

Economic Appraisal of local walking and cycling routes

Summary

The sustainable transport charity Sustrans has taken the Government's own methods of assessing the economic benefits of transport schemes and applied them to a number of local walking and cycling routes. The results show them to have a benefit to cost ratio of 20:1. This is in stark contrast to the typical ratio of just 3:1 for other transport schemes such as rail and roads.

Sustrans' analysis shows how money spent on creating the right environment to encourage more walking and cycling could result in massive cost savings for the Treasury and major benefits to public health.

Background

During 2005, Sustrans, the Institute for Transport Studies at Leeds University, and the University of Bolton, produced guidance notes for the economic appraisal of cycling and walking schemes on behalf of the Department for Transport (DfT). The guidance is consistent with the government's New Approach to Transport Appraisal suite of tools, and is intended to form part of the DfT's WebTAG series which advises on methods of economically appraising transport schemes.

Sustrans' involvement in the process came about following a request by the DfT to conduct an appraisal of a proposed programme of walking and cycling schemes linking communities to schools the charity had carried out during the summer of 2004.

The programme of schemes was approved and funded by the DfT to the value of £10 million in late 2004 and early 2005. Sustrans administered the grant, giving awards to qualifying projects nominated by local authority partners.



In total, 146 grants provided over 300 community cycling and walking links to the National Cycle Network under the project title Links to Schools.

The individual schemes varied, but generally involved construction of new traffic-free routes, or the improvement of existing routes, in the immediate vicinity of schools in urban areas. As a result of match-funding contributions from local authorities, the final value of the programme was £26.1 million.

This report gives the results generated by applying the new economic appraisal methodology to three of the Links to Schools projects for illustrative purposes. Wherever possible researchers used data collected before each project began and immediately following completion.

Monitoring Arrangements

For the purpose of this analysis three different types of scheme have been selected, reflecting a range of capital costs, geographical distribution and a mix of schools being linked to their community.

Monitoring consisted of surveys and manual counts of walkers and cyclists using the routes at selected sites. Where an existing path was being improved data was collected before and after the changes were made. Where new routes were constructed, data could only be collected after the intervention. Data were collected in autumn 2004, summer 2005 and autumn 2005 and written-up in a series of survey reports.

It is assumed that the data collected at a point on a route are representative of usage on a whole route. This assumption is appropriate for shorter routes, although it is anticipated that it may result in underestimates in usage levels for longer routes, where there are numerous points where people can join or leave the route at various distances from the count site, and a considerable degree of variability in usage density.

Additional cycling data are also being collected on the routes by automated continuous cycle counts. The data from these counters are not yet available, but will eventually aid further analysis of the effectiveness of the schemes.



The three case studies

The nature of each of the three schemes is very different, and the cost of each varies to illustrate this diversity. There is also an element of geographical distribution in the case study selection.

1. Bootle: This scheme consists of a series of improvements to an existing route close to a number of schools. The improvements include resurfacing, some new construction, road marking, signing and lighting. The grant awarded was £131,000 towards an overall project cost of £231,000.
2. Hartlepool: This scheme involved the construction of a toucan crossing close to a primary and a secondary school, with some more general infrastructure improvements in the immediate vicinity. The grant awarded was £25,174 towards an overall project cost of £50,349.
3. Newhaven: A new shared-use path in an existing grassed verge adjacent to, and set back from, the busy A259 was constructed. The route is some distance from, but forms a link between, two secondary schools. It also links to their communities of Seaford and Newhaven. The grant awarded was £125,000 towards an overall project cost of £300,000.

The schemes all have high net present values of benefits in relation to costs, and show extremely favourable benefit to cost ratios.

	Case study 1	Case study 2	Case study 3
Present value of benefits	£12,601,051	£5,766,824	£16,782,954
Present value of costs	£430,294	£177,224	£1,126,014
Net present value	£12,170,757	£5,589,600	£15,656,940
Benefit to cost ratio	29.3	32.5	14.9



Benefit to cost ratios of the schemes are far higher than those typically shown for road schemes and public transport schemes – it is rare for the benefit to cost ratios for such to approach 10:1, and they are usually less than 3:1.

As much as half of the net present value of the routes may be realised in terms of savings to the health services. The evaluation includes an estimate of likely savings made due to a reduction in the number of deaths from coronary heart disease, stroke and colon cancer, all of which are major causes of mortality that can be countered by physical activity. Additionally, the evaluation did not include the environmental benefits in, for example, reduced pollution and CO₂ emissions. By adding in these benefits the ratio would have been even more favourable.

The combined net present value of the three schemes presented as case studies is £33,417,297, at a cost of £1,733,532, and the benefit to cost ratio is 20:1.

These figures suggest that the net present value of the entire £26.3 million scheme, from which these three case studies were taken, exceeds £1.5 billion.

It should be noted that limitations to some of the valuations used lead us to conclude that the value of the benefits associated with the programme may be underestimated.

Conclusion

Sustrans will continue to apply this analysis to other walking and cycling routes across the National Cycle Network. It sees this work as crucial in providing the evidence that creating the right environment for walking and cycling should be central to all transport plan.

