

DEVON COUNTY COUNCIL

ECONOMIC FEASIBILITY STUDY OF
THE FORMER BIDEFORD TO
BARNSTAPLE RAILWAY ROUTE



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GLOSSARY

DCC Devon County Council

NPV Net Present Value – value of a stream of costs or benefits expressed in monetary terms expressed as a single value representing the value of those costs or benefits at a given point in time.

1 SUPPLEMENTARY REPORT

1.1 Introduction

Maunsell Rail undertook a study of the economic feasibility for the possible re-opening of the former Bideford to Barnstaple railway route which was published in January 1999. The study examined the economic potential of extending the rail infrastructure beyond Barnstaple and included an impact assessment of existing facilities.

The key findings from the study were that with limited rail revenue combined with high capital, operating and environmental mitigation costs it was unlikely that an acceptable business case could be made to re-open the line. The report looked at factors that might be helpful in contributing towards the re-opening of the line, including:

- Freight terminal at Yelland Quay, and
- Development of a possible volunteer run steam service.

Both of these proposals were fraught with difficulties and it was felt that without a significant capital grant (felt to be unlikely) that there was no business case for re-opening the line.

The track between Barnstaple and Bideford had been lifted in 1984, the land had been purchased by Devon County Council(DCC) for use as a footpath and cycleway known as The Tarka Trail. The proposed Barnstaple Western Bypass plans would require the Barnstaple to Bideford route to be crossed twice at the following locations:

- North of Barnstaple Station, and
- Sticklepath Hill.

The study assessed the estimated costs and economic impacts of providing rail underpasses at these locations either at the time of construction of the bypass or later. The report concluded that:

"Devon County Council will obtain "Best Value" by constructing the Barnstaple Western Bypass without a rail underpass. However, the bypass must be designed such that it is capable of rail structures being added later and that the trackbed formation be preserved from other development."

Further work by DCC indicated very poor ground conditions necessitating a change in the design of the Barnstaple Western Bypass. DCC therefore gave a further commission to Maunsell Rail to re-examine the economic feasibility of the line resulting from the design changes to the Barnstaple Western Bypass.

1.2 Further evaluation

The scheme design of the Barnstaple Western Bypass, directly to the north of Barnstaple station, has been changed from road on embankment to road on a 100 metre 4 span viaduct due to very poor ground conditions. The change in design will accommodate any future re-opening of the rail line to Bideford.

At the diverted Sticklepath Hill if the railway were to re-open a rail underpass would still be required. If the underpass were constructed as part of the bypass scheme the estimated cost of the underpass is £393,000 (at November 1999 prices). If the underpass were to be constructed after the completion of the bypass the estimated cost would increase to £605,000 (at November 1999 prices).

On this basis of the above costs it would be possible to defer construction of the rail underpass for just over seven years after the start of the construction of the bypass for the net present values (at a 6% discounting rate) to remain the same.

The question then remained was it "Best Value" for DCC to incorporate a rail underpass at Sticklepath Hill to facilitate the future re-opening of the railway between Barnstaple and Bideford. This required a re-evaluation of the business cases. The capital costs associated with re-instatement effectively means that none of the options were viable. The table below shows the re-working of Case A where the line would be worked as a commercial venture. Table 1 illustrates the theoretical case where the railway is opened immediately. The railway is assumed to cover the cost of the underpass at Sticklepath Hill. The operation of a steam tourist service has been excluded as there is a significant net present cost of conducting such an operation. The tables indicate the net disbenefit of the railway being re-opened. These are all large and negative. However, as noted on the tables the evaluations do not take account of wider benefits that might accrue from accessibility, economy, environmental, integration and safety measures. In order to calculate these access to a land-use transportation model would be required.

Table 1 Barnstaple to Bideford railway financial/economic evaluation assuming railway re-opened immediately

NPV's at 6% discount rate over 15 years	Low assumption (£ NPV)	High assumption (£ NPV)
Passenger revenue	344785	946944
Freight	14568	14568
TOTAL	359353	946944
Operating	2772847	7099654
Capital	7751000	7751000
TOTAL	10523847	14850654
Operating ratio	772	750
NET DISBENEFIT	-10179062	-13903710

Note: This evaluation does not take account of wider benefits that might accrue from accessibility, economy, environmental, integration and safety measures.

Even where construction were to be deferred the capital costs still outweigh the revenues. On the assumption of a deferral for seven years the NPV's are shown in table 2.

Table 2 Barnstaple to Bideford railway financial/economic evaluation assuming railway re-opening deferred by seven years

NPV's at 6% discount rate over 15 years	Low assumption (£NPV)	High assumption (£ NPV)
Passenger revenue	195246	536239
Freight	8250	8250
TOTAL	203496	544489
Operating	1570217	2450199
Capital	5295850	5295850
TOTAL	6866067	7746049
Operating ratio	772	450
NET DISBENEFIT	-6662571	-7201560

Note: This evaluation does not take account of wider benefits that might accrue from accessibility, economy, environmental, integration and safety measures.

In both cases the wider benefits that might accrue from accessibility, economy, environmental, integration and safety measures would have to be sufficiently large and heavily weighted towards the early part of the project evaluation periods for them to have a significant effect upon the net disbenefit.

Following recent events in the railway industry the capital costs noted in the original report must now be considered "low". Recent projects undertaken by Maunsell indicate that prices for railway infrastructure projects have risen in real terms by between 15 and 20% during the first quarter of 2001.

1.3 Conclusions

The further evaluations show that whilst the redesign of the Barnstaple Western Bypass allows for the future re-opening of the railway to Bideford close to Barnstaple station there is still a need to build a rail underpass in the vicinity of Sticklepath Hill. Whilst this could be deferred for a minimum of 7 years the review of the underlying financial/economic business case for the railway shows significant net disbenefits. Only if there were large early benefits accruing from accessibility, economy, environmental, integration and safety measures would this large disbenefit be mitigated. Also the tables show the operating ratios (Costs/revenues x 100) and these range between 450 and 772 indicating that operating costs are between 4 and 8 times the revenues generated by the line.

Following incidents on the national railway network, e.g. the crash at Hatfield, prices for railway infrastructure projects have risen in real terms by between 15 to 20%. This would create further problems in respect of a financial/railway economics justification for re-opening the railway.

1.4 Recommendations

The further evaluation shows that the construction of the rail underpass at Sticklepath Hill could be delayed for a minimum of 7 years without affecting the overall situation in regard to the railway. However, the re-evaluation of the business cases shows the impact of high capital costs and indicates that there does not appear to be one for re-opening the railway.

Devon County Council will obtain "Best Value" by constructing the Barnstaple Western Bypass without a rail underpass. Because of the large disbenefits associated with the business case for the railway re-opening(excluding the effects or benefits accruing from accessibility, economy, environmental, integration and safety measures) we would not now recommend that the bypass is designed at Sticklepath Hill such that a rail underpass could be added later.