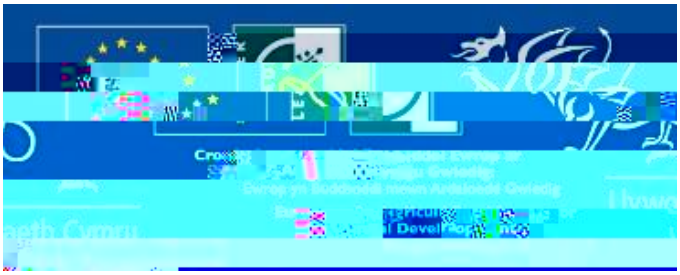
Brynmawr Economic Impact Study

Wales Rural Development Programme

December 2018



About Sustrans

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Table of contents

- Journey purpose
- Trip distance
- Proportion not using a car for any part of their journey
- Proportion who could have used a car for their journey but have chosen not to

The BCR tool provides an estimate of the monetised economic benefits for the following impact areas related to cycling and walking:

- Health (using the WHO HEAT tool)
- Absenteeism
- Amenity
- Greenhouse Gas Emissions Reduction
- Accidents Savings
- Decongestion
- Air Quality Improvement
- Noise Pollution Reduction
- Infrastructure Development
- Indirect Taxation (disbenefit)

All economic benefits appraised through the BCR tool are based on a 20 year appraisal time period. This provides an estimate of the economic benefits of a specific level of scheme usage being observed over the next 20 years. All benefits are discounted over the 20-year time period to provide a present-day value.

Health Economic Assessment Tool (HEAT)

The World Health Organisation (WHO) Health Economic Assessment Tool (HEAT) is used to evaluate the health-related economic benefits of walking and cycling. The benefits calculated through HEAT are the value of the reduced mortality generated through a specific number of walking and cycling trips (i.e. physical activity). All health-related economic benefits are calculated over a 20 year appraisal time period, to maintain compatibility with the WebTAG-generated economic outputs.

The World Health Organisation issued HEAT 4.0 in November 2017 as an update to the previous tool. HEAT 4.0 is currently under review by the WHO and likely to be reissued with further amends.

As a result, the version of HEAT used in this appraisal is the previous version of HEAT, available at: http://old.heatwalkingcycling.org

Leisure Expenditure Model Tools: Cycling and Walking

Sustrans RMU has developed two models which calculate the economic benefit to an area from these activities, called recreational cycling and walking expenditure models.

The Leisure Cycling Expenditure Model [3] was originally developed in 2007 in association with the University of Central Lancashire (UCLAN) to estimate the impact of cycle tourism. It has been iteratively updated, most recently in 2017.

The model was developed based on an extensive data collection exercise undertaken between 2001 and 2006 on long-distance routes in the North of England, using user surveys, automatic counter data and travel diaries. The model can be used to estimate the economic impact of cycle tourism based on data on visitor spend per day for all recreational cycle tourism-related expenditure is differentiated according to home-based and recreational tourist users. The outputs are indicative, rather than precise, estimates of the potential direct economic impact of investing in recreational cycling and give an estimate of the annual tourism-related economic benefits of recreational cycling usage on a proposed route. This is in terms of tourism expenditure and the social value of tourism per year.

The Leisure Walking Expenditure Model (LWEM) is a tool for estimating the economic benefit of leisure walking in terms of the expenditure it contributes to the local economy. This model originated from the Recreational Expenditure Model (now the LCEM) and builds on expenditure data collected from route users over a number of years. The LWEM has not been used as part of this study.

It is based on data collected from Route User Intercept Surveys (RUIS) across the UK (though mainly in Wales and Scotland). The model estimates the total annual spend for all home- and holiday-based based leisure walkers. It also calculates the number of full time equivalent (FTE) roles this spend would support. In order to further understand the effect of the expenditure, spend and FTE roles are split by sector.

4 Brynmawr RUIS data

Baseline AUE

An Annual Usage Estimate (AUE) is required to calculate the expected economic benefits from the proposed route construction. This shows the potential number of trips that we would expect to be using the route if it were approved and constructed.

5 Assessment of Economic Benefits

This section outlines the economic benefits of the proposed Brynmawr route, including:

- The economic value of congestion, greenhouse gas (GHG) emissions, noise pollution and amenity benefits accrued through mode shift encouraged by the route
- Health-related benefits of increased walking and cycling on the proposed routes

[3] Previously titled the Recreational Expenditure Model (REM)

- Direct and indirect job creation from infrastructure works and increased recreational walking on the routes
- Overall positive return on investment

5.1 Annual Usage Estimate

An Annual Usage Estimate (AUE)[4] is required to calculate the expected economic benefits from a proposed route development. This came from local area automatic counter data from four counters near to the proposed route (Figure 1).

The AUE was calculated by taking an average of the four counters near to the proposed route. The four counters did not record the modality of users, therefore the proportion of cyclists to pedestrians was estimated using the average ratio of three proxy RUIS carried out at sites in Wales : Garw Valley, Conwy and Narberth. The baseline pedestrian and cyclist AUEs for Brynmawr are as follows:

Table 4: RUIS Annual Usage Estimate (AUE) data

Site	Region	Year	Cycling At633(

5.6 Benefit - cost ratios

The first option is estimated to cost £480,920. The second option is estimated to cost £608,760 and the third option £640,030. Annual (routine) maintenance costs for the route length of 2.8km are estimated to be £1,847 per year. The Total Present Value of Costs (PVC) represents the total cost of building the route, appraised over a 20 -year time period (Table 6). This includes the construction costs and annual maintenance costs, discounted to the present value.

Table 6: Brynmawr scheme cost options

Cost opt ion	Scheme construction cost (total)	Maintenance costs (£ per year)	Total Present - Value of Costs (PVC)
1: Low	£480,920	£1,847	

The LCEM and LWEM tools also provide an estimate of the direct and indirect full -time equivalent (FTE) jobs supported in the local economy through recreational cycling and walking. Details of this are provided in Table 10 and Table 11.

Table 10: Leisure cycling usage and employment support

	Direct employment (FTEs)	Indirect employment (FTEs)	Total employment (FTEs)
1: Low usage change	0.9	0.5	1.4
2: Medium usage change	1.0	0.6	1.5
3: High usage change	1.0	0.6	1.6

Table 11: Leisure walking usage and employment support

	Direct employment (FTEs)	Indirect employment (FTEs)	Total employment (FTEs)
1: Low usage change	7.0	11.3	18.4
2: Medium usage change	7.6	12.2	19.8
3: High usage change	8.2	13.	

sources. In addition, anecdotal evidence suggests that National Travel Survey data can be very jumpy year-to-year and may under-represent the cycling modal share.

BCR, LCEM and LWEM tool inputs

- The LCEM, LWEM and BCR tools were run using the recreational usage inputs from three RUIS carried out at proxy sites in 2017, Garw Valley, Conwy and Narberth. These sites were used as no RUIS has been conducted at the Brynmawr site. The proxy sites were all part of the Wales Rural Development Programme, and as such have similar characteristics to the proposed Brynmawr route in that they are shorter, strategic links between the existing NCN and rural tourism destinations.
- For the proxy sites, the responses to the trip frequency categories 'daily' to 'monthly' only were used only in the BCR tool. Responses to the other trip frequency categories were excluded as the BCR tool does not support other trip frequency categories.
- The same proportions of trip frequency and trip purpose in the pre and post scenarios in the BCR tool were used as in the absence of any evidence to suggest otherwise i.e. actual data we have to assume the trip purpose and frequency would not change.
- The high and low usage scenarios were calculated as +/- 20% of the mid usage scenario of a 173% increase calculated by the cyclist IIT and 161% increase calculated by the pedestrian IIT. 20% was used as there is no other evidence to suggest you should vary substantially from the IIT output but there is a need to illustrate that a range of scenarios is possible.
- The LCEM and LWEM tool inputs were taken from three proxy RUIS sites: Garw Valley, Conwy and Narberth. For the LCEM model, tourist cyclists were only observed at the Narberth site; therefore all inputs related to the tourism-related cycling (i.e. not home-based recreational trips) are drawn from one site only. All other inputs are taken as an average across the three sites.