MTRU

South Shore path improvements economic report

MTRU November 2019

Introduction and Summary

This report undertakes an economic analysis of the South Shore multi-use path proposals, currently costed at £1,407,644 including optimism bias. The report uses the DfT's Active Mode Appraisal Toolkit and a separate wider economic impacts assessment in line with DfT's WebTAG guidance. There is thus a standard DfT assessment, including a benefit to cost ratio (BCR) plus a separate estimate of the potential economic impact. The latter is careful to distinguish the different categories of benefit:

- Positive local impacts
- Negative impacts in places from which visitors might be displaced
- Net gains to the UK economy (through non-UK visitors and efficiency improvements).

While the inputs for the DfT Toolkit can be calculated using local data, the economic analysis is more complex and, given the modest cost of the scheme, it would be disproportionate to undertake a full economic study. It is therefore subject to greater uncertainty and this is explored later in the report. However, it is clear that there would be substantial benefits and some work with local businesses was undertaken to explore this in more detail.

However, the results from the DfT Toolkit are sufficient without any wider benefits to suggest a strong value for money performance with a central estimate BCR of 4.90 – clearly in the highest DfT category[1]. Strong performance of this type is quite normal for active mode schemes (such as walking and cycling improvements).

In this case there are also issues outside the toolkit, for example road safety issues on the parallel local road network. The specific safety and deterrence effects which could be avoided if the segregated path were built (rather than a generalised average) have not been included so the assessment is conservative in this regard.

Sensitivity tests have been conducted, which show a robust performance. The low to high assumptions produced a range of 3.51 to 6.27, creating confidence that the central assumption of 4.90 provided a reliable guide for the appraisal.

Finally an option comparison was produced, with a lower cost option returning a significantly lower BCR of 2.93, and an option with additional quality improvements on the route increasing the BCR to 5.08.

[1] Categories are: Poor <1; Low 1.0 to 1.5; Medium 1.5 to 2.0; High 2.0 to 4.0; Very High >4.0

Data sources, user forecasts and Toolkit inputs

Forecasting the use of a facility which is for a significant part of its length a new opportunity rather than improving an existing one is always subject to uncertainty. To tackle this, a variety of data was collected:

- Additional questions in a survey of users on the Western shore
- Traffic counts from the local authority
- A survey of local businesses
- Automatic count data from a site on the Western shore immediately to the North of the current proposal (Strawberry Gardens).

In addition, the toolkit allows for inputs to be changed very easily and thus a number of different calculations can be made to test if the results are robust under a number of different situations. This is also TAG recommended practise.

User survey

Early results were collated to provide responses from visitors to the Western Shore. When asked if there were a similar route to the South would they use it, responses were:

Definitely	125
Possibly	21
Unlikely	4
Don't Know	-

Other interesting results were a wish to see a variety of walking and cycling routes available to encourage future visits, and a strong desire for a feeling of naturalness (33% of all respondents). but some wanting refreshment places and toilets on the route (7%) and discreet information and signage (5%). Benches were a popular choice at 9%, but also a need for more bins (10%) and benches (10%).

While strongly supporting the underlying demand for a new route, the survey does not provide sufficient quantitative data to produce a numerical forecast. It does provide useful information for the detailed design, should the project go forward.

Traffic counts

Count data was supplied by Cumbria County Council for three points in the area: B5278 and B5286 which have longer distance flows, and the B5285, which provides data for cars travelling via the ferry at Ferry Nab. The latter has the most applicable data since longer distance traffic has faster routes than via the ferry and thus the traffic is most likely to be accessing the Western shore. Two way flows are between 500 and 600 a day. The peak flow is after 9 am rising through the middle of the day, suggesting a dominant non-work purpose.

This traffic could be a target for transfer to cycle and walk and gives an indication of one group of potential users.

Survey of local businesses

Seven local businesses responded to a survey focussed on the proposal and its economic impact. The purpose was to obtain data on possible transfer of car commuting, possible changes in number

of visitors, and any forecasts of any change in turnover. Six predicted a rise in turnover, of which three made specific estimates – between 5 to 10% growth. Their total predicted increase in annual turnover was £157,000. Five gave figures for an increase in customers and one stated a "possible" increase but marginal. The predicted increases ranged from 10 to 300, clearly related to size. The overall total predicted was 700 in the summer peak, with about 500 at other times.

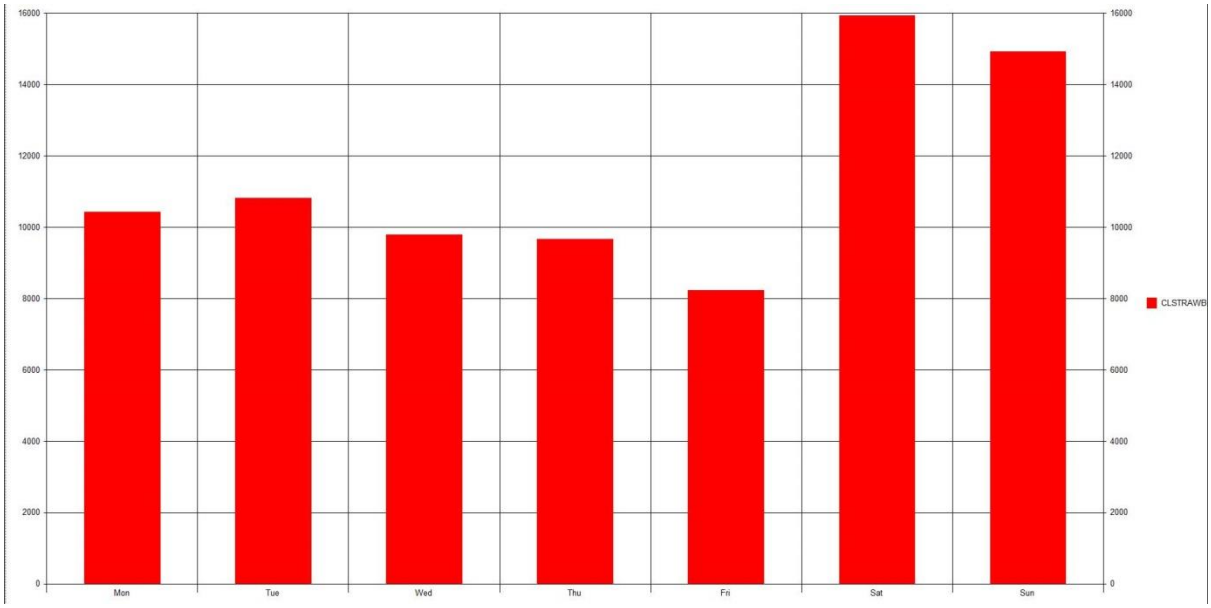
The increase was also related to the position of the business on the proposed path –the most strongly affected predicted a 50% increase in visitors. For established businesses with wider catchments (most respondents were based at the Southern end of the route) the increase was between 7% and 10%.

Overall the responses show a logical pattern and give a useful picture of what level of use could be expected. While some of the largest and a few of the smaller businesses responded, it was not possible to scale up the results. However the numbers themselves are significant – suggesting an annual use of the proposed new path would be at least 100,000 trips.

Automatic counter

An automatic counter at Strawberry Gardens, on an existing route immediately to the North of the South Shore proposal, has recent user data across the whole year. There may be some double counting if people pass the counter twice, but the data is substantial and provides a good comparator for the South Shore route. It does not, however, distinguish between walking and cycling. The annual totals by day of the week are shown below. The strong weekend use again shows a logical pattern in the data.

Figure 1: Annual trips passing Strawberry Gardens counter July 2018 to June 2019



Given the density of activity at the Southern end of the proposed new path, greater use would be expected and this is almost certainly reflected in the estimates from the local businesses. Using the counter data as a baseline is probably conservative. This annual figure has been used for the DfT toolkit as a first estimate. The split between walking and cycling was assumed to be 2 to 1 was used. Further details of this and other test runs are given below.

Summary of toolkit results

Central option and sensitivity testing

The functionality of the DfT toolkit allows a number of different inputs to be used to test how robust the estimates are. These included:

- Proportion of users previously using car: central and high 60%, low 40%
- Number of users: central 360, low 270, high 396 (per day, 220 days per year)
- Level of road congestion: central and low: "rural", high: "weighted average"
- For ease of use, Optimism Bias has been set at 20% for all runs which is in line with the LDNP estimate.

While the toolkit allows for benefit periods of up to 60 years, the norm for road schemes, a more conservative 30 year period was assumed, the same as the recent Kestrail economic analysis.

The significance of the road condition input to the toolkit is that the rural category assumes low congestion. Using a weighted average may better represent the very local conditions, particularly during the summer. This was run as part of a "High" sensitivity test. Given the strong performance using the rural category a more detailed analysis using journey time data was not undertaken. This would have required an entirely new survey at disproportionally high cost. Print outs of the toolkit run summaries are available if required and the most important are reproduced in the Annex.

A summary of the range of results from the variations are set out below.

Table 1: BCRs under different assumptions

Costs and benefits in £000 discounted to 2010 prices

	Central user forecast, rural road conditions, no existing cycle provision, 20% Optimism Bias	As Central but low user forecast, 40% previous car users rather than 60%	As Central but 10% higher users, assumed "weighted average" road conditions
PVB[2]	4552	3258	5819
PVC[3]	928	928	928
BCR	4.90	**3.51**	**6.27**

Note: Toolkit results only, no economic benefits assumed

Option Analysis

As well as a sensitivity test on the central forecast, two other options were considered for appraisal. The first is for a lower cost scheme which uses the same base data as the central option but offering less continuity and some sections on road. This would reduce the cost by approximately 25%. The cycling journey quality impact is estimated using segregated on road, and the increase in users is set at 50% of the central forecast with pre-scheme users unchanged.

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[2] PVB = Present Value of Benefits, copied from the DfT toolkit (see Annex for example output). This includes health, journey quality (ambience), and benefits from reduced car traffic.

[3] PVC = Present Value of Costs, estimates by year supplied by LDNP, converted to 2010 prices using DfT toolkit factors

A higher cost option, with additional signage, interpretation and communications was also subject to an economic appraisal. In this case the walking experience was enhanced from the central forecast, the DfT toolkit allows for information panels and benches to be added so this was included in addition to the central forecast. The increase in use from such improvements is difficult to estimate so a minimal 10% was used for the appraisal. The results from the toolkit runs are set out below:

Table 2: BCRs of alternative options

Costs and benefits discounted to 2010 prices

Values in £ ,000	Central option	Low cost option	Enhanced route option
PVB	4552	2043	5119
PVC	928	698	1008
BCR	4.90	2.93	5.08

Wider economic benefits

Estimates of additional visitors and their spending were prepared by factoring up existing visitor estimates using the business survey growth and applying daily spend figures from the local visitor survey. There are obviously issues about deadweight and displacement (simply moving visitors around rather than increasing numbers). About 10% of visitors are non-UK residents, although a higher proportion of staying visitors at 11%[4].

Using a 10% increase in visitors from the business survey would generate about 180,000 extra local visitors. This is higher than the path users produced for the toolkit so the lower figure was used. The figures below are based on the central user estimate and the lower. Because of limited local data it also uses the average daily spend on food and drink only. This is therefore a minimum estimate with no account of, for example, overnight accommodation value. Overseas visitors are obviously more likely to incur such expenses and therefore the estimate is again a cautious one.

Table 2: Local economic benefits under different assumptions

All benefits are from non-UK visitors only (see Note)	Central forecast for users Average daily spend	Low forecast for users Average daily spend
£ million	**6.10**	**4.1**

***Note**: To be compatible with the BCRs from the DfT toolkit, these benefits are over 30 years, discounted to 2010 prices. The local impact will be much stronger, by a factor of 10. However, if these benefits are to be compatible with the DfT toolkit, they should discount benefits which would otherwise occur elsewhere, either in another part of the LDNP, or another part of the UK.*

For the reasons given above, and the difficulty of obtaining business estimates which were sufficiently precise, the figures are illustrative only. Further work to refine these would only be necessary if the BCR was much lower. Given that they are robust under different assumptions and

[4] Source: Cumbria Tourism Visitor Survey 2018

consistently in the very high value for money category, there is sufficient confidence to recommend the scheme as having a very high value for money rating.

Job creation

The figures used above can also be used to translate turnover into full time job equivalents (FTEs). To do this we have used the Visit Britain study[5] figure of £54,000 turnover per FTE. To provide a more realistic profile the job creation lags behind the turnover, building up over four years. There would then be some additional growth over time and a 10 year figure has been calculated. This does not include any multiplier effects and is the figure for the increase in employment from all visitors (not just international). The local impact is predicted to be:

Table 3: Predicted increase in employment

Year of scheme operation	FTE increase
Year 2	22
Year 3	53
Year 4	76
Year 10	85

Conclusions

The proposed scheme has a very high rating for value for money on the DfT toolkit estimates alone and is robust under a range of different assumptions. It is also clear that the carbon reduction benefits in the toolkit are low, reflecting the assumed lack of congestion in rural areas and the DfT's low price for carbon. This is not realistic for this area, particularly at weekends in the summer months, but again the BCR is sufficiently high without them. Without doubt there are also significant additional economic benefits, both locally and nationally, but these would require a great deal of extra work to remove the high level of uncertainty of the figures produced above. This is not recommended in this particular case, in line with the DfT and general Government guidance that a proportionate approach should always be followed. The basic value for money measures are very strong without the wider economic benefits.

[5] Tourism Jobs and Growth: The Economic Contribution of the Tourism Economy in the UK, *Deloitte and Oxford Economics, November 2013, available on: https://www.visitbritain.org/sites/default/files/vb-corporate/Documents-Library/documents/England-documents/tourism_jobs_growth.pdf*

Annex: Key Summaries from the DfT toolkit

1 Central forecast

Rural setting central user forecast

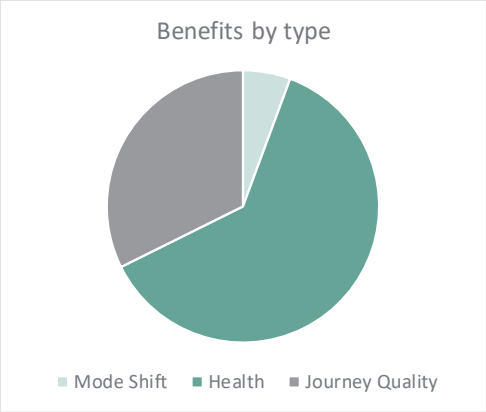
20% OB, 60% previous car user, no existing cycle provision, limited facilities on route

Analysis of Monetised Costs and Benefits (in £'000s)

Congestion benefit	233.96
Infrastructure	5.71
Accident	54.16
Local Air Quality	1.39
Noise	7.74
Greenhouse Gases	23.27
Reduced risk of premature death	2306.90
Absenteeism	519.22
Journey Ambience	1473.91
Indirect Taxation	-68.87
Government costs	933.88
Private contribution	0.00
PVB	4551.69
PVC	928.17
BCR	**4.90**

Benefits by type:

Mode Shift	257.36	5.6%
Health	2826.13	62.0%
Journey Quality	1473.91	32.3%



The illustrative case study in WebTAG unit A5.1 uses slightly different assumptions on the valuation of decongestion benefits which result in a higher estimated benefit there. This is due to the specfic nature of the case study and to fully replicate this approach here would have increased the complexity of this tool with no apparent benefit.

2 Lower cost less continuous option

Rural setting central user forecast low cost option

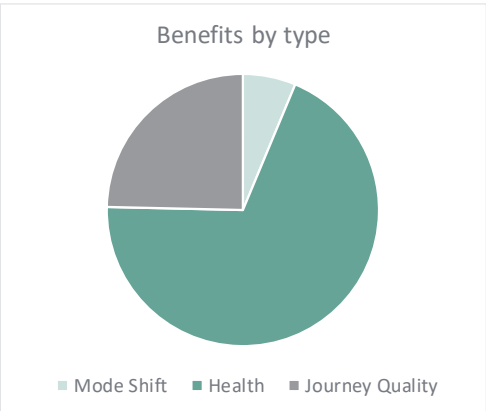
20% OB, 60% previous car user, no existing cycle provision, limited facilities on route

Analysis of Monetised Costs and Benefits (in £'000s)

Congestion benefit	116.98
Infrastructure	2.85
Accident	27.08
Local Air Quality	0.70
Noise	3.87
Greenhouse Gases	11.64
Reduced risk of premature death	1153.45
Absenteeism	259.61
Journey Ambience	504.16
Indirect Taxation	-34.43
Government costs	700.41
Private contribution	0.00
PVB	2043.05
PVC	697.56
BCR	**2.93**

Benefits by type:

Mode Shift	128.68	6.3%
Health	1413.06	69.1%
Journey Quality	504.16	24.6%



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3 Higher cost higher quality option

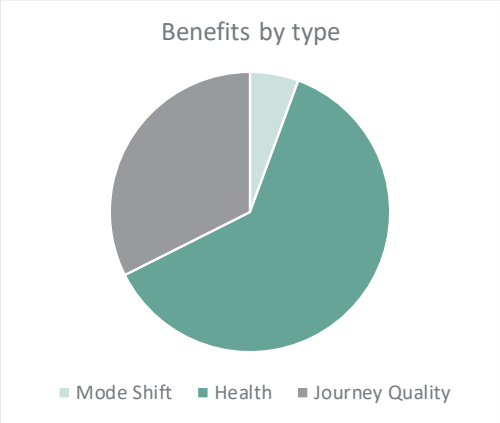
Rural setting enhanced route quality, higher cost
20% OB, 60% previous car user, no existing cycle provision, limited facilities on route

Analysis of Monetised Costs and Benefits (in £'000s)

Congestion benefit	261.33
Infrastructure	6.37
Accident	60.50
Local Air Quality	1.55
Noise	8.64
Greenhouse Gases	26.00
Reduced risk of premature death	2602.23
Absenteeism	573.92
Journey Ambience	1661.73
Indirect Taxation	-76.92
Government costs	1014.65
Private contribution	0.00
PVB	5118.98
PVC	1008.28
BCR	**5.08**

Benefits by type:

Mode Shift	287.47	5.6%
Health	3176.16	62.0%
Journey Quality	1661.73	32.4%



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4 Higher forecast greater congestion relief assumptions

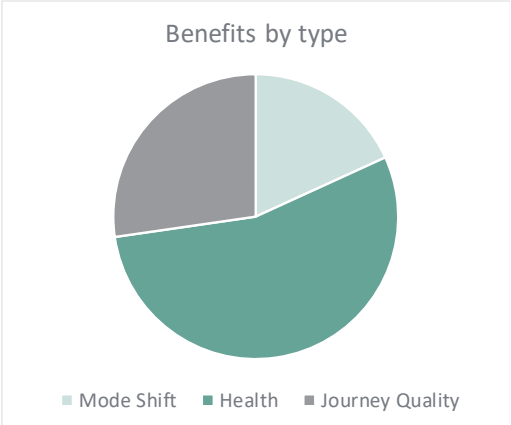
Central + 10% user forecast, weighted average road conditions
20% OB, 60% previous car user, no existing cycle provision, limited facilities on route

Analysis of Monetised Costs and Benefits (in £'000s)

Congestion benefit	958.70
Infrastructure	5.19
Accident	137.86
Local Air Quality	4.54
Noise	9.69
Greenhouse Gases	28.39
Reduced risk of premature death	2602.23
Absenteeism	573.92
Journey Ambience	1589.15
Indirect Taxation	-85.43
Government costs	933.88
Private contribution	0.00
PVB	5819.06
PVC	928.69
BCR	**6.27**

Benefits by type:

Mode Shift	1058.94	18.2%
Health	3176.16	54.5%
Journey Quality	1589.15	27.3%



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