
Robin Hood's Bay Coastal Strategy

Appendix D2

Revised benefits for Robin Hood's Bay

Revised Benefits for Robin Hood's Bay Coastal Strategy



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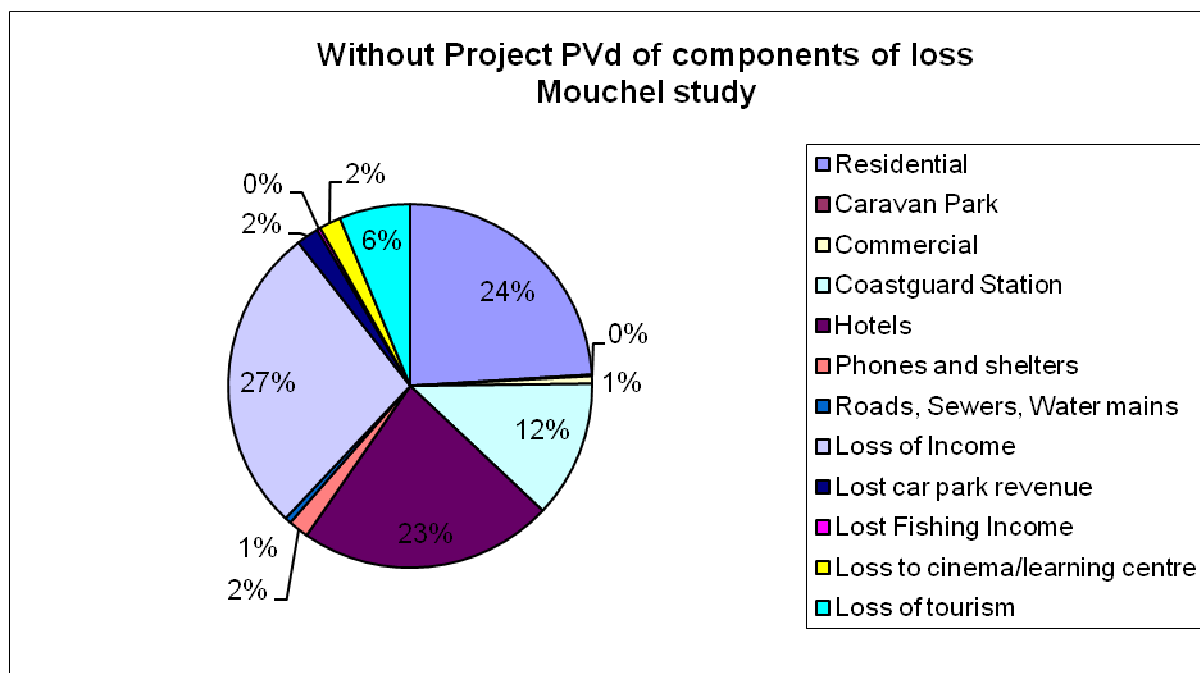
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Mouchel's benefit appraisal, prepared as part of the January 2010 Consultation draft has been re-aligned in light of FCERM-AG (EA 2010 Appraisal Guidance) to include only allowable National benefits associated with the options appraised to stem coastal erosion. Benefits for the preferred option 2 "*AIM with Adaptive Management (Property Roll Back Scheme in Northern Village and Capital Maintenance to Coastal Defence Assets in the Southern Village)*" were calculated by Mouchel's at £8.148 million. The BCR for this option was 3.15:1 and the adjusted Raw Outcome Measures score less than 40%. Currently a score of 120% is required to be 'eligible' for FDGiA. Two issues are of concern:

1. Many of the Receptors and their damages and consequential losses will not be affected by coastal erosion until after year 20 and very often much further into the future. Thus the Present Value of damages/losses (PVd) is much reduced on actual property Market or other derived values
2. Around one third of the damages/consequential losses were related to Lost Income to the village businesses and municipal car parks. This is not regarded as a legitimate national resource loss by FCERM-AG as these elements of local loss, important for making a financial case for scheme contributions locally, can be transferred to other risk free communities within the UK. Only if such income were a national loss to the UK, which is rare, could it be included in the benefit appraisal. MCM (2010) specifically states on page 17 "It is necessary to separate financial and economic losses by not including, for example, loss of income in one particular retail shop if the trade this represents is likely to be.....transferred to another retail outlet". EA now encourages appraisals to seek to identify gains and losses to individuals and to different sectors.

The problem is the local losses which would be significant in RHB (see Mouchel's benefit appraisal spreadsheets) must be separated from the appraisal to be submitted to the Project Approval Board with contributions to the shortfall sought from local beneficiaries or local levies either commercial or residential (premiums on business rates or Council Tax).

The pie chart below breaks down the Base case "Do Nothing" PVd as calculated by Mouchel.



The legitimacy for inclusion (and accuracy) of the 12 components itemised above is reviewed below.

Residential

The Market Valuations of the sixty or so residential properties that will be affected by erosion in the future were estimated by Mouchel using updated Council Tax Bandings. Though this is not recommended practice in MCM 2010, which requires use of actual risk free valuations within the region of study, the Mouchel values were retained. Mean House price for North Yorkshire from the Land Registry web site (www.landregistry.gov.uk) is £173,033 for August 2011 and compares with a weighted mean value used by Mouchel of £194,101. Total Do Nothing PVD only reduces by about 2.5% if the Land Registry mean is applied to all 62 households. This is well within tolerable confidence levels and on a proportionality basis (effort versus improved benefits) there is no real advantage of identifying the actual residential type for each of the 62 properties and applying the specific valuations (for North Yorkshire) for each type (i.e. Detached £269,198; Semi £152,948, Terrace £129,064 and Flat £123,110). A visit to Google Street View indicates the use of 'average' house seems valid. If the mid value between detached and semi was applied (£211,073) then PVD would be even closer to that used for the Mouchel benefits. For Outcome Measures calculations all 62 residential properties were in Long Term risk category (greater than 20 years) and in super output areas 21% to 40% most deprived areas.

Caravan Park

The park facilities included would not be affected for at least 50 years so the Mouchel Market values are acceptable and in total the park makes up less than 1% of total PVD for Robin Hood's Bay. It is noted that unlike MA24.1 no actual vans would be affected.

Commercial (excluding hotels)

Only 5 commercial premises were identified and only contributed about 1% to the original PVD:

- Commercial 1: The Warehouse, Victoria Terrace, YO22 4RJ
- Commercial 2: Bayfair publications, The Old Cobblers shop, Chapel Street, YO22 4SQ
- Commercial 3: Bulmers sweet shop, Albion Road, YO22 4SW
- Commercial 4: Public convenience attached to #3
- Commercial 5: Paul Howard woodworking, The Old Rocket House, Victoria Terrace, YO22 4RJ

The Valuation Office Agency website (www.voa.gov.uk) puts the rateable value (RV) of commercial premises in Robin Hood's Bay at £135 per square metre, so with the exception of the public conveniences the market valuations (FCERM-AG suggests RV multiplied by 10) of around £50,000 are acceptable. The Public convenience is reduced to £21,250.

The Coastguard Station

Although the valuation at £1.9 million appears high, the National Trust who own the property suggest a re-build cost of £750,000 and a 'comparative selling price' for this unique property of two and a half times this value. The original value is retained with provenance well documented.

Hotels

There are 3 hotels at risk and each is significantly overvalued at £1,942,500 and making up about a quarter of total PVd. The RV (times 10) to reflect a fair Market Value based on VOA methods (a receipts based approach reflecting trading patterns equivalent to fair maintainable turnover) are given below:

- | | |
|--|----------|
| • Hotel 1: Bay hotel, The Dock, YO22 4SJ | £510,000 |
| • Hotel 2: Ye Dolphin, King St., YO22 4SH | £255,000 |
| • Hotel 3: Victoria, Station Rd., YO22 4RL | £405,000 |

These figures are used; any valuation greater than these reflects a 'Goodwill' which can be transferred to non-risk establishments and is not an economic loss.

Loss of Income

Mouchel collected very detailed income returns for all the trading establishments that might be affected as erosion progressed. Whilst this is useful in making a case for local contributions lost income cannot be included in a National resource benefit cost analysis – see FCERM-AG p211. This makes up 27% of total PVd. All loss of income (including income generated by car parking) has been removed from the revised benefit assessment. Along with use of the original hotel market values these two components of loss make up over half the total PVd from the Mouchel benefit appraisal.

Other losses (infrastructure, Services etc)

Under the proportionality principle Mouchel's values were retained; These 'other losses' represent only about 5% of total PVd.

Loss to Tourism

Mouchel estimated that losses to tourism (over and above lost income to businesses) was about 6% of total PVd, with tourist impacts starting in year 20. The loss of tourism was calculated by

Mouchel from values obtained using an average loss using benefit transfer from MCM 2005 at Cliftonville of £6.34 per person per day. This value was applied to the visitor numbers using the coastguard facility only.

Lost tourism goes beyond the above as any coastal erosion will gradually but effectively blight the resort and put visitors off trips to the village. Enjoyment will be diminished and equivalent erosion free alternative resorts will eventually be sought. The MCM and FCERM-AG allow this loss of enjoyment, in combination with the resource costs of additional travel time to alternative sites, as a legitimate economic loss associated with coastal erosion or benefits of improved coastal protection. Including additional travel costs, loss of enjoyment as well aspects of lost income may be construed as double counting.

MCM is clear about losses to be assigned using the Value of Enjoyment (VoE) approach; *for those who continue to visit:*

$$L = E_0 - E_1$$

Where: L is the loss per person

E_0 = equals the value of enjoyment under pre erosion conditions

E_1 = value under 'Do nothing' once the effects of erosion are noticed

And, for those choosing an alternative equivalent resort

$$L = (E_0 - E_a) + (C_a - C_o)$$

Where: E_a = the value of a visit to an alternative site

C_a = Cost incurred in visiting the alternative site

C_o = Cost incurred in visiting Robin Hood's Bay

Valuing enjoyment is usually measured through visitor surveys and these are best done at peak holiday times. Surveys are expensive and time consuming so a process known as 'Benefit transfer', using values derived during surveys in other resorts, can be a substitute for survey if used with care. MCM (2010 update) has compiled in Table 8.6 (updated to 2009 prices) the mean loss per visit with erosive changes. This equates to £6.73 per person/visitor. Thus it is fair to say that this loss can be applied under the Do nothing scenario and discounted from the year the loss of enjoyment begins. Mouchel estimated this to be between year 20 and 23. Following on from year 23 more visitors would find a more acceptable alternative and for expediency it is assumed that over 10 years visitors would gradually shift their visits from Robin Hood's Bay to a nearby erosion free resort. "Welcome to Yorkshire" Tourist Board suggest that apart from the large resorts on the Yorkshire coast like Whitby, Scarborough, Filey and Bridlington, Robin Hood's Bay has the greatest popularity of the smaller resorts with a popularity ranking as follows:

1. Robin Hood's Bay
2. Staithes
3. Sandsend

4. Ravenscar
5. Runswick Bay

Robin Hood's Bay is a self supporting unique package where pubs (the Dolphin, Bay Hotel, Laurel, Victoria Hotel and Grosvenor) all thrive. People come for family holidays and for walking but also because of the heritage value of smuggling, fishing, cobbles and the general ambience of the 15th/16th century cottages. It is described as the "Jewel of North Yorkshire" and photographs are used by Visit Yorkshire.com as part its PR. It uniquely exhibits the evolution of a village from the middle ages to Edwardian/Victorian. There is folk week held annually, with the Victorian Week-end also held annually at the beginning of December. Robin Hood's Bay is also the end of the iconic Alfred Wainright's coast to coast walk. In a 2004 poll of 50 walks by guide book writers published in *Country Walking* magazine the 190 mile walk was voted as the World's second most popular trail after the Milford track in New Zealand, beating the Inca trail, Everest and Mont Blanc. Decay of the village as a consequence of coastal erosion would reduce this popularity and encourage other visitors away to the less visited coastal resorts listed above with concomitant loss of enjoyment and the burden of additional travel. The village's popularity is perhaps borne out by expenditure profiles published in Yorkshire regional visitor survey for Scarborough district (Welcome to Yorkshire) for 2009:

Expenditure per person per day

| Area of Spend | | | | |
|---|---------------|----------------|----------------------|-----------------|
| | Yorkshire | Moors & Coast | Scarborough District | Robin Hoods Bay |
| Total spend per person per night (£) | £28.50 | £32.40 | £34.70 | £40.20 |
| Total spend per person per trip (£) | £80.40 | £133.60 | £145.80 | £162.70 |

Compiled by Welcome to Yorkshire
Insight

Email: insight@yorkshire.com

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The spend per trip for visitors using Robin Hood's Bay was more than double that for all Yorkshire destinations.

A Casual User survey published by the North Yorkshire National Park Authority in 2011 indicated the origin of visitors to the park (which contains Robin Hood's Bay):

- Yorkshire and Humberside 48%
- North East 27%
- Midlands 9%
- South East 8%
- North West 4%
- South West 1%
- Wales 1%
- Overseas 2%

This profile is largely mimicked for Robin Hood's Bay in an analysis of the booking profiles for the 4820 bed nights at The Old School House.

The relative distances from most popular travel hubs to the Old School House (Scarborough, Bridlington, Hull, Newcastle, Nottingham, Doncaster, Barnsley, York, Leeds, Bradford, Wakefield, Conisborough, Scunthorpe, Grimsby, Cleethorpes, Withernsea, Sheffield, Harrogate, Manchester and Durham) to Robin Hood's Bay and alternatively, Sandsend, Staithes and Runswick Bay, indicated however only an additional 1.25 mile mean extra distance to the other locations as against Robin Hood's Bay. This increases to 2.5 miles when just accounting for journey origins just in Yorkshire and Humberside. However, the *Yorkshire regional visitor survey for Scarborough district (Welcome to Yorkshire) for 2009* suggests that 93% of visitors to Robin Hood's Bay go there as part of a holiday to Yorkshire (Staying Visitors). Assuming these visitors are based in the larger centres (Scarborough, Bridlington or Whitby) then the additional average mileage to travel from these three centres to other comparable resorts, Staithes, Runswick Bay or Sandsend is 8 miles or 13 km.

Mouchel estimated visitor numbers to the village from the Coastguard visitor numbers. A better indication of visitor numbers was gained from the car park ticket sales available from Scarborough BC. Visitors to the narrow village streets must park in either Station or Bank Top car parks. The mean annual number of day tickets sold per year at both from 2003/04 to 2008/09 was 86,504 for cars and 553 for coaches. The *Yorkshire regional visitor survey for Scarborough district (Welcome to Yorkshire) for 2009* indicates that about one third of visitors came with their spouse/partner (2 per car) and two-thirds with family or friends (say, 3.5 per car). This equates to 259,944 visitors by car per year and, assuming a coach occupancy of 30, 16,575 by coach. A total of 276,519 day visitors enjoy the village as day visitors each year.

The National Trails Officer for the North Yorkshire National Park has indicated when that a survey of Coast to Coast walkers last took place there were about 7,000 people each year following the route based on a quiet location outside of the National Park which was almost certainly only used by Coast to Coast walkers. The Cleveland Way National Trail runs right through Robin Hoods Bay. Although the Trails officer has not got recent count figures the last big survey in 1998 indicated that there were about 3,100 long distance walkers in addition to the day walkers using the trail many of whom would be counted in the car park figures. Applying the mean loss per visit with erosive changes (see above) the loss of enjoyment to long distance walkers would be £67,973 per year.

In Summary,

Loss of Enjoyment (during day visits experiencing erosive changes) £1,860,973 per year

Loss of enjoyment during visits by long distance walkers £67,973 per year

Additional transport resource costs (see MCH table 6.6)

[Vehicle Operating Costs and Value of Time] 50kmph for cars; 40kmph coaches £ 296,666 per year

The Mouchel value of tourism figures were replaced by these from year 20. By year 23 it was assumed that visitors would gradually locate their day trips to other sites at a mean additional

distance of 13km. After 10 years declining visitor numbers would replace the lost value of enjoyment for an increased cost of travel to these alternative sites.

The revised PVd is now £9.296 million. If additional journey time to alternative sites was to continue beyond year 33 to year 99– perpetuity - the PVd would increase by an additional £3.310 million. If additional loss of enjoyment to walkers of the Coast to Coast and Cleveland Way Long Distance paths was to continue from Year 24 to perpetuity the PVd would increase by a further £1.026 million. Both these scenarios are part of *Revised benefits plus* below.

Payment for Outcome(Outcome Contributions)

An Outcome measures summary of the FDGiA calculator V2 (details in attached spreadsheets) follows:

| | Mouchel Benefits | Revised Benefits | Revised benefits plus |
|--|-------------------------|-------------------------|------------------------------|
| PV Whole Life Costs | £2.59 million | £2.59 million | £2.59 million |
| PV Whole Life benefits | £8.18 million | £8.81 million | £13.15 million |
| Benefit Cost Ratio | 3.16:1 | 3.40:1 | 5.08:1 |
| Raw OM Score (%) | 39.33 | 40.67 | 49.97 |
| Cost saving or external contributions | £937,546 | £916,735 | £773,005 |

The Revised benefits plus scenario increases the Raw OM score by about 10% and reduces costs savings or external contributions by £164,541

MA 24.1

The Raw Outcome Measures score from Mouchel's original benefit assessment for MA 24.1 is 20.04%. Scrutiny of original benefits is unlikely to increase this score to a point where FDGiA will be secured.

Receptors at Risk

Abbey Lane Farm Storage

Erosion will not affect this site for 100 years. Re-Valuation of the properties is unlikely to affect the direction of the analysis and the present valuation is retained.

Scheduled Ancient Monuments

Two Scheduled ancient monuments are at risk. Their cultural and amenity significance/importance would need investigation. Quantification of benefits is expensive and likely to be out of proportion to additional benefits secured. Saltwick Nab Alum quarry was historically used for the open cast excavation of Alum up to 18th or 19th Century. It is likely to have minor local historic interest. Whitby Abbey, a Benedictine Abbey founded in 657 AD is a popular visitor attraction but is set some 500 metres from the cliff. The impact of erosion was to have been scoped into Mouchel's assessment. With erosion estimated at '10 metres in 100 years' there is little immediate concern as to the

security of this important SAM. Decay from normal weathering processes is believed to be a far greater threat to the integrity of the Abbey.

Saltwick Bay Caravan Site

150 static vans are assumed to be affected but not till year 60. The site represents 95% of the original PVd. Mouchel valued the vans at an average £9,000. EA's August 2007 note *"Damages and Benefits Associated with Caravans, Prefabricated Buildings, Mobile Homes and Caravan Parks"* caps the valuation of vans at around two thirds of this as damage/loss is restricted only to the services and plinths. The vans themselves will be moved to an alternative site well in advance of failure of the cliff. The higher EA value of £6,000 per van is used in the reassessment.

Agricultural Land

Agrimoney.com gives a mean value of agricultural land in this part of Yorkshire at over £15,000 per Hectare cf £7,040 allowed by Mouchel. Using the Defra guidance for permanent loss of agricultural land as market value less £600 per hectare, to reflect the subsidy effect of single payment, (see MCH, 2010 p. 72), gives a value of £14,400 per hectare and this value is applied to land at risk from loss for the 1000m MA length and with erosion expected at 0.5 metres per year.

The reduction in losses to the static vans outweighs the increased losses to agricultural land.

Payment for Outcome (Outcome Contributions)

An Outcome measures summary for MA 24.1 follows:

| | Mouchel Benefits | Revised Benefits |
|--|-------------------------|-------------------------|
| PV Whole Life Costs | £205,042 | £205,042 |
| PV Whole Life benefits | £229,754 | 151,889 |
| Benefit Cost Ratio | 1.12:1 | 0.74:1 |
| Raw OM Score (%) | 20.04% | 17.93% |
| Cost saving or external contributions | £65,578 | £67,308 |

MA 25.1

The only marginal cost/beneficial solution is property roll back, presumably receptors are spread through the main MA and probability of failure is well into the future with the exception of the YHA buildings and the coastguard facilities, the latter making up about a third of the NAI losses in the Mouchel analysis. Property represents only 7% of the already small losses so 'improving market value' would be disproportionate to effort. Agricultural land has been valued at £7,040 per hectare by Mouchel and changed to a more realistic valuation (see MA 24.1), with erosion averaging 0.5 metres per year over 21 kilometres. This augmented value of agricultural land value would increase benefits though preferred Option 2 would not prevent loss of land. Any erosion control measures or property roll back would be best considered in discussion with HM Coastguard and YHA to specifically protect these properties which are closest to the active erosion zone. Monitoring would be the most pragmatic option, prior to planned roll back.

Payment for Outcome (Outcome Contributions)

An Outcome measures summary for MA 25.1 follows:

| | Mouchel Benefits | Revised Benefits |
|--|-------------------------|-------------------------|
| PV Whole Life Costs | £222,996 | £222,996 |
| PV Whole Life benefits | £390,456 | £448,211 |
| Benefit Cost Ratio | 1.75:1 | 2.0:1 |
| Raw OM Score (%) | 49.56% | 50.99% |
| Cost saving or external contributions | £48,503 | £47,116 |

Dr John Chatterton 15th November 2011