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Cycling & Walking Evidence Review

Outputs and outcomes
from a portfolio of
projects

Full Report (2004 – 2019)

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Date: October 2019

Prepared for: Department for Transport

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Executive summary

Over the last decade the Department for Transport (DfT), along with other Government departments, local authorities and other organisations, has invested extensively in active travel interventions. According to the Cycling and Walking Investment Strategy (2017), the ambition is to make ‘cycling and walking the natural choices for short journeys or as part of a longer journey’ (DfT 2017:1).

Many active travel interventions have been evaluated in terms of the impact they have had, including the number of additional cycling and walking trips generated, more sustainable travel on the school run, and so on. This review summarises evidence on outputs and outcomes from a portfolio of these projects, based on existing evaluation studies, in order to inform DfT’s reporting to Parliament on progress under the Cycling and Walking Investment Strategy in 2019.

The review is guided by the following research questions:

RQ1. What types of intervention have been funded to encourage greater levels of cycling and walking, and what are the key features of these interventions – including outputs, location, duration and cost?

RQ2. What were the outcomes of these interventions?

To address these research questions, key data on outputs and outcomes have been extracted from a portfolio of 19 projects implemented around the UK, as identified by DfT. Detailed research sub-questions and the full project portfolio are outlined in Section 1.1.

Overview of project portfolio

The portfolio includes nine large DfT projects; seven smaller projects funded by DfT and other government departments and bodies; and three other schemes¹. Ten of these projects are complete, and nine are ongoing as at October 2019. The earliest project start date was 2004 (Sustainable Travel Towns), with 14 projects implemented from 2011 onwards.

Studies in the review present cost data in a variety of ways, including project-level costs, scheme-level costs within projects, and per capita costs. As a result, it has not been possible to determine total spending across projects. A summary of available project-level cost data is provided in this report (see Tables 1a – 1c), while more detailed project-level cost data (where available) are presented in the Excel dataset accompanying the report. See **Addendum (2016-19)** for a summary of outputs and outcomes from projects implemented in 2016-19.

Intervention outputs

Following the definition used in the Everybody Active, Every Day framework, for the purposes of this review intervention outputs are understood as ‘the direct products of interventions’, such as segregated cycle routes constructed, individuals participating in training, and so on (Ahmad & Rayment 2018: 42). Of the 18 portfolio projects reporting outputs data, nine report data on cycling outputs; six on walking outputs; three on traffic management outputs; two on public transport outputs; six on multi-modal² outputs; six on education-related outputs; four on

¹ Classifications by DfT.

² Outputs across more than one domain; i.e. crossings for cyclists and pedestrians, shared use routes, etc.

employment-related outputs; and five on outputs related to promotion or awareness campaigns.

Table i presents output totals across the project portfolio. These totals were calculated by summing output data for each project, and then summing totals across all projects in the portfolio. It is important to note that many studies did not provide quantitative information on outputs; **output totals in Table i and Figure 1 therefore reflect reported output totals from available data.** Further details on missing outputs data for each project are available in Tables 3 – 10 in Section 2.1, and the Excel dataset accompanying this report.

Table i: Outputs from a portfolio of projects, 2004 – 2019 ³

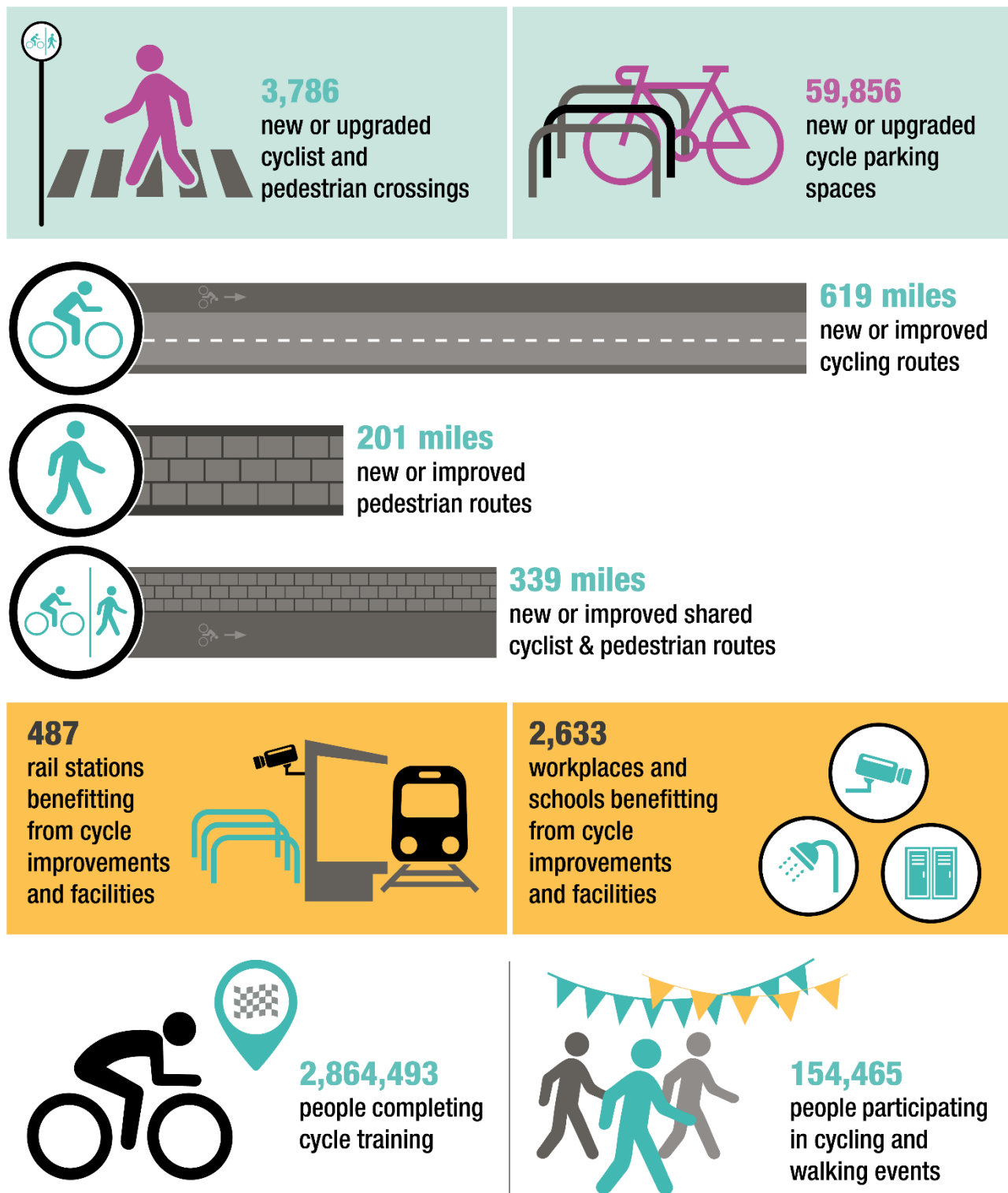
Output	Total
CYCLING AND WALKING OUTPUTS	
New segregated cycle routes	155.3 miles
New cycle paths and routes (unsegregated) ⁴	463.9 miles
New footpaths / walking routes	200.7 miles
New shared routes (on and off road) for cyclists and pedestrians	202.2 miles
Resurfacing / surfacing improvements for cyclists and pedestrians	136.7 miles
TOTAL: new or improved cycle, pedestrian and shared-use routes	1,158.8 miles
Individuals participating in cycling events	148,367 people
Individuals participating in walking events	6,098 people
TOTAL: participation in cycling and walking events	154,465 people
Individuals completing cycle training	2,864,493 people
Improved signage for cyclists and pedestrians	1,232 signs / panels
New and upgraded cyclist and pedestrian crossings	3,786 crossings
New and upgraded cycle parking spaces	59,856 spaces
TRAFFIC MANAGEMENT OUTPUTS	
Road junction improvements (for improved safety)	27 junctions
New speed zone signage	59.7 miles
New speed zones	21.4 miles ²
PUBLIC TRANSPORT OUTPUTS	
Improved cycle facilities, sustainable travel improvements at train stations	487 train stations
Bus stop improvements	3,800 bus stops
Personalised Travel Planning	390,000 households
EDUCATION AND EMPLOYMENT-RELATED OUTPUTS	
Schools and workplaces benefitting from cycle improvements & facilities	2,789 workplaces and schools
Jobseekers receiving support to access work	200,672 jobseekers
BEHAVIOUR CHANGE OUTPUTS	
Individuals engaged in behaviour change events and campaigns	1,926,574 people

³ Totals presented in this table were calculated by summing the total for each output within projects, and then summing these totals across all projects in the portfolio. Where projects did not report quantitative outputs data, these projects have not been included in the presented totals.

⁴ In cases where sources do not state whether cycle routes are segregated or unsegregated, it has been assumed that they are unsegregated.

Figure 1: Outputs from a portfolio of projects, 2004 - 2019

Outputs from a portfolio of projects, 2004 – 2019



Intervention outcomes

The definition of intervention outcomes in this review also follows the Everybody Active, Every Day framework: ‘the overall results’ of interventions, such as the change in cycling levels and changes in distance travelled using public transport (Ahmad & Rayment 2018: 42). Of 14 portfolio projects reporting outputs data, 11 report data on cycling outcomes; seven on walking outcomes; five on traffic use / management outcomes; two on public transport outcomes; one on multi-modal outcomes; two on employment-related outcomes; three on environmental outcomes; two on health and well-being outcomes; and three on behaviour change outcomes.

Table ii presents summaries of outcomes across all portfolio projects for which formal evaluation data are available, while Figure 2 presents outcomes from a selection of these projects. Since evaluation methodologies, sampling approaches and time periods varied significantly across (and sometimes within) projects, it has not been possible to present ‘total’ change in outcomes across the portfolio. Instead, we present changes according to individual projects. The figures presented in Table ii represent changes over the intervention period for each project; see Tables 1a – 1c for more details of the timescale for each intervention. Where outcomes were evaluated across multiple locations for individual projects, outcomes are presented as a range (i.e. from the lowest to highest change recorded). Figures represent changes in intervention areas, with the exception of Bikeability, where significant differences between intervention and control schools are presented. For comparisons between interventions and ‘matched’ areas and/or national/city-wide trends, see Tables 12 – 20 in Section 2.2, and the Excel dataset accompanying this report.

Overall, key findings from evaluations of portfolio projects indicate:

- An increase in the number and length of cycling and walking trips over intervention periods in ten projects;
- Reduced car use over intervention periods in four projects, and lowered carbon emissions in two projects;
- More children cycling to school regularly, with increased knowledge of cycling safety, as a result of two projects⁵;
- More people cycling to work over the intervention period in one project;
- Mixed evidence on changes in public transport use over intervention periods in two projects.

Please note that not all evaluations provide estimates of the effect of portfolio projects on the above outcomes. See Tables ii and 12 – 20 for comprehensive reporting of outcomes for all projects in the portfolio.

⁵ Based on statistically significant differences between intervention and control groups in the Bikeability evaluation, and between intervention and matched towns in the evaluation of Cycle Demonstration Towns and Cycling City & Towns.

Table ii: Summary of outcomes from a portfolio of projects, 2004 – 2019 ⁶

Project		Summary of change over intervention period (in intervention areas)	
CYCLING OUTCOMES			
Changes in cycling levels			
Bikeability	Pupils in Bikeability schools are more likely to have: <ul style="list-style-type: none"> • Cycled in the past 7 days (45% intervention, 37% control) • Cycled on roads in the past 7 days (65% intervention, 56% control) • Cycled since the start of term (34% intervention, 22% control) • Cycled with adults / older siblings at least 4 days per week since the start of term (7% intervention, 3% control) 		
Big Bike Revival	7,334 non-regular cyclists increasing their cycling activity		
Cycle City Ambition Programme	Between +12% and +69% in cycle traffic		
Cycle Demonstration Towns and Cycling City & Towns	Between +106% and +162% in cycle traffic		
Linking Communities	+31% in cycling trips		
	+360% in cycling trips among adults over 65		
	+43% in cycling trips among children under 16		
Local Sustainable Transport Fund	Between +13% and +21% in mean number of days cycled in the past month		
	Between +11% and +34% in cycle traffic		
Sustainable Travel Towns	Between +26% and +30% in number of cycling trips by residents		
	Between +28% and +32% in distance cycled per resident		
The National STARS School Travel Awards	+59% in average cycling levels		
TfL Segregated Cycling Infrastructure	+7.2% in daily average kilometres cycled in congestion charging zone		
Cycle to Work Scheme	+18 miles in distance cycled by participants after joining the scheme		
Changes in perceptions, knowledge of cycling			
Bikeability	Pupils in Bikeability schools are more likely to: <ul style="list-style-type: none"> • Have been allowed to cycle on roads (70% intervention, 58% control) • Display knowledge of cycling safety (22% intervention, 7% control) 		

⁶ Figures represent changes in intervention areas, with the exception of Bikeability, where statistically significant differences between intervention and control schools are presented. Where outcomes were evaluated across multiple locations for individual projects, outcomes are presented as a range (i.e. from the lowest to highest change recorded).

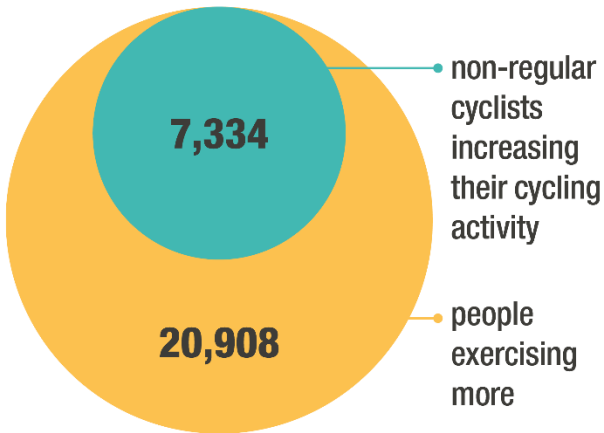
Project	Summary of change over intervention period <i>(in intervention areas)</i>
Cycle City Ambition Programme	Between +8% and +10% in people agreeing safety influenced their decision to cycle
	Between +7% and +35% in people agreeing convenience influenced their decision to cycle
	+10% in people agreeing quality of surroundings influenced their decision to cycle
Linking Communities	+44% in cyclists stating a new route had helped them access a workplace
	+76% in cyclists stating they used a new route 2-5 times a week
WALKING OUTCOMES	
Changes in walking levels	
Linking Communities	-4% in walking trips
	+306% in walking trips among adults over 65
	+58% in walking trips among children under 16
Local Sustainable Transport Fund	No significant increase in walking trips lasting 10 minutes or more (+2 days intervention, +2 days comparison)
Sustainable Travel Towns	Between +10% to and 13% in number of walking trips by residents
	Between +18% and 27% in distance walked per resident
The National STARS School Travel Awards	+11.6% in average walking levels
Walk to School Outreach	+50% in number of walking trips
Walking Cities	Between +45 and +73 minutes walked per week
ECONOMIC, SOCIAL AND OTHER OUTCOMES	
Changes in vehicle traffic	
Local Sustainable Travel Fund	-2.6% per capita car traffic
	+1.2% absolute traffic
Sustainable Travel Towns	-9% in car trips by residents
	Between -5% and -7% in distance travelled by car per resident
	Between -7% and -8% traffic count data
	Between -9% and -17% in car use for journeys to school
The National STARS School Travel Awards	-27% in average car usage levels
Paths for Communities	-10,300 car journeys

Project	Summary of change over intervention period <i>(in intervention areas)</i>
Changes in public transport use	
Local Sustainable Transport Fund	-0.3% in absolute bus journeys
	-3.3% in per capita bus journeys
Sustainable Travel Towns	Between +10% and +22% in number of bus trips by residents
	Between +30% and +41% in distance travelled by bus per resident
Changes in travel for work	
Linking Communities	+34% points in cyclists stating the scheme helped them to access workplaces
	+31% points in cyclists stating they were using the scheme to get to work
Changes in emissions	
Linking Communities	-52 tonnes of carbon dioxide emissions per year
Sustainable Travel Towns	-17,510 tonnes of carbon dioxide emissions per year

Figure 2: Outcomes from selected portfolio projects, 2004 – 2019

Outcomes from selected portfolio projects, 2004 – 2019

Big Bike Revival

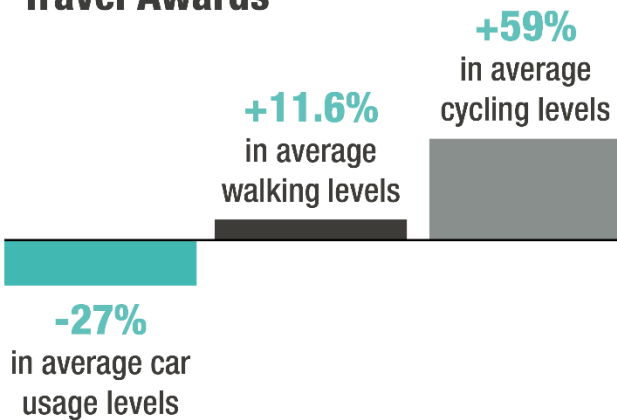


Walk to School Outreach

+50% in number of walking trips to school



The National STARS School Travel Awards



Cycle City Ambition Programme

Participants are more likely to cycle...



+10%
... due to quality of surroundings



+8%
... due to safety

City-wide cycle traffic increased by between **+12% and +69%**



An estimated **440,000** car trips were replaced by cycle trips due to CCA-funded infrastructure

Bikeability

Pupils in Bikeability schools are more likely to...

■ intervention ■ control

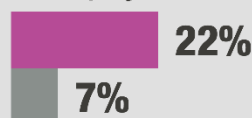
... cycle more often



... be given permission to cycle on roads



... display knowledge of cycling safety



1 Introduction

1.1 Overview

The Department for Transport (DfT)'s Cycling and Walking Investment Strategy (CWIS, 2017) sets out the government's plans for cycling and walking, with an ambition to make 'cycling and walking the natural choices for short journeys or as part of a longer journey' (DfT 2017:1). Over the last decade DfT, other Government departments, local authorities and other organisations have invested extensively in active travel interventions. Many of these interventions have been evaluated in terms of the impact they have had, including the number of additional cycling and walking trips generated, more sustainable travel on the school run, and so on.

This review summarises evidence on outputs and outcomes from these interventions, based on existing evaluation studies, in order to inform DfT's reporting to Parliament on progress under the CWIS in 2019. Following the definitions outlined in the Everybody Active, Every Day framework, for the purposes of this review outputs are understood as 'the direct products of interventions', such as segregated cycle routes constructed, individuals participating in training, and so on. Outcomes are understood as 'the overall results' of interventions, such as change in cycling levels, change in walking levels, etc. (Ahmad & Rayment 2018: 42).

The review has been guided by the following research questions:

- RQ1.** What types of intervention have been funded to encourage greater levels of cycling and walking, and what are the key features of these interventions – including outputs, location, duration and cost?
- RQ2.** What were the outcomes of these interventions? Including (but not limited to):
- Change in levels of cycling and walking;
 - Change in vehicle traffic;
 - Change in perception of safety;
 - Change in health and wellbeing;
 - Change in economic and social outcomes;
 - Other outcomes.

To address these research questions, key data on outputs and outcomes have been extracted from studies on 19 projects identified by DfT. The portfolio includes nine large DfT projects; seven smaller projects funded by DfT and other government departments and bodies; and three other schemes¹:

Large DfT projects:

- Access Fund²
- Bikeability
- Cycle City Ambition Programme

¹ Classifications by DfT.

² Outputs data only. The Access Fund is an ongoing intervention; information on outcomes are available from monitoring and evaluation data (Access Fund Outputs Survey 2018-19), but these data are not systematic; clear comparisons over time/location are not included, or, where present, the nature of these comparisons are unclear.

-
- Cycle Demonstration Towns and Cycling City and Towns ³
 - Cycle Rail Fund ⁴
 - Cycling and Accessibility ⁵
 - Linking Communities
 - Local Sustainable Transport Fund ⁶
 - Sustainable Travel Towns.

Smaller DfT and other projects:

- The Big Bike Revival ⁷
- The National STARS School Travel Awards
- Paths for Communities (P4C)
- TfL Segregated Cycling Infrastructure
- TfL Street Appeal
- Walk to School Outreach
- Walking Cities.

Other schemes:

- Cycle to Work Scheme
- Everybody Active, Every Day ⁸
- Healthy New Towns ⁹.

In all report tables and the Excel dataset accompanying this report, project data are presented in the above order – i.e., alphabetically within project type.

In the following sections, we briefly summarise our methodology (1.2), before setting out the findings of the review with narrative summaries and more detailed tables presenting data on outputs (2.1) and outcomes (2.2) from the above projects.

See [Addendum \(2016-19\)](#) for a summary of outputs and outcomes from projects implemented in 2016-19.

³ Outcomes data only. No data on outputs for Cycle Demonstration Towns or Cycling City and Towns was found in available sources, other than high-level cost data which are included in Table 1.

⁴ Outputs data only. The Cycle Rail Fund is an ongoing intervention, and no evaluations have been conducted.

⁵ Outputs data only. Cycling and Accessibility is an ongoing intervention, and no evaluations have been conducted.

⁶ Outputs data are reported for all 96 projects, unless otherwise stated. Outcomes data are reported for 12 Large Projects, as these are the only LSTF projects which have been systematically evaluated.

⁷ Some outcomes data are available for Big Bike Revival; however, information on evaluation methodology and timeframes are not provided in source documents.

⁸ Outputs data only. Everybody Active, Every Day (EAED) is a national physical activity framework; successful implementation of this framework depends on its aims being shared by relevant national and local stakeholders, and integrated into national and local policy delivery (Ahmad & Rayment 2018). As such, data on quantified outcomes are not available for EAED.

⁹ Partial outputs data only. Healthy New Towns is an ongoing intervention, and data for completed travel-related outputs are available from some demonstrator sites. Baseline data have been collected in some sites, but no evaluations have been completed.

1.2 Methodology

This evidence review summarises information from a portfolio of projects provided to NatCen by DfT. Data were extracted from available studies on the listed projects using two Data Extraction Templates – one to record data on outputs, and one to record data on outcomes, as defined in the Everybody Active, Every Day framework (Ahmad & Rayment 2018:42 – see above). See Appendix A for a full list of studies included in this review.

During outcome data extraction, we focused on extracting quantitative outcome measures reported from project evaluations, regardless of methodology – for example, this included reported changes in pre/post intervention perceptions from process evaluations as well as effect sizes from impact evaluations. Where outcomes were measured quantitatively but not clearly reported in available studies, these outcomes were not included in data extraction.

2 Findings

In this section, we present an overview of the project portfolio (Tables 1a – 1c), followed by brief narrative summaries and detailed tables presenting key data on intervention outputs (2.1) and intervention outcomes (2.2).

Full outputs and outcomes data can be found in the Excel dataset accompanying this report. This dataset includes one sheet presenting outputs data according to five domains: cycling, walking, traffic management, public transport, and ‘other’, with data disaggregated by location (where possible) and presented as totals for each project. Outcomes data are presented on another sheet, again according to five domains: cycling, walking, traffic use / management, public transport, and ‘other’. A key is provided on a separate sheet, indicating that ‘n/a’ (not applicable) is entered in cells where no information is expected, and that ‘n/d’ (no data) is entered in cells where information was expected but missing from source documents. The same abbreviations are used in tables presented in this report.

Overview of project portfolio

In Table 1a, Table 1b and Table 1c, we present an overview of key information for, respectively, large DfT projects, smaller DfT and other projects, and other schemes included in the portfolio. This information includes intervention dates, project description, and a summary of information on project costs, where available. Of the 19 projects, ten are complete and nine are ongoing. The earliest project start date is 2004 (Sustainable Travel Towns), with the majority (14) implemented from 2011 onwards.

Studies included in the review typically did not provide cost data for each output. Instead, cost data were presented in a variety of ways – including project-level costs, scheme-level costs within projects, and per capita costs. We therefore provide a summary of any project-level cost data provided in Tables 1a – 1c. See the Excel dataset accompanying this report for more detailed project-level cost data, where available¹⁰.

Outputs

In Section 2.1, we present brief narrative summaries of key outputs data followed by more detailed tables according to the following domains: **cycling**; **walking**; **traffic management**; and **public transport**. While the majority of outputs can be classified under these categories, we also include key data classified under the following ‘other’ domains: **multi-modal**; **education-related**; **employment-related**; and **promotion / awareness campaigns** (Tables 3 – 10).

Outcomes

In Section 2.2, we present brief narrative summaries of key outcomes data followed by more detailed tables according to the following domains: **cycling**; **walking**; **traffic use / management**; and **public transport**. Again, while the majority of outcomes can be classified under these domains, we also include summaries of key data classified under the following ‘other’ domains: **multi-modal**; **employment-related**; **environmental**; **health and wellbeing**; and **behaviour change** (Tables 12 – 20).

¹⁰ See column AW (‘Any other information on costs?’), ‘Outputs data’ sheet.

Table 1a: Overview of Project Portfolio: Large DfT projects

OVERVIEW OF PORTFOLIO: LARGE DFT PROJECTS				
Project	Intervention period	Complete? ¹⁷	Project Description	Project Costs
Access Fund	2016 – 2020	No	<p>'The Department for Transport announced a £64 million investment in the Access Fund in January 2017. All English transport authorities outside London could bid for this funding in order to support the delivery of local projects between 2017 and 2020. Ultimately, 25 transport authorities were successful in their bids for the funding. The specific objectives of the Access Fund were to:</p> <ul style="list-style-type: none"> • Increase cycling; • Increase walking; • Support access to new and existing employment; • Support access to education and training; • Reduce carbon emissions; • Improve air quality; • Improve local economies; • Reduce traffic congestion.' <p>(DfT 2018: 2)</p> 	<p><u>Objective 1: Increase Cycling</u>: £7,262,521</p> <p><u>Objective 2: Increase Walking</u>: £619,221</p> <p><u>Objective 3: Support Access to New and Existing Employment</u>: £6,552,280</p> <p><u>Objective 4: Access to Education and Training</u>: £2,166,041</p> <p>(Based on all available costs data for these objectives, 2018-19 Outputs Survey)</p>
Bikeability	2007 – ongoing	No	<p>'Bikeability is a practical training programme, offered at three levels, that aims to develop children and young people's skills and confidence to cycle on roads and ultimately encourage more people to cycle more safely, more often. It is funded by the Department for Transport (DfT) and delivered through local authorities and School Games Organiser Host Schools. In 2017/18 (the last financial year with available programme monitoring data), 353,582 DfT-funded Bikeability training places were delivered in just under half of all primary schools in England (outside London, where Bikeability is managed by Transport for London).'</p> <p>(DfT 2019: i)</p>	<p>2007 – 2015: [n/d]</p> <p>'The Department has issued £40m to support Bikeability cycle training for schoolchildren from September 2016 to March 2020'</p> <p>(DfT 2017b: 14).</p>

¹⁷ As of October 2019.

OVERVIEW OF PORTFOLIO: LARGE DFT PROJECTS

Project	Intervention period	Complete? ¹⁷	Project Description	Project Costs
Cycle City Ambition Programme	2013 – 2018	Yes	<p>'A major investment programme from the DfT that aims to support cycling through capital investment as part of the Cycle City Ambition (CCA) Programme. The Department for Transport provided £191 million capital funding grants to eight English cities, or groups of cities between 2013 and 2018: Birmingham, Cambridge, Greater Manchester, Newcastle, Norwich, Oxford, West of England, West Yorkshire. [...] [Evaluated] schemes include: 'cycle superhighways'; shorter segregated cycle routes; 'mixed strategic cycle routes' that combine quiet roads, routes through green space, and segregated paths; city-centre schemes; improvements on a network of canal towpaths; and junction treatments.</p> <p>(Sloman et al 2019: 8)</p>	<p><u>Birmingham</u>: £39.1 million <u>Cambridge</u>: £10.1 million <u>Greater Manchester</u>: £42.1 million <u>Newcastle</u>: £16.3 million <u>Norwich</u>: £12.1 million <u>Oxford</u>: £4.2 million <u>West of England</u>: £27 million <u>West Yorkshire</u>: £40.2 million</p> <p>(Sloman et al 2019: 33-40)</p>
Cycle Demonstration Towns & Cycling Cities and Towns	2005 – 2011 & 2008 – 2011	Yes	<p>'The Cycling Demonstration Towns (CDT) programme ran from October 2005 to March 2011, and involved six medium-sized towns, with populations of between 65,000 and 245,000 people. The partly concurrent Cycling City and Towns (CCT) programme ran from July 2008 to March 2011. It involved one substantially larger city (Greater Bristol), one significantly smaller town (Leighton Linlade) and a further ten towns of medium size, with populations ranging from 75,000 to 240,000. In all 18 towns and cities, the focus of the programme was on encouraging more cycling for short 'everyday' urban trips – that is, those trips which when made by car contribute disproportionately to congestion.'</p> <p>(Sloman et al 2017b: 4)</p>	<p>'Taken overall, the annual expenditure per head of population was £17 for five-and-a-half years in the CDTs and £14 for just under three years in the CCTs. Expenditure comprised both capital (about 80% and 70% for the CCT and CDT programmes respectively) and revenue (20-30%).'</p> <p>(Sloman et al 2017b: 4)¹⁸</p>

¹⁸ See the Excel dataset accompanying this report for cost data disaggregated by location for Cycle Demonstration Towns.

OVERVIEW OF PORTFOLIO: LARGE DFT PROJECTS

Project	Intervention period	Complete? ¹⁷	Project Description	Project Costs
Cycle Rail Fund	2012 – ongoing	No	<p>'On 7 March 2012 the then Transport Minister Norman Baker, announced funding to improve cycle facilities at railway stations. £7m was allocated to the Cycle Rail Working Group to improve integration between cycle and rail at stations. The schemes would be delivered by Train Operating Companies. This fund was enhanced by a further £7.5m funding announced on 30 January 2013. This allowed the Cycle Rail Working Group to continue the good work in overseeing implementation of cycle-rail improvement schemes to meet public demand for more and better cycle parking at stations. The core objectives of the fund were to reduce carbon emissions and boost economic growth. In addition, the fund had four secondary objectives:</p> <ul style="list-style-type: none"> • Attract high levels of funding from other sources; • Have a good regional spread and be capable of being delivered quickly; • Complement other transport investment and support increased cycling; and • Reinforce wider initiatives (not restricted to transport) which aim to support the local economy.' <p>(DfT 2014: 5)</p>	<p><u>DfT funding total per region:</u></p> <p>East: £4,480,009 South East: £15,660,107 South West: £3,770,000 East Midlands: £2,260,000 West Midlands: £1,808,424 Yorkshire & Humber: £2,017,556 North East: £239,570 North West: £4,837,824</p> <p><u>DfT funding total:</u> £35,073,490 (DfT 2019)</p>
Cycling and Accessibility	2016 – ongoing	No	<p>'In 2016 we published our Cycling and Accessibility strategies [...] These strategies set out our vision for:</p> <ul style="list-style-type: none"> • a connected, comfortable, attractive and high-quality cycling network, suitable and safe for use by people of all ages and abilities; • reducing the barriers our roads can sometimes create, helping expand peoples' travel choices, enhancing and improving network facilities and making every day journeys as easy as possible. <p>Our approach integrates with the Government's Cycling and Walking Investment Strategy and supports the development of Local Cycling and Walking Infrastructure Plans'</p> <p>(Highways England 2018: 2)</p>	<p><u>Cycling and Integration Designated Fund Programme:</u> £100m invested</p> <p>(Highways England 2018:5)</p>

OVERVIEW OF PORTFOLIO: LARGE DFT PROJECTS

Project	Intervention period	Complete? ¹⁷	Project Description	Project Costs
Linking Communities	2012 – 2014	Yes	<p>'The Linking Communities programme is a series of infrastructure works creating or upgrading traffic-calmed and traffic-free walking and cycling routes. These routes are designed to link people to areas of economic activity and local facilities by active travel. [...] Sustrans' role in the programme is to work with partners to identify routes which would best achieve the objectives of the funding. Sustrans works with local partners to deliver the links on time and to budget whilst maintaining the highest design standards.'</p> <p>(Sustrans 2016: 5)</p>	<p>2012-13: 35 schemes costing £18.8 million.</p> <p>2013-2014: 45 schemes at a cost of £14.6 million.</p> <p>(Sustrans 2016: 5)</p>
Local Sustainable Transport Fund	2011 – 2015	Yes	<p>'The Local Sustainable Transport Fund supported investment in 96 local sustainable transport projects between July 2011 and March 2015. [...]</p> <p>'The Fund supported projects that were designed to meet two core policy objectives:</p> <ul style="list-style-type: none"> • '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'. <p>(Sloman et al 2017a: 16)</p>	<p>'In all, 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. The total grant awarded to local authorities was £540 million.'</p> <p>(Sloman et al 2018: 7)</p>

OVERVIEW OF PORTFOLIO: LARGE DFT PROJECTS

Project	Intervention period	Complete? ¹⁷	Project Description	Project Costs
Sustainable Travel Towns	2004/5 – 2008/9	Yes	<p>'Three towns jointly received £10 million funding from the Department of Transport for the implementation of large-scale 'smarter choice' programmes over a five-year period [...] all three programmes put in place a range of initiatives aiming to encourage more use of non-car options - in particular, bus use, cycling and walking - and to discourage single-occupancy car use. The strategies adopted by the three towns included the development of a strong brand identity; travel awareness campaigns; public transport promotion; cycling and walking promotion; school and workplace travel planning; and large-scale personal travel planning work.'</p> <p>(Cairns & Jones 2016: 1)</p>	<p><u>Darlington</u>: £4.4 million programme (£2.6m revenue, £1.7m capital) with 'Local Motion' brand.</p> <p><u>Peterborough</u>: £6.8m programme (£3.6m revenue, £3.2m capital) with 'Travelchoice' brand.</p> <p><u>Worcester</u>: £4.4m programme (£1.6m revenue, £2.9m capital) with 'Choose How You Move' brand</p> <p>(Cairns & Jones 2016: 16)</p>

Table 1b: Overview of Project Portfolio: Smaller DfT and other projects

OVERVIEW OF PORTFOLIO: SMALLER DFT & OTHER PROJECTS				
Project	Intervention period	Complete?	Project Description	Project Costs
The Big Bike Revival	2015 – 2019	No	<p>'Building on previous years of delivery [...] another 12-week programme was delivered in 2018 [...] The aim of BBR in 2018 was to further unlock the potential for cycling amongst people who do not currently cycle but would consider either starting or returning to cycling. [...] One of the key objectives for BBR in 2018 was to improve the perception of cycling safety by providing a high volume of opportunities for the public to access. [The model] focused on three core elements of safety: fixing and servicing bikes to ensure they are safe to use; learning, empowering new cyclists & existing cyclists through training courses; leading, delivering led rides that are accessible to a wide range of abilities and audiences.'</p> <p>(Cycling UK 2018: 1)</p>	<p>2014 – 2017: £2.57 million (DfT 2017b: 14 – 15).</p> <p>2018 – 2019: [n/d]</p>
The National STARS School Travel Awards	2012 – ongoing	No	<p>'Modeshift STARS [Sustainable Travel Accreditation and Recognition for Schools] is the national awards scheme that recognises schools that have shown excellence in supporting cycling, walking and other forms of sustainable travel. The scheme was launched nationwide in September 2012 and was created to encourage schools right across the country to join in a major effort to increase levels of walking and cycling to school. STARS has received the backing of the Department for Transport since November 2014 and is now recognised as the National School Travel Awards scheme. It is open to every school in the country outside of London and participation for schools is completely free of charge.'</p> <p>(Modeshift 2019: 2)</p>	<p>Funded through stakeholder and local authority contributions of over £500,000.</p> <p>DfT contributions: £340,000.</p> <p>(Modeshift 2019: 5).</p>

OVERVIEW OF PORTFOLIO: SMALLER DFT & OTHER PROJECTS

Project	Intervention period	Complete?	Project Description	Project Costs
Paths for Communities (P4C)	2012 – 2014	Yes	<p>'The objective of the P4C scheme pilot was to encourage and enable local rural communities to work with landowners to develop and enhance local public paths that both extend the network and make it easier to use, in ways that deliver social and economic benefits. To do this the scheme, had to demonstrate:</p> <ul style="list-style-type: none"> • PROW (Public Right of Way) network improvements (for example, providing missing links and routes that open up the network to more users including links from residential areas to the natural environment); • New multi-user routes providing opportunities for different types of public access (essentially walking, horse-riding and cycling) and for all levels of ability (including wheelchair access as well as routes suitable for pushchairs, and for people with additional mobility needs); • Delivery of economic benefits to rural communities (for example, to rural shops, eateries, attractions and accommodation); • Delivery of social benefits to rural communities (including evidence of health benefits, social cohesion, outdoor education, safe and active travel)' <p>(DEFRA 2014: 5)</p> 	<p>'P4C funding came from the Rural Development Programme for England (RDPE).'</p> <p>(DEFRA 2014: 5)</p> <p><i>Total cost of projects for Improving the Public Rights of Way network:</i></p> <p><u>Surface works:</u> £1,506,750</p> <p><u>Infrastructure:</u> £373,104</p> <p><u>Signage, promotion and interpretation:</u> £88,848</p> <p><u>Total:</u> £1,968,702</p> <p>(DEFRA 2014: 26)</p>
TfL Segregated Cycling Infrastructure	2014 – 2017	Yes	<p>'East-West Superhighway, North-South Highway and Quietway 1 completed in 2016-17 as part of the Mayor's Transport strategy. Segregated facilities have been designed in accordance with the high-quality standards set out in 'London Cycle Design Standards'</p> <p>(TfL 2018: 3 – 5)</p>	[n/d]
TfL Street Appeal	2008 – 2014	Yes	<p>'TfL's Better Streets Delivered series started in 2008, included improvement works that ranked as significant in TfL's own scale of street intervention. Investment typically involved recreating the public realm, rethinking traffic management, relocating and/or merging street functions, and generally tidying up and decluttering the street environment.'</p> <p>(Camona et al 2018: 8)</p>	[n/d]

OVERVIEW OF PORTFOLIO: SMALLER DfT & OTHER PROJECTS

Project	Intervention period	Complete?	Project Description	Project Costs
Walk to School Outreach	2018 – 2019	Yes	<p>'The Walk to School Outreach 2018/19 project is being delivered by Living Streets in partnership with five local and combined transport authorities between July 2018 March 2019. It aims to overcome barriers to walking and help the government reach its target of 55% of children walking to school by 2020. [...] The project builds on the highly successful DfT-funded Walk to School Outreach 2017-18 project which achieved impressive results.'</p> <p>(Living Streets 2018: 3 – 5).</p>	<p>Funded through a grant of £620,000 from the Department of Transport.</p> <p>By the end of September 2018, a total of £201,470 had been spent against the project budget.</p> <p>(Living Streets 2018: 9).</p>
Walking Cities	2013 – 2015	Yes	<p>'The Department of Health funded five 'Walking Cities' in 2013 – 2015 to develop walking initiatives. The purpose of the fund was to get more people walking and also to target the particularly inactive and those who were less well socially situated.'</p> <p>(Hanson & Jones 2016: 4)</p>	<p>'The [Department of Health] distributed £1.2 million funding over two years to be divided across the successful City Deal recipients of the Cycle City Ambition Grant (CCAG). Each of the successful CCAG applicants were invited to submit a proposal with costings up to £250,000 to be split equally over two years.'</p> <p>(Hanson & Jones 2016: 4)</p>

Table 1c: Overview of Project Portfolio: Other schemes

OVERVIEW OF PORTFOLIO: OTHER SCHEMES				
Project	Intervention period	Complete?	Project Description	Project Costs
Cycle to Work Scheme	2009 – ongoing	No	<p>'The cycle to work scheme is a tax-free, salary sacrifice benefit currently offered through employers, who may loan cycles and various items of cycling equipment to employees, with the intention of promoting both more environmentally friendly commuting and health benefits associated with cycling (Department for Transport, 2009). The Cycle to Work Alliance brings together a group of leading providers of the cycle to work scheme, including Cyclescheme, Cycle Solutions, Evans Cycles and Halfords, who work with employers to administer the schemes offered to employees.</p> <p>(Swift et al 2016: 8)</p>	[n/d]
Everybody Active, Every Day	2014 – ongoing	No	<p>'Everybody Active Every Day (EAED) is the national physical activity framework for England. The EAED framework is seen by stakeholders as setting a clear agenda for action and based on strong evidence. It is viewed as having been influential on policy locally and nationally. EAED was produced through an extensive process of consultation with a wide range of stakeholders and experts. Successful implementation of the EAED framework depends on its aims being shared by relevant national and local stakeholders, and integrated into national and local policy and delivery.' (Ahmad & Rayment 2018: 6)</p> <p>'EAED calls for action at national and local level across four domains:</p> <ol style="list-style-type: none"> 1. Active society: creating a social movement 2. Moving professionals: activating networks of expertise 3. Active environments: creating the right spaces 4. Moving at scale: scaling up interventions that make us active' <p>(Ahmad & Rayment 2018: 13)</p>	[n/d]

OVERVIEW OF PORTFOLIO: OTHER SCHEMES

Project	Intervention period	Complete?	Project Description	Project Costs
Healthy New Towns	2018 – 2021	No	<p>'NHS England established Healthy New Towns, a three-year programme, to look at how health and wellbeing can be planned and designed into new places. It brings together partners in housebuilding, local government, healthcare and local communities to demonstrate how to create places that offer people improved choices and chances for a healthier life. The programme's three priorities were:</p> <ul style="list-style-type: none"> • planning and designing a healthy built environment • creating innovative models of healthcare • encouraging strong and connected communities. <p>Places that were planning new large-scale housing developments were invited to take part in the programme. Ten were selected to be 'demonstrator sites' to test innovation and explore possibilities. These sites represent a range of locations and explore different challenges</p> <p>(NHS England 2017: 4)</p>	[n/d]

2.1 Intervention Outputs

In this section, we present key data on intervention outputs according to eight domains: cycling, walking, traffic management, public transport, multi-modal, education-related, employment-related, and promotion / awareness campaigns. Of the 18 projects reporting outputs data, nine projects report data on cycling outputs; six on walking outputs; three on traffic management outputs; two on public transport outputs; six on multi-modal outputs; six on education-related outputs; five on employment-related outputs; and five on outputs related to promotion or awareness campaigns (see Table 2).

After a brief narrative summary of outputs under each domain, key outputs data are presented in Tables 3 – 10. It is important to note that many studies did not provide quantitative information on outputs; output totals (e.g. total distance, total number of training places) included in narrative summaries therefore reflect *reported* data provided in available studies.

Table 2: Overview of intervention outputs according to domain

Project	Domain							
	Cycling	Walking	Traffic Management	Public transport	Other			
					Multi-modal	Education related	Employment related	Promotion / awareness campaigns
Access Fund	✓					✓	✓	✓
Bikeability	✓							
Cycle City Ambition Programme	✓		✓		✓	✓	✓	
Cycle Demonstration Towns & Cycling Cities and Towns ¹⁹								
Cycle Rail Fund	✓							
Cycling and Accessibility	✓				✓			
Linking Communities	✓		✓		✓			
Local Sustainable Transport Fund	✓	✓	✓	✓	✓	✓	✓	

¹⁹ No data on outputs for Cycle Demonstration Towns or Cycling City and Towns was found in available sources, other than high-level cost data which are included in Table 1.

Project	Domain							
	Cycling	Walking	Traffic Management	Public transport	Other			
					Multi-modal	Education related	Employment related	Promotion / awareness campaigns
Sustainable Travel Towns		✓		✓	✓	✓	✓	✓
The Big Bike Revival								✓
The National STARS School Travel Awards						✓		
Paths for Communities (P4C)		✓						
TfL Segregated Cycling Infrastructure	✓							
TfL Street Appeal		✓						
Walk to School Outreach		✓						
Walking Cities		✓						
Cycle to Work Scheme	✓							
Everybody Active, Every Day							✓	✓
Healthy New Towns					✓	✓		✓
TOTAL	9	6	3	2	6	6	5	5

Cycling outputs: 9 projects

The total reported distance of cycling infrastructure is 756.8 miles, including new segregated cycle routes, unsegregated cycle paths and routes, new or extended Cycle Superhighways; new or improved Mixed Strategic Cycle Routes; and newly signed routes. A reported 2,864,493 people participated in cycle training, including Bikeability training and cycle repair training, while 148,367 people participated in cycling events. Other commonly reported cycling outputs include cycle parking; cycle repair and maintenance stations; cycle hire facilities; and promotional events. See Table 3 for full details.

Walking outputs: 6 projects

The total reported distance of walking infrastructure is 200.7 miles, comprising new or improved pedestrian routes constructed under the Local Sustainable Transport Fund. A reported 6,098 people participated in walking events. Other reported walking outputs include improved and expanded pedestrianised or pedestrian-friendly areas; rural infrastructure including fences, gates, bridges and benches; newly signed routes; and promotional activities including school/workplace-based challenges. See Table 4 for full details.

Traffic management outputs: 3 projects

The total reported distance of traffic management outputs – specifically, newly signed speed zones and new traffic calming measures constructed under the Cycle City Ambition Programme – is 59.7 miles. Other reported traffic management outputs include junction improvements and remodelling at 27 junctions; roundabout remodelling; newly signalised pedestrian and cyclist motorway crossings; and MOVA traffic signal control. See Table 5 for full details.

Public transport outputs: 2 projects

Reported public transport outputs include 3,800 bus stop improvements, bus priority measures and 487 train stations with improved cycle facilities and other sustainable travel improvements; concessionary bus fares and bus information marketing; and new or improved bus services. See Table 6 for full details.

Multi-modal outputs: 6 projects

Reported multi-modal outputs include new or improved bridges, canal paths, crossings and routes for cyclists and pedestrians; new or improved shared-use paths and routes for cyclists, pedestrians, joggers and equestrians (a reported total of 278.9 miles across projects); and Personalised Travel Planning services (which cover multiple modes of transport), delivered to a reported 390,000 households. See Table 7 for full details.

Education-related outputs: 6 projects

A total of 7,773 schools are reported to have received education-related outputs, including new services, facilities or activities to reduce car-use on the school run, participation in the National STARS School Travel Awards, and in events and campaigns supported through the Access Fund. Note that this does not include schools included in the

Cycling City Ambition Programme, recorded as '780 workplaces and schools benefitting from cycle improvements and facilities'. Other education-related outputs include physical activity promotion at school and school travel planning. See Table 8 for full details.

Employment-related outputs: 5 projects

Employment-related outputs include support for a reported 200,672 jobseekers to access work; 1,011 workplaces with improved services or facilities to reduce single car occupancy; and 10,338 workplaces and organisations engaged through events and campaigns. Note that this does not include workplaces included in the Cycling City Ambition Programme, recorded as '780 workplaces and schools benefitting from cycle improvements and facilities'. Other employment-related outputs include workplace travel plans and workshops and training courses on transport needs. See Table 9 for full details.

Promotion / awareness campaign outputs: 5 projects

A total of 16,269 campaigns and events to promote active travel are reported across the Access Fund and the Big Bike Revival; a reported 2,015,041 people engaged with or benefitted from these campaigns and events. Other projects reporting cycling and walking promotion, travel awareness campaigns and 'Couch to 5k' initiatives did not quantify these outputs.

Notes on Tables 3 – 10

Output column:	See the Excel dataset accompanying this report for full definitions of outputs, where provided.
Count and Distance columns:	These columns present <u>total</u> count and distance data for individual outputs, where available. For projects implemented in multiple locations, the total count and distance for outputs have been calculated using these disaggregated data. See the Excel dataset accompanying this report for both disaggregated and total calculations, where provided.
[n/a]	Not applicable; no information expected.
[n/d]	No data; information missing / not provided.

Table 3: Intervention outputs, cycling

OUTPUTS: CYCLING				
Project	Intervention period	Output	Total Count	Total Distance
Access Fund	2016 – 2020	Cycle improvements and facilities	147 workplaces 9 schools	[n/a]
		Cycle training	3,624 events and courses delivered 84,672 people trained	[n/a]
Bikeability	2007 – ongoing	Bikeability training in primary schools (outside London)	2,689,921 training places delivered	[n/a]
Cycle City Ambition Programme	2013 – 2018	New segregated cycle routes	[n/a]	155.3 miles
		Off-road cycling signage and resurfacing improvements	[n/a]	136.7 miles
		New and upgraded cycle parking places	3,380 places	[n/a]
		Stations benefitting from cycle improvements and facilities	25 stations	[n/a]
Cycle Rail Fund	2012 – ongoing	Cycle spaces	22,866 spaces	[n/a]
		Hire bikes	1,342 hire bikes	[n/a]
		Enhanced security	232 stations	[n/a]
		Bike repair / maintenance facilities	27 facilities	[n/a]
		Cycle Point	2 Cycle Points	[n/a]
		Cycle Hubs	62 Cycle Hubs	[n/a]
		Brompton Docks	13 Brompton Docks	[n/a]
		Cycle paths / routes	5 paths / routes	[n/a]
		BikeNGo points	45 BikeNGo points	[n/a]
		Signage	91 stations	[n/a]
Cycling and Accessibility	2016 – ongoing	Pool Bike Scheme trial	[n/d]	[n/a]
		Cycle schemes	80 schemes delivered	[n/a]
		New cycleways	[n/a]	1 mile

OUTPUTS: CYCLING

Project	Intervention period	Output	Total Count	Total Distance
Linking Communities	2012 – 2014	Improved and extended traffic-free cycle paths	[n/a]	3 miles
		Hybrid cycle lanes built	1 cycle lane	1 mile
		Segregated cycle lanes	1 cycle lane	[n/d]
Local Sustainable Transport Fund	2011 – 2015	Cycle routes	[n/a]	459.8 miles
		Cycle parking spaces	33,600 spaces	[n/a]
		Cycle repair training and servicing	62,000 adults trained / bikes serviced	[n/a]
		Cycle training	27,900 adults trained	[n/a]
		Led cycle rides	55,900 adults participated	[n/a]
TfL Segregated Cycling Infrastructure	2014 – 2017	Cycle superhighways	2 superhighways	[n/d]
		Quietway	[n/d]	[n/d]
Cycle to Work Scheme	2009 – ongoing	Employers buying / leasing cycling equipment to their employees	1.1 million successful applications	[n/a]

Table 4: Intervention outputs, walking

OUTPUTS: WALKING				
Project	Intervention period	Output	Total Count	Total Distance
Local Sustainable Transport Fund	2011 – 2015	New or improved pedestrian routes	[n/a]	200.7 miles ²⁰
Sustainable Travel Towns	2004/5 – 2008/9	Pedestrianisation of town centre	[n/d]	[n/d]
Paths for Communities	2012 – 2014	Surface works	[n/d]	[n/d]
		Infrastructure: fencing, gates, bridges and benches	58 gates; 8 bridges 66 benches	2.5 miles fencing
		Signage, promotion and interpretation	16 interpretation panels; 1,112 waymarking discs 104 waymarking finger posts	[n/a]
TfL Street Appeal	2008 – 2014	Improved and expanded pedestrian-friendly areas	6 areas	[n/a]
Walk to School Outreach	2018 – 2019	WOW – year-round walk to school challenge	207 primary schools recruited	[n/a]
		WOW Travel Tracker	[n/d]	[n/a]
Walking Cities	2013 – 2015	Themed and volunteer-led walks	5,710 participants ²¹	[n/a]
		Strategic work to share learning	[n/d]	[n/a]
		Pledge cards given to individuals	[n/d]	[n/a]
		Community Street Audits	[n/d]	[n/a]
		Small grants funds	[n/d]	[n/a]
		Social media and promotion work	[n/d]	[n/a]
Walking Cities (continued)	2013 – 2015	Tendering delivery to local community organisations	[n/d]	[n/a]
		Beat the Streets project	[n/d]	[n/a]
		Piloted Social Rewards Scheme	388 participants	[n/a]
		Engagement using existing community-based projects	[n/d]	[n/a]

²⁰ 12 Large Projects only.

²¹ Of programmes reporting participant numbers. See Excel dataset accompanying this report for details.

Table 5: Intervention outputs, traffic management

OUTPUTS: TRAFFIC MANAGEMENT				
Project	Intervention period	Output	Total Count	Total Distance
Cycle City Ambition Programme	2013 – 2018	Roundabout remodelling	1 roundabout	[n/a]
		Remodelled ring-road junction	1 junction	[n/a]
		Speed zones introduced	[n/a]	21.4 miles ²
		Speed zones: signing	[n/a]	59.7 miles
		Traffic calming measures	6 junction speed tables	0.6 miles speed bumps
Linking Communities	2012 – 2014	Speed limit zones introduced	1 zone	[n/d]
Local Sustainable Transport Fund	2011 – 2015	Junction improvements	At 16 locations ²²	[n/a]
		MOVA traffic signal control	At 4 junctions ²³	[n/a]

²² CENTRO Large Project only.

²³ CENTRO Large Project only.

Table 6: Intervention outputs, public transport

OUTPUTS: PUBLIC TRANSPORT				
Project	Intervention period	Output	Total Count	Total Distance
Local Sustainable Transport Fund	2011 – 2015	Major bus stop improvements	3,800 bus stops	[n/a]
		Sustainable travel to train stations	230 stations	[n/a]
		Encouraging train travel	30 stations with new train services 2 new stations built	[n/a]
Sustainable Travel Towns	2004/5 – 2008/9	Concessionary bus fares	[n/d]	[n/a]
		Bus service improvements	[n/d]	[n/a]
		Bus information and marketing	[n/d]	[n/a]

Table 7: Intervention outputs, multi-modal

OUTPUTS: MULTI-MODAL				
Project	Intervention period	Output	Total Count	Total Distance
Cycle City Ambition Programme	2013 – 2018	New on & off-road routes for cyclists and pedestrians	[n/a]	186.4 miles
		Quality road improvements for cyclists and pedestrians	[n/a]	77.7 miles
		New and upgraded cyclist and pedestrian crossings	3,380 crossings	[n/a]
Cycling and Accessibility	2016 – ongoing	New crossings for cyclists, pedestrians and/or equestrians	120 crossings	[n/a]
		Upgraded crossings	286 crossings	[n/a]
Linking Communities	2012 – 2014	Improved shared-use paths	5 paths ²⁴	8.6 miles
		New shared-use paths	1 path	[n/d]
Local Sustainable Transport Fund	2011 – 2015	Personalised Travel Planning	390,000 households	[n/a]

²⁴ Of locations reporting participant numbers. See Excel dataset accompanying this report for details.

OUTPUTS: MULTI-MODAL

Project	Intervention period	Output	Total Count	Total Distance
Sustainable Travel Towns	2004/5 – 2008/9	Cycling and walking infrastructure	[n/d]	[n/a]
		Personalised Travel Planning	[n/d]	[n/a]
Healthy New Towns	2018 – 2021	Enhanced active travel around town	[n/d]	[n/a]
		Health Routes	[n/a]	2 x 3.1 mile routes

Table 8: Intervention outputs, education-related

OUTPUTS: EDUCATION-RELATED

Project	Intervention period	Output	Total Count	Total Distance
Access Fund	2017 – 2020	Events and campaigns	6,931 schools engaged	[n/a]
Cycle City Ambition Programme	2013 – 2018	Workplaces and schools benefitting from new infrastructure	780 workplaces and schools	[n/a]
Local Sustainable Transport Fund	2011 – 2015	New services, facilities or activities provided in schools to reduce car use	635 schools ²⁵	[n/a]
Sustainable Travel Towns	2004/5 – 2008/9	School travel planning	[n/d]	[n/a]
The National STARS School Travel Awards	2012 – ongoing	Signing up schools to the award	4,000 registered users	[n/a]
		Signing up local authorities to the award	69 registered local authorities	[n/a]
		School accreditation	1,200 accredited schools	[n/a]
		Regional award events	5 regional award events	[n/a]
Healthy New Towns	2018 – 2021	Physical activity promotion at schools	[n/d]	[n/a]

²⁵ 12 Large Projects only.

Table 9: Intervention outputs, employment-related

OUTPUTS: EMPLOYMENT-RELATED				
Project	Intervention period	Output	Total Count	Total Distance
Access Fund	2017 – 2020	Supporting access to work	84,672 people supported by travel measures to access work	[n/a]
		Events and campaigns	10,338 businesses, workplaces and organisations engaged	
Cycle City Ambition Programme	2013 – 2018	Workplaces introducing new cycling infrastructure or facilities to reduce single car occupancy	57 Top Cycle Location cycling parking grants 300 travel plans 1,011 workplaces engaged	[n/a]
		Support to access work	116,000 jobseekers	[n/a]
		Workplace travel plans	[n/d]	[n/a]
Everybody Active, Every Day	2014 – ongoing	Moving Professionals: publications disseminated / uploaded	[n/d]	[n/a]
		Moving Professionals: champions recruited	[n/d]	[n/a]
		Moving Professionals: training courses delivered	[n/d]	[n/a]

Table 10: Intervention outputs, promotion / awareness campaigns

OUTPUTS: PROMOTION / AWARENESS CAMPAIGNS				
Project	Intervention period	Output	Total Count	Total Distance
Access Fund	2016 – 2020	Behaviour change events and campaigns	13,724 campaigns and events 1,922,574 people engaged	[n/a]
Sustainable Travel Towns	2004/5 – 2008/9	Cycling and walking promotion	[n/d]	[n/a]
		Travel awareness campaigns	[n/d]	[n/a]
The Big Bike Revival	2015 – 2019	Beneficiaries	92,467 people (2017-18)	[n/a]
		Events	2,545 events (2017-2018)	[n/a]
		Delivery centre engagement	125 delivery centres (2017-18)	[n/a]
		Training	246 ride leaders trained (2017)	[n/a]
Everybody Active, Every Day	2014 – ongoing	Participation in events and campaigns	[n/d]	[n/a]
		Development, uptake and use of evidence and applications	[n/d]	[n/a]
		Uptake of communications and web materials	[n/d]	[n/a]
		Joint initiatives and strategies for action	[n/d]	[n/a]
		Inputs into national and local policies and strategies	[n/d]	[n/a]
		Development, dissemination, uptake and use of evidence	[n/d]	[n/a]
Healthy New Towns	2018 – 2021	'Couch to 5k', surgery sign-up and other initiatives rolled out	[n/d]	[n/a]
		Digital Movement Project	[n/d]	[n/a]

2.2 Intervention Outcomes

In this section, we present key data on intervention outcomes according to nine domains: cycling, walking, traffic use / management, public transport, multi-modal, employment-related, environmental, health and wellbeing, and behaviour change. Of 14 portfolio projects reporting outputs data, 11 report data on cycling outcomes; seven on walking outcomes; five on traffic use / management outcomes; two on public transport outcomes; one on multi-modal outcomes; two on employment-related outcomes; three on environmental outcomes; two on health and well-being outcomes; and three on behaviour change outcomes (see Table 11).

After a brief narrative summary of outcomes under each domain, key outcomes data are presented in Tables 12 – 20. The evaluation methodology for most studies is pre- and post-intervention comparison of outcomes, with no control or comparison group for seven projects (Walking Cities, Paths for Communities, Cycle to Work Scheme, Linking Communities, TfL Segregated Infrastructure, Walk to School Outreach, National STARS School Travel Awards). Evaluations of the Local Sustainable Transport Fund, Cycle Demonstration Towns and Cycling City & Towns, and TfL Street Appeal offer comparisons between intervention areas and ‘matched’ non-intervention areas, while evaluations of Sustainable Travel Towns and Cycle City Ambition Programme offer comparisons between trends in intervention areas and national and city-wide trends respectively. Bikeability is the only project evaluated with defined intervention and control groups (pupils who did and did not receive Bikeability training, respectively). No information was provided on evaluation methodology in source documents for the Big Bike Revival.

Overall, key findings from evaluations of portfolio projects indicate:

- An increase in the number and length of cycling and walking trips over intervention periods in ten projects;
- Reduced car use over intervention periods in four projects, and lowered carbon emissions in two projects;
- More children cycling to school regularly, with increased knowledge of cycling safety, as a result of two projects²⁶;
- More people cycling to work over the intervention period in one project;
- Mixed evidence on changes in public transport use over intervention periods in two projects.

²⁶ Based on statistically significant differences between intervention and control groups in the Bikeability evaluation, and between intervention and matched towns in the evaluation of Cycle Demonstration Towns and Cycling City & Towns.

Table 11: Overview of intervention outcomes according to domain

Project	Domain								
	Cycling	Walking	Traffic use / management	Public transport	Other				
					Multi-modal	Employment related	Environmental	Health and wellbeing	Behaviour change
Access Fund ²⁷									
Bikeability	✓								
Cycle City Ambition Programme	✓						✓		
Cycle Demonstration Towns & Cycling Cities and Towns	✓								✓
Cycle Rail Fund ²⁸									
Cycling & Accessibility ²⁹									
Linking Communities	✓	✓				✓	✓	✓	
Local Sustainable Transport Fund	✓	✓	✓	✓					
Sustainable Travel Towns	✓	✓	✓	✓		✓	✓	✓	
The Big Bike Revival	✓								✓
The National STARS School Travel Awards	✓	✓	✓						
Paths for Communities			✓		✓				
TfL Segregated Cycling Infrastructure	✓								
TfL Street Appeal	✓	✓	✓						
Walk to School Outreach		✓							

²⁷ The Access Fund is an ongoing intervention; data on outcomes are available from monitoring and evaluation data (Access Fund Outputs Survey 2018-19), but these data are not systematic; clear comparisons over time/location are not included, or, where present, the nature of these comparisons are unclear.

²⁸ The Cycle Rail Fund is an ongoing intervention, and no evaluations have been conducted.

²⁹ Cycling and Accessibility is an ongoing intervention, and no evaluations have been conducted.

Project	Domain								
	Cycling	Walking	Traffic use / management	Public transport	Other				
					Multi-modal	Employment related	Environmental	Health and wellbeing	Behaviour change
Walking Cities		✓							
Cycle to Work Scheme	✓								✓
Everybody Active, Every Day ³⁰									
Healthy New Towns ³¹									
TOTAL	11	7	5	2	1	2	3	2	3

Cycling outcomes: 11 projects

The most commonly reported cycling outcomes are pre- to post-intervention changes in cycling levels. Reported outcomes include self-reported number, frequency and distance of cycling trips; and cycle traffic as recorded through automatic and manual cycle counts. Other cycling outcomes include levels of mode switch from other means of transport to cycling, and changes in perceptions of cycling safety and convenience.

Walking outcomes: 7 projects

Reported walking outcomes typically include pre- to post-intervention changes in walking levels, measured through self-reported number, frequency and distance of walking trips, usage estimates from route users, and street activity within a defined time period. Several projects also report pre- to post-intervention changes in self-reported walking levels for journeys to work or school.

Traffic use / management outcomes: 5 projects

Reported outcomes relating to traffic use or management include pre- to post-intervention changes in the volume of traffic, measured in per capita and absolute terms, and through self-reported number and distance of car trips.

³⁰ Everybody Active, Every Day (EAED) is a national physical activity framework; successful implementation of this framework depends on its aims being shared by relevant national and local stakeholders, and integrated into national and local policy delivery (Ahmad & Rayment 2018). As such, data on quantified 'outcomes' are not available for EAED.

³¹ Healthy New Towns is an ongoing intervention, and data for completed travel-related outputs are available from some demonstrator sites. Baseline data have been collected in some sites, but no evaluations have been completed.

Public transport outcomes: 2 projects

The two projects reporting public transport outcomes, Local Sustainable Transport Fund and Sustainable Travel Towns, report pre- to post-intervention changes in absolute bus journeys, per capita bus journeys, and self-reported number and distance of bus trips.

Multi-modal outcomes: 1 project

Paths for Communities is the only project to report multi-modal outcomes – i.e., those related to Public Rights of Way (PROW) used for walking, cycling, horse riding and jogging – through self-reported pre- to post-intervention changes in number of trips using the PROW among new and existing users; and levels of satisfaction with the PROW.

Employment-related outcomes: 2 projects

Reported employment-related outcomes include pre- to post-intervention changes in congestion and car use for journeys to school in Sustainable Travel Towns, and cyclists' perceptions of the effect of Linking Communities schemes on helping them get to work.

Environmental outcomes: 3 projects

Sustainable Travel Towns and Linking Communities report environmental outcomes in terms of pre- to post-intervention reduction in CO₂ emissions across intervention locations, while Cycle City Ambition Programme reports pre- to post-intervention changes in perceptions of the quality of surroundings and convenience of cycling, and the extent to which this influenced decisions to cycle.

Health and wellbeing outcomes: 2 projects

Sustainable Travel Towns and Linking Communities also report health and well-being outcomes, through self-reported pre- to post-intervention changes in walking and cycling and perceived effects of new routes on health and wellbeing.

Behaviour change outcomes: 3 projects

Behaviour change outcomes in the Cycle Demonstration Towns and Cycling Cities & Towns projects include self-reported pre- to post-intervention changes in participation in cycling among adults, and participation in cycling among children in terms of usual mode of transport to school and cycling to school every day. The Cycle to Work scheme reports behaviour change in terms of scheme users' perceptions of the effect of the scheme on their cycling habits. The Big Bike Revival reports a total of 20,908 beneficiaries exercising more as a result of the project; however, no details are provided on the evaluation methodology for this project in available source documents.

Notes on Tables 12 – 20

Outcome column:	See the Excel dataset accompanying this report for full definitions of outcomes, where provided.
Reported change column:	Change reported from pre- to post-intervention period, unless otherwise indicated.

Comparison column:	See the Excel dataset accompanying this report for details of comparison sites, where provided.
Significance column:	See the Excel dataset accompanying this report for details of sample size and measures of uncertainty, where provided.
[n/a]	Not applicable; no information expected.
[n/d]	No data; information missing / not provided.

Table 12: Intervention outcomes, cycling

OUTCOMES: CYCLING					
Project	Intervention period	Outcome	Reported change	Comparison	Significance ***p<0.01 **p<0.05 *p<0.1
Bikeability	2007 – ongoing	Prevalence of cycling among pupils	Intervention schools: a. 45% cycled, past 7 days b. 65% cycled on roads, past 7 days c. 34% cycled since start of term d. 46% cycled on roads since start of term e. 51% cycled with adults / older siblings since start of term	Control schools: a. 37% cycled, past 7 days b. 56% cycled on roads, past 7 days c. 22% cycled since the start of term d. 40% cycled on roads since start of term e. 43% cycled with adults / older siblings since start of term	Difference, intervention and control: a. +8% points* b. +10 points* c. +12% points** d. +7% points e. +8% points
		Frequency of cycling among pupils	Intervention schools: a. 34% cycled at least 3 days, past 7 days b. 18% cycled on roads at least 3 days this term c. 15% cycled at least 3 days in the past 7 days d. 7% cycled on roads at least 4 days/week since start of term e. 7% cycled with adults / older siblings at least 4 days/week since start of term f. 6% used a bike as usual mode of transport to school, past 7 days	Control schools: a. 28% cycled at least 3 days, past 7 days b. 18% cycled on roads at least 3 days this term c. 14% cycled at least 3 days in the past 7 days d. 11% cycled on roads at least 4 days/week since start of term e. 3% cycled with adults / older siblings at least 4 days/week since start of term f. 8% used a bike as usual mode of transport to school, past 7 days	Difference, intervention and control: a. +5% points b. +0% points c. +2% points d. -4% points* e. +4% points* f. -1% points
		Pupils' and parents' confidence about cycling	Intervention schools: a. 73% very or fairly confident riding on roads b. 70% allowed to ride on roads (alone/with friends or with an adult)	Control schools: a. 69% very or fairly confident riding on roads b. 58% allowed to ride on roads (alone/with friends or with an adult)	Difference, intervention and control: a. +3% points b. +12% points*

OUTCOMES: CYCLING

Project	Intervention period	Outcome	Reported change	Comparison	Significance
					***p<0.01 **p<0.05 *p<0.1
Bikeability (continued)	2007 – ongoing	Pupils' knowledge of safety	Intervention schools: 22% know where to look before getting on the road	Control schools: 7% know where to look before getting on the road	Difference, intervention and control: +15%**
		Pupils' perceptions of levels of cycling among their cohort	Intervention schools: 86% say lots of children they know cycle	Control schools: 79% say lots of children they know cycle	Difference, intervention and control: +7% points
Cycle City Ambition Programme ³²	2013 – 2018	Changes in total cycle traffic	Intervention areas: <u>Birmingham:</u> +157% <u>Cambridge:</u> +27% <u>Greater Manchester:</u> +14% <u>Newcastle:</u> +22% <u>Norwich:</u> +25% <u>Oxford:</u> +20%; +22% <u>West of England:</u> 37% <u>West Yorkshire:</u> [n/d]	City-wide trends: <u>Birmingham:</u> +32% <u>Cambridge:</u> +40% <u>Greater Manchester:</u> +40% <u>Newcastle:</u> +12% <u>Norwich:</u> +42% <u>Oxford:</u> +16% <u>West of England:</u> +17% <u>West Yorkshire:</u> +16%	[n/d]
		Levels of mode switch from other modes to bicycle	Intervention areas – change in cycle mode share: <u>Cambridge:</u> +2.4% <u>Greater Manchester:</u> +1.1%; +0.4% <u>Newcastle:</u> +34% <u>All other cities/regions:</u> [n/d]	Intervention areas – change in car mode share: <u>Cambridge:</u> -5.8% <u>Greater Manchester:</u> -5%; +0% <u>Newcastle:</u> -41% <u>All other cities/regions:</u> [n/d]	[n/d]
		Changes in perceptions of cycling safety	People agreeing safety influenced their decision to cycle: <u>Birmingham:</u> +10% points <u>Greater Manchester:</u> +8% points <u>All other cities/regions:</u> [n/d]	[n/d]	[n/d]

³² Reference periods for evaluations vary according to location. See the Excel dataset accompanying this report for details.

OUTCOMES: CYCLING

Project	Intervention period	Outcome	Reported change	Comparison	Significance
					***p<0.01 **p<0.05 *p<0.1
Cycle City Ambition Programme (continued)	2013 – 2018	Changes in perceptions of the convenience of cycling	People agreeing convenience influenced their decision to cycle: <u>Birmingham</u> : +7% points <u>Greater Manchester</u> : +35% points <u>All other cities/regions</u> : [n/d]	[n/d]	[n/d]
Cycle Demonstration Towns & Cycling City & Towns	2005 – 2011 & 2008 - 2011	Cycle traffic: % change in 2011 against baseline	Intervention towns: <u>Darlington</u> : +159% <u>Exeter</u> : +145% <u>Lancaster-with-Morecambe</u> : +129% <u>Shrewsbury</u> : +162% <u>Stoke-on-Trent</u> : +162% <u>York</u> : +106%	Matched areas: <u>Darlington</u> : +150% <u>Exeter</u> : +136% <u>Lancaster-with-Morecambe</u> : +154% <u>Shrewsbury</u> : +122% <u>Stoke-on-Trent</u> : +128% <u>York</u> : +120%	Difference between baseline and 2011, all intervention and matched areas: **
		Cycle traffic: average % change in count per year before and during CDT / CCT programme	Pre-programme period: +3.3%	In-programme period: +6.1%	[n/d]
Linking Communities	2012 – 2014	Annual usage estimates	+31% cycling trips	[n/d]	[n/d]
		Diversified usage estimates	a. +260% in cycling trips, adults 65+ b. +43% in cycling trips, children <16	[n/d]	[n/d]
		Effects on commuters	a. +44% cyclists stated route had helped to access a workplace b. +76% cyclists surveyed stated they used route at least 2-5 times a week c. +2198 estimated additional trips per year by cyclists commuting on these routes	[n/d]	[n/d]

OUTCOMES: CYCLING

Project	Intervention period	Outcome	Reported change	Comparison	Significance
					***p<0.01 **p<0.05 *p<0.1
Local Sustainable Transport Fund	2011 – 2015	Mean number of days cycled in the past month, adults	LSTF areas, LSTF period: <u>Merseyside</u> : +18% <u>Hertfordshire</u> : +20%	Non-LSTF areas, LSTF period: <u>Merseyside</u> : +13% <u>Hertfordshire</u> : +21%	[n/d]
		Cycle traffic: automatic cycle counts	LSTF period: <u>WEST</u> : +23% <u>Nottingham</u> : +34%	Pre-LSTF period: <u>WEST</u> : +11% <u>Nottingham</u> : [n/d]	[n/d]
		Cycle traffic: manual cycle counts	<u>TfGM</u> : +32%	<u>TfGM</u> : [n/d]	[n/d]
Sustainable Travel Towns	2004/5 – 2008/9	Change in number of cycling trips by residents	STTs: Between +26% and 30% across STTs	National trends: -9%, 2004 – 2006	[n/d]
		Change in distance cycled per resident	STTs: Between +28% and +32% across STTs	National trends: -17%, 2004 – 2006	[n/d]
The Big Bike Revival	2015 – 2019	Change in cycling activity	7,334 non-regular cyclists increasing their cycling activity	[n/d]	[n/d]
The National STARS School Travel Awards	2012 – ongoing	Increasing cycling	+59% in average cycling levels for all STARS accredited schools (Bronze, Silver and Gold) from 2012/13 – 2017/18.	[n/d]	[n/d]
TfL Segregated Cycling Infrastructure	2014/15 – 2016/17	Central London cycling metric	+7.2% in daily average kilometres cycled in congestion charging zone	[n/d]	[n/d]
		Volume of cycling traffic: count data	a. +54% in cycle flows, East-West corridor b. +32% in cycle flows, North-South corridor	[n/d]	[n/d]
		Volume of cycling traffic: people per hour	+5% people moving along East-West and North-South corridors per hour	[n/d]	[n/d]
TfL Street Appeal	2008 – 2014	Vehicle movements: cycling mode share	Intervention streets: <u>01 Bromley</u> : 1% <u>02 Hornchurch</u> : [n/d] <u>03 Clapham</u> : 42% <u>04 Woolwich</u> : [n/d]	Comparison streets: <u>01c Orpington</u> : [n/d] <u>02c Upminster</u> : [n/d] <u>03c Camberwell</u> : 9% <u>04c Catford</u> : [n/d]	[n/d]

OUTCOMES: CYCLING

Project	Intervention period	Outcome	Reported change	Comparison	Significance
					***p<0.01 **p<0.05 *p<0.1
			05 Walworth: +5%, 2006 - 2015	05c E. Greenwich: [n/d]	
Cycle to Work Scheme	2009 – ongoing	Change in number of people reporting cycling more often as a direct result of the scheme	<ul style="list-style-type: none"> a. 66% cycling more (9% non-cyclists before scheme; 57% already cyclists) b. 32% cycling a similar amount (2% non-cyclists, 33% already cyclists) c. 2% cycling less 	[n/d]	[n/d]
		Change in distance cycled	After joining the scheme: <ul style="list-style-type: none"> a. Overall: +18 miles b. Non-cyclists: +26.7 miles c. Occasional cyclists: +23.7 miles d. Enthusiastic cyclists: +8.4 miles 	[n/d]	[n/d]

Table 13: Intervention outcomes, walking

OUTCOMES: WALKING

Project	Intervention period	Outcome	Reported change	Comparison	Significance
					***p<0.01 **p<0.05 *p<0.1
Linking Communities	2012 – 2014	Annual usage estimates, route users	-4% walking trips	[n/d]	[n/d]
		Diversified usage estimates, route users	<ul style="list-style-type: none"> a. +306% in walking trips among adults over 65 b. +58% in walking trips among children under 16 	[n/d]	[n/d]
Local Sustainable Transport Fund	2011 – 2015	Levels of walking: mean number of days on which walk trips were reported by adults	Large Project Areas: Trips lasting 10 minutes or more: +2 days Trips lasting 30 minutes or more: +0 days	Non-project, non-London English LAs: Trips lasting 10 minutes or more: +2 days Trips lasting 30 minutes or more: +0 days	Difference, project & non-project areas: Trips lasting 10 minutes or more: p=0.16

OUTCOMES: WALKING

Significance

Project

Intervention period

Outcome

Reported change

Comparison

***p<0.01

**p<0.05

*p<0.1

Trips lasting 10 minutes or more: p=0.44

Sustainable Travel Towns

2004/5 – 2008/9

Change in number of walking trips by residents

STTs:
Between +10% and +13% across STTs

National trends,
-9% in trips, 2004 – 2006

[n/d]

Change in distance walked per resident

STTs:
Between +18% and +27% across STTs

National trends,
-12% in distance walked, 2004 – 2006

[n/d]

The National STARS School Travel Awards

2012 – ongoing

Walking to school

+11.6% in average walking levels (including scooting to school) for schools that have achieved Modeshift STARS, 2012/13 to 2017/18

[n/d]

[n/d]

TfL Street Appeal

2008 – 2014

Street activity: people walking

Intervention streets:
People walking during a 30 min period in late summer/early autumn 2016:

01 Bromley: 145
02 Hornchurch: 64
03 Clapham: 113
04 Woolwich: 215
05 Walworth: 169

Comparison streets:
People walking during a 30 min period in late summer/early autumn 2016:

01c Orpington: 103
02c Upminster: 47
03c Camberwell: 61
04c Catford: 109
05c E. Greenwich: 46

Difference between intervention & comparison streets:

01: +45%
02: +36%
03: +85%
04: +95%
05: +267%

[p values: n/d]

Walk to School Outreach

2018 – 2019

Number of walking trips to school

+50% in number of walking trips recorded (via Travel Tracker app) each day from Sept – Oct 2018.

[n/d]

[n/d]

Walking Cities

2013 – 2015

Change in walking levels

Walk Health, Great Shelford: +50 minutes per week
Cherry Hinton: +73 minutes per week
Sawston: +45 minutes per week

[n/d]

[n/d]

Change in active travel to school / work

Beat the Street: +0 minutes' walk/cycle time to school

[n/d]

[n/d]

OUTCOMES: WALKING

Significance

Project	Intervention period	Outcome	Reported change	Comparison	Significance
			Walk Work Scheme, 2013-14: +0.23% walking to work +4.83 miles average distance walked		***p<0.01 **p<0.05 *p<0.1

Table 14: Intervention outcomes, traffic use / management

OUTCOMES: TRAFFIC USE / MANAGEMENT

Significance

Project	Intervention period	Outcome	Reported change	Comparison	Significance
					***p<0.01 **p<0.05 *p<0.1

Local Sustainable Transport Fund	2011 – 2015	Per capita car traffic	Large Project Areas: -2.6% per capita car traffic	National comparator: -0.3% per capita car traffic	Difference, project areas & comparator group: ***
		Absolute traffic	Large Project Areas: +1.2% absolute traffic	National comparator: +2.9% per capita car traffic	Difference, project areas & comparator group: ***
		Congestion	Large Project Areas: -5.2% average vehicle speeds	National comparator: -3.6% average vehicle speeds	Difference, project areas & comparator group: ***
Sustainable Travel Towns	2004/5 – 2008/9	Change in number of trips by car by residents	STTs: -9% in trips	National trends: -1.2% in trips	[n/d]
		Change in distance travelled by car per resident	STTs: Between -5% and -7% across STTs	National trends: -0.9% in trips	[n/d]
The National STARS School Travel Awards	2012 – ongoing	Reducing car use	-27% in average car usage levels for all STARS accredited schools, 2012/13 to 2017/18	[n/d]	[n/d]
Paths for Communities	2012 – 2014	Number of car journeys directly attributable to the P4C intervention	+20,500 journeys	[n/d]	[n/d]

OUTCOMES: TRAFFIC USE / MANAGEMENT

Project	Intervention period	Outcome	Reported change	Comparison	Significance
					***p<0.01 **p<0.05 *p<0.1
		Number of car journeys avoided because of the P4C intervention	-10,300 journeys	[n/d]	[n/d]
TfL Street Appeal	2008 – 2014	Vehicle movement: cars and taxis	Mode share, intervention streets: <u>01 Bromley</u> : 82% <u>02 Hornchurch</u> : [n/d] <u>03 Clapham</u> : 35% <u>04 Woolwich</u> : 73% <u>05 Walworth</u> : -9%, 2006 - 2015	Mode share, comparison streets: <u>01c Orpington</u> : [n/d] <u>02c Upminster</u> : [n/d] <u>03c Camberwell</u> : 61% <u>04c Catford</u> : [n/d] <u>05c E. Greenwich</u> : [n/d]	[n/d]

Table 15: Intervention outcomes, public transport

OUTCOMES: PUBLIC TRANSPORT

Project	Intervention period	Outcome	Reported change	Comparison	Significance
					***p<0.01 **p<0.05 *p<0.1
Local Sustainable Transport Fund	2011 – 2015	Absolute bus journeys	Large Project Areas: -0.3% in absolute journeys	National comparator: -6.2% in absolute journeys	Difference, project areas & comparator group: ***
		Per capita bus journeys	Large Project Areas: -3.3% in per capita journeys	National comparator group: -8.5% in per capita journeys	Difference, project areas & comparator group: ***
Sustainable Travel Towns	2004/5 – 2008/9	Change in number of trips by bus by residents	STTs: Between +10% and +22% across STTs	National trends: -0.5% in trips	[n/d]
		Change in distance travelled by bus per resident	STTs: Between +30% and 41% across STTs	National trends: +12% in distance travelled	[n/d]

Table 16: Intervention outcomes, multi-modal

OUTCOMES: MULTI-MODAL					
Project	Intervention period	Outcome	Reported change	Comparison	Significance ***p<0.01 **p<0.05 *p<0.1
Paths for Communities	2012 – 2014	Change in the number of trips since P4C changes: existing users	+35,200 trips per annum	[n/d]	[n/d]
		Change in the number of trips since P4C changes: new users	+44,200 trips per annum	[n/d]	[n/d]
		Change in levels of satisfaction with the PROW	<ul style="list-style-type: none"> a. <u>Very dissatisfied</u>: -4% points b. <u>Generally dissatisfied</u>: -19% points c. <u>Neither</u>: -16% points d. <u>Generally satisfied</u>: -11% points e. <u>Very satisfied</u>: +48% points 	[n/d]	[n/d]

Table 17: Intervention outcomes, employment-related

OUTCOMES: EMPLOYMENT-RELATED					
Project	Intervention period	Outcome	Reported change	Comparison	Significance ***p<0.01 **p<0.05 *p<0.1
Linking Communities	2012 – 2014	Economic effects	<ul style="list-style-type: none"> a. +34% points in cyclists stating schemes had helped them to access workplaces b. +31% points in cyclists stating they were using the scheme to get to work 	[n/d]	[n/d]
Sustainable Travel Towns	2004/5 – 2008/9	Supporting economic growth: reducing congestion	STTs: Between -7% and -8% in traffic count data across STTs	[n/d]	[n/d]

		Supporting economic growth: reducing car use for journeys to schools	STTs: Between -9 and -17% across STTs	[n/d]	[n/d]
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Table 18: Intervention outcomes, environmental

OUTCOMES: ENVIRONMENTAL					
Project	Intervention period	Outcome	Reported change	Comparison	Significance
					***p<0.01 **p<0.05 *p<0.1
Cycle City Ambition Programme	2013 – 2018	Changes in perceptions of public spaces, one-year post-intervention	<u>Birmingham</u> : +10% points in people agreeing quality of surroundings influenced their decision to cycle	[n/d]	[n/d]
Linking Communities	2012 – 2014	Environmental benefits	-52 tonnes of CO ₂ emissions per year (based on walking and cycling replacing 54,973 car trips) across Linking Communities locations	[n/d]	[n/d]
Sustainable Travel Towns	2004/5 – 2008/9	Reducing carbon emissions	-17,510 tonnes of carbon dioxide per annum across STTs in 2008	[n/d]	[n/d]

Table 19: Intervention outcomes, health and wellbeing

OUTCOMES: HEALTH AND WELLBEING					
Project	Intervention period	Outcome	Reported change	Comparison	Significance
					***p<0.01 **p<0.05 *p<0.1
Linking Communities	2012 – 2014	Effects on health and wellbeing	<ul style="list-style-type: none"> a. +18% respondents stated the route helped them to get regular exercise b. +24% points in respondents stating health benefits are the reason they had chosen not to use a car to make their journey c. +7% respondents describing their 	[n/d]	[n/d]

			health as good, very good or excellent		
Sustainable Travel Towns	2004/5 – 2008/9	Increasing health	STTs: a. -11% of people reporting they 'almost never' walked or cycled, 2004 – 2008 b. +6% of people reporting they walked or cycled 'almost daily', 2004 – 2008	[n/d]	[n/d]

Table 20: Intervention outcomes, behaviour change

OUTCOMES: BEHAVIOUR CHANGE					
Project	Intervention period	Outcome	Reported change	Comparison	Significance
		Participation in cycling among adults	a. +3.3% points, baseline to midline (2006 – 2009) b. -0.5% points, baseline to endline (2006 – 2011)	[n/d]	***p<0.01 **p<0.05 *p<0.1
Cycle Demonstration Towns & Cycling Cities and Towns	2005 – 2011 & 2008 – 2011	Participation in cycling among children: usual mode of travel to school	CDTs: a. +0.7% in proportion of primary school pupils usually travelling to school by bike, 2007-11 b. +1.1% in proportion of secondary school pupils usually travelling to school by bike, 2007-11 CCTs: a. +0.6% in proportion of primary school pupils usually travelling to school by bike, 2007-11 b. +3.6% in proportion of secondary school pupils usually travelling to school by bike, 2007-11	Towns matched to CDTs: a. -0.1% in proportion of primary school pupils usually travelling to school by bike, 2007-11 b. +0.7% in proportion of secondary school pupils usually travelling to school by bike, 2007-11 Towns matched to CCTs: a. +0.6% in proportion of primary school pupils usually travelling to school by bike, 2007-11 b. -0.1% in proportion of secondary school pupils usually	Increase in proportion of children cycling to primary and secondary schools, CDTs & CCTs: ** Increase in proportion of children cycling to secondary schools, CDT matched towns: ** Increase in proportion of children cycling to

OUTCOMES: BEHAVIOUR CHANGE

Project	Intervention period	Outcome	Reported change	Comparison	Significance
					***p<0.01 **p<0.05 *p<0.1
				travelling to school by bike, 2007-11	primary schools, CCT matched towns: **
		Participation in cycling among children: pupils cycling to school every day	CDTs: +5.6% in children who cycled to school 'every day' CCTs: +5.5% in children who cycled to school 'every day'	[n/d]	CDTs pre/post intervention difference: ** CCTs pre/post intervention difference: **
The Big Bike Revival	2015 – 2019	Change in levels of exercise	20,908 beneficiaries exercising more	[n/d]	[n/d]
Cycle to Work Scheme	2009 – ongoing	Changing behaviours	a. 40% of scheme users who considered themselves or occasional cyclists now consider themselves enthusiastic cyclists b. 54% of scheme users did not cycle to work before signing up to the scheme c. 72% of scheme users said they would not have bought their bike if it had not been available through the scheme	[n/d]	[n/d]

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Appendix A. Studies included in data extraction

Project	Study references
Access Fund	<p>101a. DfT (2018) <i>Access Fund: Year One Monitoring and Evaluation Progress (2017/18)</i>. Unpublished report.</p> <p>101b. DfT (2019) Access Fund Outputs Survey data, 2016/17-2018/19. Internal data provided by DfT.</p>
Bikeability	<p>102a. DfT (2019) <i>Bikeability Impact Study: Final Report</i>. London: DfT.</p> <p>102b. Bikeability (2019) Bikeability website, https://bikeability.org.uk/. Accessed 09 August 2019.</p> <p>102c. DfT (2017) <i>Cycling and Walking Investment Strategy: Investment Inputs, Outputs and Outcomes</i>. London: DfT.</p>
Cycle City Ambition Programme	<p>103a. Sloman, L., Riley, R., Dennis, S., Hopkinson, L., Goodman, A., Farla, K. and Hiblin, B. (2019) <i>Cycle City Ambition Programme: Interim Report</i>. Machynlleth: Transport for Quality of Life.</p> <p>103b. DfT (2019) Cycle City Ambition Grant Programme - Outputs and Progress Survey Data, January 2019. Internal data provided by DfT.</p> <p>103c. DfT (2017) <i>Cycling and Walking Investment Strategy: Investment Inputs, Outputs and Outcomes</i>. London: DfT.</p>
Cycle Demonstration Towns & Cycling Cities and Towns	<p>104a. Sloman L, Cope A, Kennedy A, Crawford F, Cavill N and Parkin J (2017b) <i>Summary of outcomes of the Cycling Demonstration Towns and Cycling City and Towns programmes</i>. Machynlleth: Transport for Quality of Life.</p> <p>104b. Sloman, L., Cope, A., Wilson, A., Crawford F., Cavill, N. and Parkin, J. (2012) <i>Summary of outcomes of the Cycling Demonstration Towns and Cycling City and Towns programmes. Report for Department for Transport</i>. Machynlleth: Transport for Quality of Life.</p>
Cycle Rail Fund	<p>105a. DfT (2019) Cycle Rail Fund Awards Data, 2019. Data provided by DfT.</p> <p>105b. DfT (2014) <i>Cycle Rail Fund - Guidance on Applications for Funding in 2015/16</i>. London: DfT.</p>
Cycling and Accessibility	<p>106. Highways England (2018) <i>Cycling and Accessibility: Annual Progress Report</i>. Guildford: Highways England.</p>
Linking Communities	<p>107. Sustrans (2016) <i>Improving access for local journeys: Linking Communities 2013-14 impact report</i>. Bristol: Sustrans.</p>
Local Sustainable Transport Fund	<p>108a. Sloman, L., Cairns, S., Goodman, A., Hopkin, J., Taylor, I., Hopkinson, L., Ricketts, O., Hiblin, B., Dillon, M. (2018) <i>Impact of</i></p>

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	<p>the Local Sustainable Transport Fund: Synthesis of Evidence. Report to the Department of Transport.</p> <p>108b. Sloman, L., Cairns, S., Goodman, A., Hopkin, J., Taylor, I., Hopkison, L., Ricketts, O., Hiblin, B., Dillon, M. (2017a) <i>Meta-analysis of Outcomes of Investment in the 12 Local Sustainable Transport Fund Large Projects: Final Report to the Department of Transport</i>. Machynlleth: Transport for Quality of Life.</p>
Sustainable Travel Towns	<p>109a. Cairns, S & Jones, M (2016). <i>Sustainable Travel Towns: An evaluation of the longer-term impacts. Main report</i>. Report for the Department for Transport, PPR776, ISBN: 978-1-910377-58-1.</p> <p>109b. Sloman, L, Cairns, S., Newson, C., Anable, J., Pridmore, A. & Goodwin, P. (2010) <i>The effects of the Smarter Choices Programmes in the Sustainable Travel Towns. Summary Report</i>. Machynlleth: Transport for Quality of Life.</p>
The Big Bike Revival	<p>201a. Cycling UK (2018) <i>Proposal and Costings: Big Bike Revival 2019</i>. Guildford: Cycling UK.</p> <p>201b. Cycling UK (2017) <i>Proposal and Costings: Big Bike Revival 2018</i>. Guildford: Cycling UK.</p> <p>201c. Richardson, I. (2015) <i>The Big Bike Revival: Pilot Report and National Scale Business Case</i>. Guildford: Cycling UK.</p> <p>018d. DfT (2017) <i>Cycling and Walking Investment Strategy: Investment Inputs, Outputs and Outcomes</i>. London: DfT.</p>
The National STARS School Travel Awards	<p>202. Modeshift (2019) <i>The National STARS School Travel Awards</i>. Darlington: Modeshift.</p>
Paths for Communities (P4C)	<p>203. Department for Environment, Food and Rural Affairs (2014) <i>Paths for Communities End of Scheme Report</i>. London: DEFRA.</p>
TfL Segregated Cycling Infrastructure	<p>204. TfL (2018) <i>Segregated Cycling Infrastructure: understanding cycling levels, traffic impacts, and public and business attitudes</i>. London: City Planning, Transport for London.</p>
TfL Street Appeal	<p>205. Camona, M., Gabrieli, T., Hickman, R., Laopoulou, T. & Livingstone, N. (2018) 'Street Appeal: the value of street improvements', <i>Progress in Planning</i> 126: 1 – 51.</p>
Walk to School Outreach	<p>206. Living Streets (2018) <i>Walk to School Outreach 2018/19: Interim Project Report</i>. London: Living Streets.</p>
Walking Cities	<p>207a. Hanson & Jones (2016) <i>A report on the Department of Health 'Walking Cities' initiative in Birmingham, Cambridge, Leeds and Bradford, Norwich and Manchester</i>. Norwich: UEA.</p> <p>207b. Living Streets (2014) <i>Creating more active communities. Walking Cities Interim Report: Evaluation Summary and Recommendations</i>. London: Living Streets.</p>
Cycle to Work Scheme	<p>301. Swift, S., Green, M., Hillage, J., and Nafilyan, V. (2016) <i>Impact of the Cycle to Work Scheme Evidence Report</i>. Brighton: Institute for Employment Studies.</p>

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Healthy New Towns	303a. NHS England (2017) <i>Putting Health into Place: Introducing NHS England's Healthy New Towns programme</i> . London: NHS England. NHS England Publications Gateway Reference: 08473. 303b. NHS England (2019) 'Healthy New Towns' webpage, https://www.england.nhs.uk/ourwork/innovation/healthy-new-towns/ . Accessed 12.07.19.