



Department  
for Transport

# Value for Money Assessment for Cycling Grants

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# 1. Background

- 1.1** The coalition agreement has set out the Government's commitment to promote cycling and walking explicitly stating that it will 'Support sustainable travel initiatives, including the promotion of cycling and walking'. Demonstrating that support, in February 2013, the Department for Transport (DfT) announced the Cycle City Ambition Grant and the Cycling in National Parks Grant as a single fund of £42 million for capital expenditure on cycling and walking infrastructure. Additional funding was later identified to bring the total up to £94m.
- 1.2** The Cycle City Ambition Grant was formulated in order to support the first two years of a transformational long term cycling strategy. This was linked to the 'City Deals' wherein the Government had been talking to individual cities to negotiate tailored city deals with the aim of unlocking economic potential. The fund was open to the major cities involved in this initiative, with these cities invited to set out ambitious long term plans to increase cycling.
- 1.3** The Cycling in National Parks Grant bidding process was open to all nine National Parks in England. The focus for investment was to support increases in cycle trips to, from and around National Parks, linking communities and supporting the sustainable tourism economy.
- 1.4** The bids from cities for the Cycle City Ambition Grant detailed compelling proposals to increase cycling in ways that would support local economic growth, reduce carbon emissions and improve the health and wellbeing of their residents. The National Parks submitted proposals for a range of facilities, including new and improved cycle routes and better integration between cycling and other modes of travel.
- 1.5** The Prime Minister announced the successful schemes in the briefing on the Government's ambition for cycling on August 12th 2013<sup>1</sup>. Eight<sup>2</sup> cities were awarded a total of £77m and four<sup>3</sup> National Parks received £17m of funding. Including local contributions, these twelve schemes represent a total of just below £150m investment in cycling.
- 1.6** 30 bids were received and the decision on which to invest in was based on assessment of each submitted bid's business case. Officials in the Department evaluated all submissions against each of the five elements

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<sup>1</sup> <https://www.gov.uk/government/news/government-shifts-cycling-up-a-gear>

<sup>2</sup> The cities that received funding were: Birmingham, Bristol, Cambridge Leeds, Manchester, Newcastle, Norwich and Oxford

<sup>3</sup> The National Parks that received funding are: Dartmoor, New Forest, Peak District and South Downs

of The Department's transport business case: strategic, economic, financial, management and commercial cases.

- 1.7** This note summarises the analysis and evidence included in the economic cases of the successful bids and briefly explains the methods used to support the analysis. This includes the final benefit cost ratios (BCRs), the main types of benefits behind both cities and National Parks schemes as well as the assumptions used within the appraisal.

## 2. Value for Money assessment

### Background

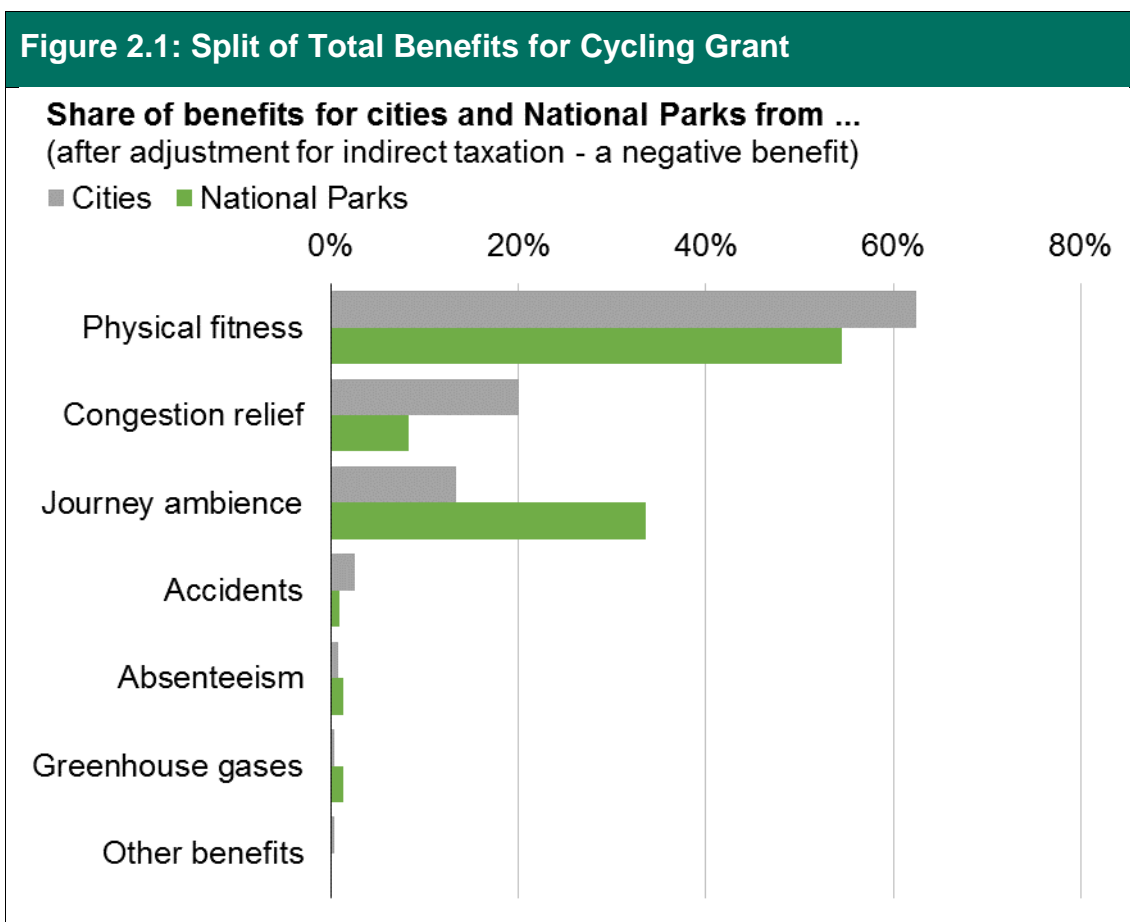
- 2.1** Bidders were required to submit information on the impacts expected from their proposals and to set out the evidence base for these estimates. The bidding guidance encouraged the use of proportionality by focussing on the benefits (or disbenefits) likely to be most significant.
- 2.2** To minimise the burden on bidders, The Department published a scheme impacts pro-forma in which bidders were required to set out the basic information that would enable assessment of all bids in a consistent manner. The pro-forma is attached at Annex 2.
- 2.3** Bidders were further asked to submit an economic appraisal report explaining the evidence used. Some bidders provided fully worked up appraisals while others simply submitted the pro-forma with supporting evidence as required. Where appraisals were submitted, it was not always clear that consistent assumptions had been used.
- 2.4** Economists within the Department scrutinised the submitted pro-formas, the evidence base and were applicable the submitted appraisals. The predicted outcomes were benchmarked to those observed from existing schemes and between the bids and submitted data compared to publically available sources to ensure realistic values were used. Where the submitted estimates (e.g. on existing and additional cyclists) were found to be credible, the information was used alongside the methodologies recommended in WebTAG unit A5-1 (active mode appraisal) to monetise the estimated impacts and to calculate cost benefit ratios.
- 2.5** WebTAG A5-1 provides approaches for monetising health and absenteeism benefits from increased physical activity, journey ambience impacts, direct road safety impacts and the benefits associated with mode shift away from car use (environmental, decongestion, indirect road safety and indirect taxation).

### Overall Results

- 2.6** This section summarises the results of the assessment separately for the cities and National Parks that received funding. Not all bids included evidence against all benefits. Rather than seeking alternative sources of evidence, benefits were not estimated in these cases even if this clearly resulted in underestimating the total merits of the proposal. While, for

example, the Oxford scheme shows no decongestion benefits, the scheme is likely to lead to reduced motorised traffic through modal shift. However, as it was not a key focus for the scheme, no evidence had been submitted. Annex 1 provides details of estimated benefits on a scheme by scheme basis.

**2.7** Figure 2.1 shows the overall split of benefits for funded Cycle City Ambition schemes and the National Park schemes.



**2.8** Over 60% of benefits estimated for the Cycle City Ambition Grant come from increased physical fitness. The four National Park schemes similarly show a majority of benefits derived from increased physical activity. While the second most substantial driver of benefits is decongestion in cities, journey quality is more important in the National Parks.

**2.9** Tables A1.1 and A1.2 in the annex provides the same data individually for each of the twelve schemes funded. Across the different cities the balance of benefits varies considerably, depending on the particular focus of the intervention. Both decongestion and road safety benefits provide over half the total in individual schemes.

**2.10** Across the National Parks, however, journey quality and health benefits consistently provide for at least 75% of the benefits estimated, while the other categories are less important drivers here.

**2.11** As a package, the Cycle City Ambition Grant is expected to deliver around five pounds of benefits for each pound invested with individual

schemes' benefit cost ratios (BCRs) ranging from just above 2:1 to in excess of 30:1.

- 2.12** The four National Park schemes are as a package expected to provide more than seven pounds of benefits per pound invested, with the individual BCRs ranging between 3:1 and 13:1.
- 2.13** The following sections discuss the different types of benefits and explain some of the assumptions underlying their monetisation.

## Health Benefits

- 2.14** In both cities and National Parks, the largest share of expected benefits comes from the positive impact increased physical activity has on health. The monetisation of these benefits follows the World Health Organisation's HEAT tool (health economic assessment tool)<sup>4</sup>.
- 2.15** The HEAT tool is based on evidence showing that people who are more physically active have a lower rate of premature death when compared to less active individuals. The tool provides a formula to translate increases in cycling or walking (minutes of activity) into a reduction in the individual's risk of premature mortality.
- 2.16** Across all users of a scheme this reduced risk can be expressed as the number of lives saved due to the intervention. Using values for the avoidance of a fatality from WebTAG (unit 4.1) allows monetisation the benefit.
- 2.17** The HEAT tool uses a linear relation between activity level and risk reduction. This suggests that small amounts of daily activity have the same benefits as less frequent but more substantial efforts.

In practice this means that one does not need to know if the new cyclists are few but regular cyclists or many people cycling less frequently. This was important in assessment of the bids, as it allowed the same method to be used for schemes targeted at (frequent) commuters in cities as for (occasional) tourists in National Parks.

- 2.18** This approach only represents the benefit to society of reduced premature mortality. It does not account for the benefit of improved health itself (reduced morbidity) to either the individual, their employer or the NHS. The evidence on this is still developing.
- 2.19** The estimated benefit from the grants is further limited to the additional activity on the particular cycle routes directly benefitting from the investment. However, it is likely that people who take up cycling due to these improvements will become more confident in general and start cycling on other routes or for other purposes as well. People trying out

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<sup>4</sup> The HEAT methodology is integrated within WebTAG unit A4.1.



cycling while on holiday in the National Parks might for example take up cycling for commuting as a result of a positive experience.

- 2.20** Finally it is assumed that new users of cycling infrastructure undertake more physical activity as a result of the scheme rather than reduce their activity levels elsewhere (e.g. stop going to the gym).

## Benefits of Reduced Car Use

- 2.21** The next most significant benefit is decongestion and the related environmental benefits. Not surprisingly this is significantly more important in cities that experience higher level of car use and congestion to start with. Not all bids included estimates for how many car journeys might be taken off the road.
- 2.22** The reduction in car traffic expected also drives the forecast of noise, greenhouse gas and air pollution benefits as well as the indirect tax impacts. Reduced car traffic is also expected to reduce accidents. WebTAG unit A5.4 provides standard values for each of these impacts for every vehicle Km taken off (or added to) the road.
- 2.23** Where schemes include measures explicitly addressing road safety issues, additional evidence on the reduction in accident risks has been considered along with data on historic incidents. WebTAG unit 4.1 contains suggested values for monetising the reduction in future accidents.

## Journey Ambience

- 2.24** Journey ambience benefits occur when a scheme provides an improved environment for cyclists to enjoy during their journey, compared to the situation before the changes. Examples of this might include a more scenic route but more typically represent a feeling of improved safety due to being physically segregated from motorised traffic or having a smoother ride surface. Similarly secure cycle storage or shower facilities and lockers at their workplace improve the quality of cyclists' experience.
- 2.25** The proposals received from the National Parks typically scored more highly on journey ambience benefits as in many cases the improved routes are generally free from motorised traffic and provide a step change compared to the current situation.

## General Appraisal Assumptions

- 2.26** Our analysis is based on the assumption that the infrastructure delivered by these grants has a useful life of at least 30 years. Benefits and costs have been estimated over that period and discounted to 2010 values using the 3.5% discount rate recommended in WebTAG and the

Treasury's Green Book<sup>5</sup>, the guidance for appraisal in Central Government.

- 2.27** The financial costs estimates provided have been converted into market prices and discounted and deflated to 2010 values and prices. An optimism bias uplift of 15% has been applied to account for likely cost escalation. This is a standard approach for schemes that are still fairly early in the design and planning process.
- 2.28** The appraisal considers all costs and benefits to society. In order to compare costs and benefits in the form of BCRs, we consider costs to the wider transport sector (i.e. both Central and Local Government) as costs in the denominator, while private sector contributions and indirect tax losses are accounted for as negative benefits in the numerator.

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<sup>5</sup> <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

## 3. Summary

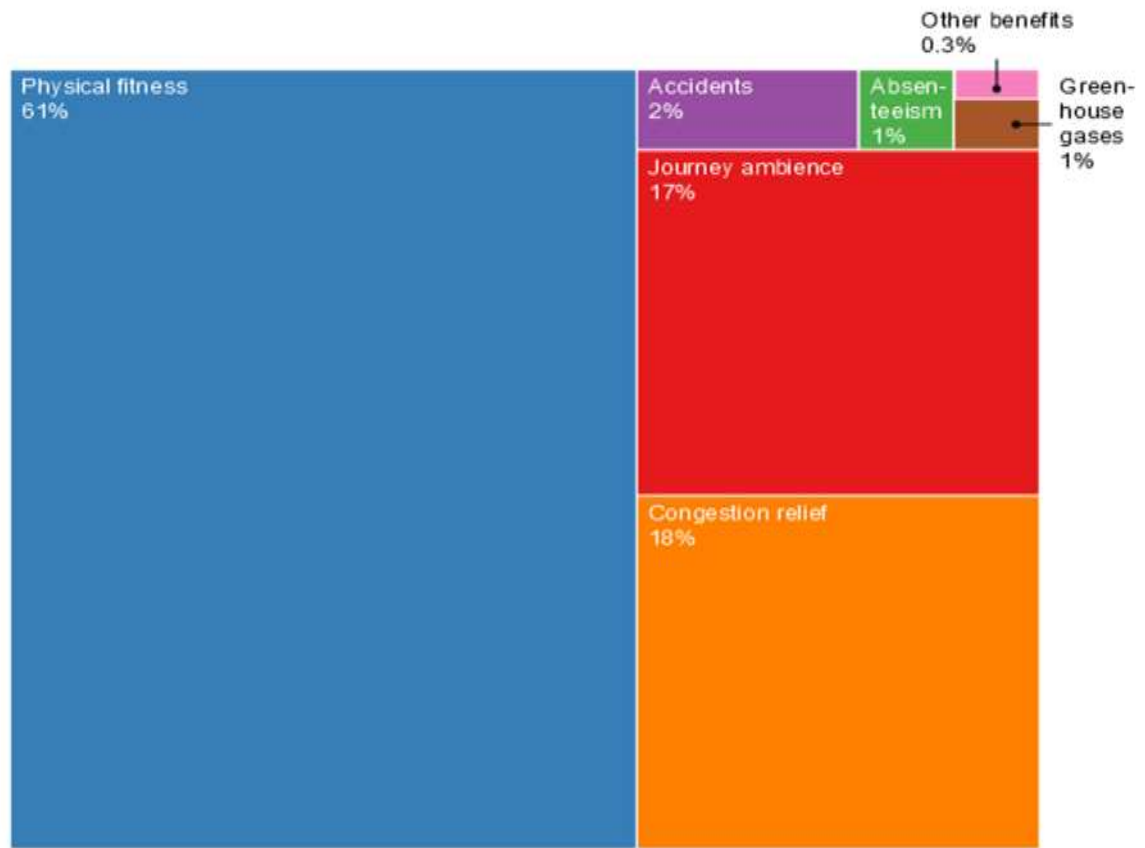
- 3.1** The combined BCR for the funding stream as a whole, both under Cycle City Ambition Grant and Cycling in National Park Grant, is 5.5:1 which suggests that for every £1 of public money spent, the funded schemes provide £5.50 worth of social benefit. The analysis suggests that non-monetised impacts are likely to be minor<sup>6</sup> and overall positive. The grants are therefore considered to deliver very high value for money.
- 3.2** Figure 3.1 summarises the previous chart showing the overall balance of benefits with around 60% accounted for by improved physical fitness and roughly equal shares for journey quality and decongestion.
- 3.3** The data from the evaluation of the Cycling Demonstration Towns programme has previously been used to estimate a 30 year BCR range for that programme of between 4.7 and 6.1<sup>7</sup>. The appraisal evidence from the cycle grants summarised here confirms this, with the overall BCR in the middle of that range. This provides further confirmation that targeted investment into cycling can bring very strong returns to society.

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<sup>6</sup> Apart from the likely additional benefits of increased physical activity not accounted for within the HEAT methodology.

<sup>7</sup> <http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/cyclingengland/site/wp-content/uploads/2010/02/091223-cdts-bcr-analysis-final-edit.pdf>

Figure 3.1: Split of Total Benefits for Both Grants



## 4. Annex 1: Detailed results

**A.1** The table A1.1 below provides the detailed benefits estimated and the resulting benefit cost ratios for the eight Cycle City Ambition schemes.

<b>Table A1.1: Monetised benefits for funded schemes under the Cycle City Ambition Grant ('000£)</b>									
	Birmingham	Bristol	Cambridge	Leeds	Manchester	Newcastle	Norwich	Oxford	Total
Noise	46	979	36	123	193	0	0	0	1,378
Local Air Quality	7	489	6	3	915	0	0	0	1,420
Greenhouse Gases	1,086	215	855	364	77	127	0	0	2,723
Journey Ambience	15,353	2,226	31,929	35,538	11,881	6	1,954	494	99,381
Accidents	741	3,026	583	6,096	1,932	0	5,902	728	19,008
Physical Fitness	33,387	58,540	169,719	13,434	149,765	22,756	1,727	14,884	464,212
Absenteeism	1,735	0	2,984	693	0	0	99	774	6,285
Congestion relief	7,054	66,961	5,554	15,177	49,784	4,418	473	0	149,422
Indirect Taxation	-1,656	-2,877	-1,304	-1,806	0	0	0	0	-7,644
Third Party contribution	-500	0	-5,023	0	0	0	0	-60	-5,582
Present Value Benefits	57,252	129,559	205,339	69,622	214,545	27,307	10,156	16,820	730,602
Present Value Costs	25,041	31,800	5,742	32,822	30,024	11,812	4,285	1,017	142,543
BCR	<b>2.3</b>	<b>4.1</b>	<b>35.5</b>	<b>2.1</b>	<b>7.1</b>	<b>2.3</b>	<b>2.4</b>	<b>16.5</b>	<b>5.1</b>

**A.2** Table A1.2 provides the same data for each of the four National Park schemes funded.

<b>Table A1.2: Monetised benefits for funded schemes under the Cycling in National Parks Grant ('000£)</b>					
	Dartmoor	New Forest	Peak District	South Downs	Total

Noise	16	0	82	1	99
Local Air Quality	3	0	17	0	21
Greenhouse Gases	377	0	1,928	12	2,318
Journey Ambience	24,897	3,918	8,511	23,866	61,192
Accidents	257	0	1,315	8	1,581
Physical Fitness	62,128	7,207	28,082	1,916	99,332
Absenteeism	1,866	377	236	71	2,549
Congestion relief	2,452	0	12,524	81	15,057
Indirect Taxation	-576	0	-2,941	-19	-3,536
Third Party contribution	-2	-3	-1	-277	-282
Present Value Benefits	91,419	11,499	49,754	25,660	178,331
Present Value Costs	6,910	3,985	7,693	5,520	24,109
<b>BCR</b>	<b>13.2</b>	<b>2.9</b>	<b>6.5</b>	<b>4.6</b>	<b>7.4</b>

# 5. Annex 2: Scheme impacts proforma

**Figure A2.1: Split of Total Benefits for Both Grants**

Please provide one Pro Forma for each element of your scheme (e.g. each route) as well as for the aggregate impact.

Input data	Without Scheme	With Scheme	Reference to supporting information (e.g. section of Economic Assessment Report).
Description of infrastructure/activities	Describe the experience of cyclists without implementation of the scheme	Describe the experience of cyclists after implementation of the scheme	e.g. cycling along general traffic/in bus lane/parking bays on lamprosecure cycle racks etc - refer to section 4.9 of the TAG 3.4.1. please provide reference to more detailed description.
Route length (km)			Refer for more detailed description (and maps etc). Not expected to change unless new routes provided.
Average trip length (km)			In the absence of local data (e.g. from survey), National Travel Survey has average trip lengths and trips time: <a href="http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/150306">http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/150306</a> has average distance per cycle trip. Again, not expected to change unless users re-route onto new/improved route.
Average cycling speed			E.g. from visual inspection/automatic count/speed cameras - please note the NTS data on distance and time are not sufficiently robust to be combined to get a robust estimate for average speed.
Number of users (per day)			E.g. from Automatic Cycling Counters or an appropriate sample of annual counts. Given cycling is highly seasonal, adjustments might be needed to account for that if e.g. a survey was undertaken in winter.
Percentage of additional cyclists that would have driven a car otherwise.	NA.		Refer to evidence for this assumption.
Car Traffic vehicle kilometres (per average day)			E.g. from local automatic traffic counters or from national datasets e.g. <a href="http://www.dft.gov.uk/traffic-counts/formajorroads">http://www.dft.gov.uk/traffic-counts/formajorroads</a> . Please provide reference to full explanation of any/reduction expected.