-relief that would have occurred if nothing except traffic levels had changed. However, the benefit might be taken in other ways: e.g. by reallocating road capacity to longer pedestrian phases at traffic signals. If this happened, 'on the ground' congestion (as measured by average traffic speeds) might stay the same but there would still be a 'decongestion benefit'.

## 8. Carbon impacts of LSTF

Transport-related carbon dioxide emissions per capita in Large Project areas fell by 2.2pp relative to the comparator group. In absolute terms they fell by 1.9 percentage points relative to the comparator area.

This and other evidence suggested LSTF was a significant factor in reducing carbon dioxide emissions, reducing emissions from transport by an estimated 1.5-3% more than would otherwise have been the case.

- 8.1 One principal LSTF objective was to reduce carbon emissions. This appears to have been achieved. According to Department for Energy and Climate Change (DECC) estimates, emissions<sup>38</sup> per person fell by 6.9% in Large Project areas, against 4.7% in the comparator group, a statistically significant difference of -2.2pp. Falls relative to the comparator group were seen in all 12 Large Project areas.
- 8.2 Other evidence supports the view that LSTF areas saw a larger fall than comparable areas. According to the Carbon and Congestion Case Study,<sup>39</sup> a group of five LSTF local authority areas performed better than a group of control areas: carbon dioxide emissions per person from land-based travel were estimated to fall slightly in LSTF areas (-20kg/person) and rise slightly in control areas (+30kg)<sup>40</sup>. This suggests an impact of 50kg/person per year, equivalent to 3% of 2013 emission levels in the five LSTF areas.
- 8.3 Two further pieces of evidence give us confidence that the LSTF was a factor in reducing these carbon emissions. As Figure 8 shows, the difference in estimated carbon emissions between Large Projects and the comparator group was greater after LSTF than before LSTF.<sup>41</sup> Moreover, estimates from individual projects suggested annual emissions savings of 1000-50000 tonnes of carbon dioxide per Large Project, equivalent to between 0.03% and 1.6% of total carbon dioxide emissions from transport in the respective local authorities.<sup>42</sup> Since estimates of

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<sup>38</sup> Transport-related carbon emissions under the scope of local authority influence.

<sup>39</sup> The *Carbon and Congestion Case Study* used pre- and post-intervention panel survey data in 2013 and 2014 to assess changes in transport-related carbon emissions.

<sup>40</sup> However, emissions performance varied: for three treatment areas, emissions performance was better than in their respective control areas, and for two treatment areas, it was worse.

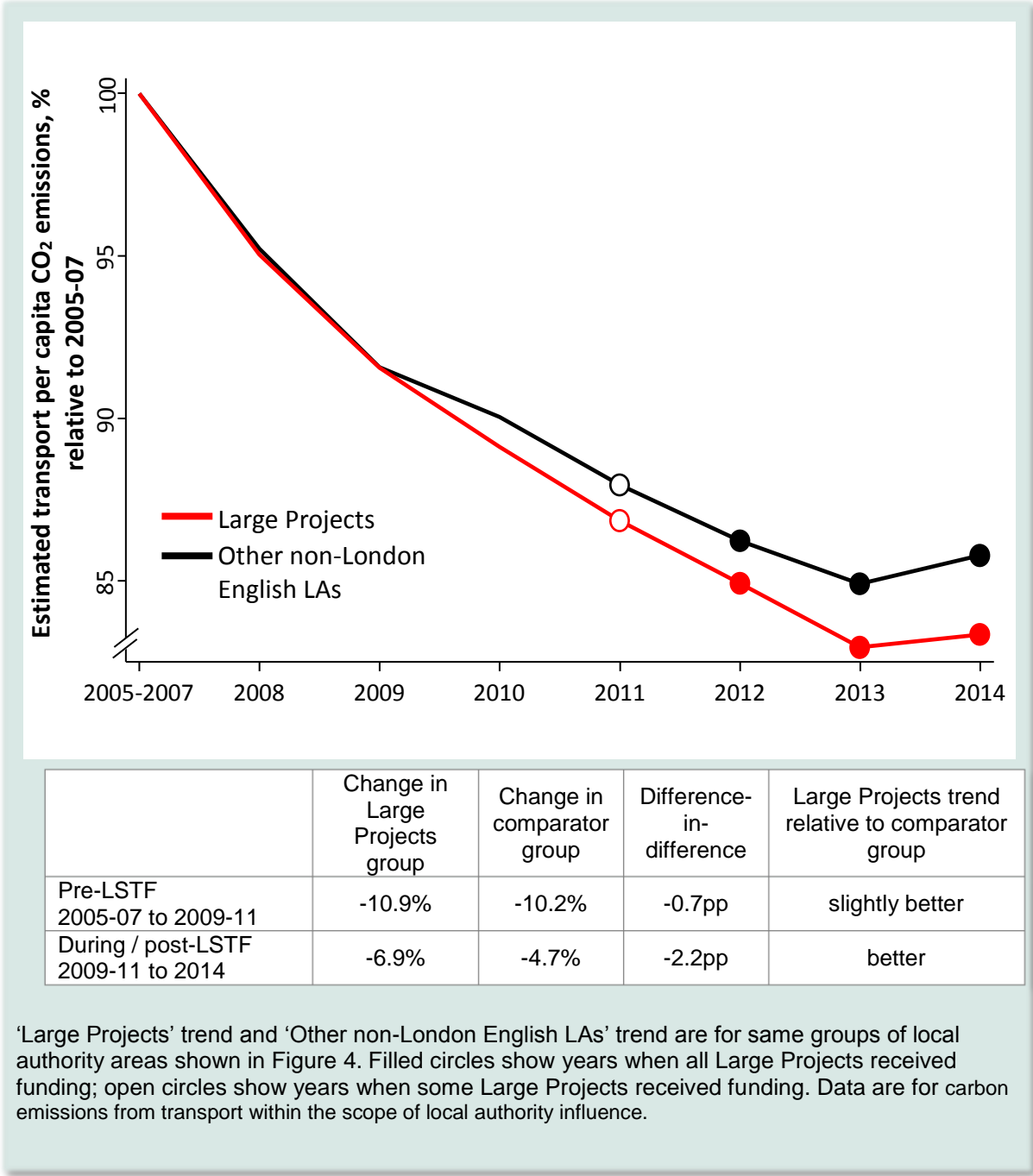
<sup>41</sup> The difference between the Large Projects trend and the comparator group trend was more marked after 2009-11 than it was before 2009-11. In the period before LSTF, from 2005-07 to 2009-11, per capita carbon emissions in the Large Projects group fell by 10.9%, while in the comparator group they fell by 10.2% (a difference of -0.7pp), i.e. more than three times smaller than the -2.2pp difference observed after 2009-11).

<sup>42</sup> Eight Large Projects made estimates of the carbon impacts of individual schemes including car sharing; public transport substituting for car journeys; promotion of cycling; workplace travel planning; personalised travel planning; ECO Stars fleet efficiency scheme; eco-driver training; promotion of ultra-low emission vehicles; and the development of a freight consolidation centre. These used a range of assumptions, not always fully described, and unlikely to be consistent with one another. The schemes for which estimates of carbon impacts had been made represented an incomplete and unknown proportion of total LSTF investment, and it would therefore be

impact were only made for a proportion of schemes, total LSTF savings are likely to be at the top end of or higher than this range.

8.4 Taking all these sources of evidence together, they suggest that LSTF projects may have reduced carbon emissions from transport by around 1.5 – 3% more than would otherwise have been the case, during a period when these emissions fell by around 7%.

**Figure 8: Indexed change in per capita CO2 emissions in the Large Projects and comparator group**



expected that overall carbon savings would be greater than these figures. This is particularly the case for the Large Projects reporting figures at the lower end of the range, where estimations were typically only for minor interventions that formed a small part of the overall activity.

## 9. Road safety impacts

Road safety was a secondary objective of LSTF, but not a main focus for any Projects. While individual projects showed some evidence of road safety improvements, there was no evidence of overall improvements in the Large Projects areas.

- 9.1 Road safety statistics showed little evidence of improvements due to LSTF,<sup>43</sup> with casualty rates in Large Project areas closely following the trend of casualty rates in the comparator group.
- 9.2 There was some evidence that individual projects improved road safety. For example, in Merseyside, the number of collisions fell by 16% in 20mph zones. In Nottingham, it was estimated that widespread 20mph zones had resulted in 28 fewer serious casualties over a time period just greater than two years.<sup>44</sup>
- 9.3 Although road safety was not a major focus for any Projects, many local authorities did put some effort into road safety training, and this is likely to have future benefits. Across all the LSTF Projects, 69,400 children received pedestrian road safety training and 26,100 received scooter training funded by LSTF. Although Bikeability cycle training is separately funded, over 1.1 million children nationwide received Level 1 or Level 2 training during the LSTF period.

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<sup>43</sup> According to STATS19 data, the trend in the number of people killed and seriously injured (KSI) per capita in the Large Projects areas closely tracked the trend in the comparator group, both before and during the LSTF period. This was also true when KSI was split according to mode of travel, although there was some evidence of more favourable trends for cycling: that is, cyclist KSI casualties *per capita* remained approximately constant in the group of Large Projects between 2010-2011 and 2014-2015, whereas they rose in the comparator group.

<sup>44</sup> In the Liverpool and Sefton 20mph zones, the number of collisions fell by 16% between a baseline and 2014. In Nottingham, it was estimated that widespread 20mph zones had resulted in 28 fewer serious casualties and four more slight casualties over a period of just over two years (based on monitoring of the initial 20 mph zone).