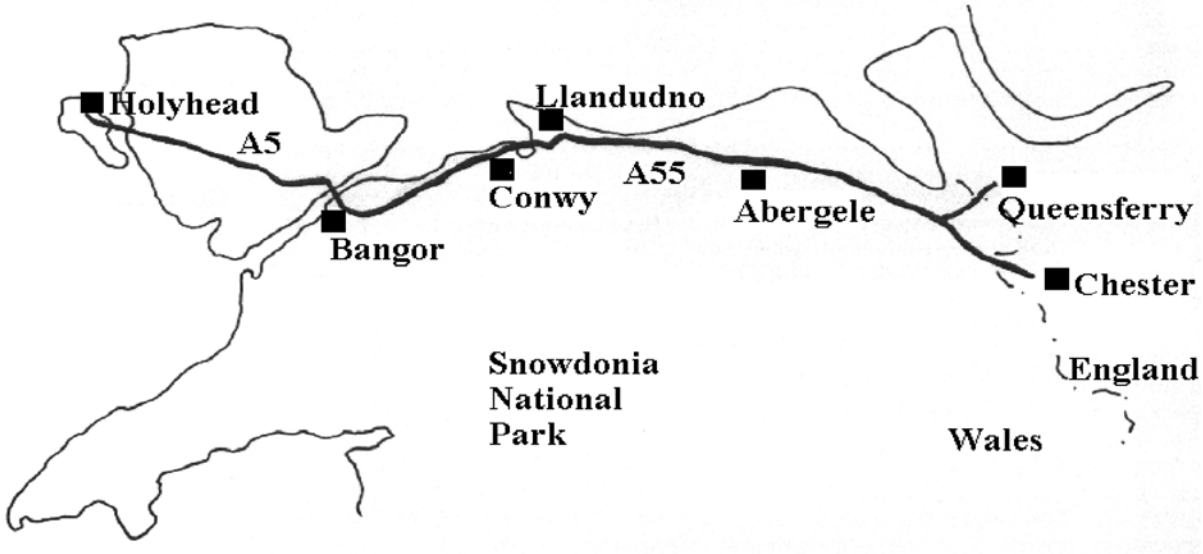
ANNEX E

CASE STUDY: A55 NORTH WALES EXPRESSWAY



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1 INTRODUCTION

1.1 The project

1:01 The project in question has created a dual-carriageway east-west road close to the North Wales coast. Some of this has been achieved by a complete rebuilding of existing roads, but much of it is new. Some sections are literally "coast road", running between cliffs and the sea; others are several kilometres inland.

1.2 Available studies

1:02 An impact study was carried out by the Welsh Economy Research Unit (WERU) of the Cardiff Business School for the British Road Federation. The A55 was also one of the subjects of the 1980 Welsh Office study (see Case Study on the Severn Bridge), but at the time the improvement of the road was far from complete and survey work was directed to respondents' expectations of what would happen, not to their experience of what had already changed. (At the time it was envisaged that the comprehensive improvement of the route would be completed "by the late 1980s" – p1, para 1.1.)

2 PURPOSE, CONTEXT, FUNDING AND TIMING

2.1 History and purpose

2.01 Congestion at certain points on the North Wales roads led the Welsh Office to commission a study in 1966. The resulting report was published in 1968 and recommended the construction of an east-west dual-carriageway road by-passing the urban centres.

2.02 The proposals were developed further in 1969-71, and were the subject of a public inquiry in 1975-76. Objections made at the inquiry led the Welsh Office to agree to reduce the environmental impact of the road by building three tunnels that were not part of the previously proposed designs. The most expensive of these involved the building of a submerged tunnel under the Conwy Estuary which the road was originally proposed to cross on a viaduct and bridge which would have changed both the landscape and the background of Conwy Castle.

2.2 Cost and funding

2:03 The WERU report gives the total estimated cost of the road as £732 million. This appears to be the historic cost of some 25 different stages built over a 25 year period. As far as we are aware, all of the cost was met by central government.

3 TRANSPORT AND ACCESSIBILITY EFFECTS

3.1 Travel time and costs

3.01 WERU (p1) reports that in 1969 the travel time between Chester and Bangor was between 2.5 and five hours; with the completion of the A55 improvements, this was reduced to a much more reliable 1.5 hours.

3.2 Accessibility

3.02 For most purposes, the main interest in accessibility is eastwards towards the markets and consumers of England. As a result, the gain in accessibility is greater towards the western end of the A55.

3.03 The improvement of the A55 from the Chester by-pass to Bangor has however concentrated attention on two as yet unimproved links:

- at Queensferry (where eastbound traffic can turn north towards Merseyside and the motorway network of North-West England)
- the continuation of the A55 north-westwards across the island of Anglesey to the ferry port of Holyhead.

3.3 Use of the road

3.04 The WERU report (pp 17-19) gives average daily eastbound traffic flows for August of each year from 1987 to 1995 and February of each year from 1989 to 1995, at two points, Old Colwyn (Clwyd) and Penmaenbach (Gwynedd). In both cases, there is a continuing upward trend in both summer and winter, with more rapid growth at the Penmaenbach site. Given that the road improvements completed during the period covered by this data were completed in some 10 stages, it is difficult to relate growth to the network changes or to other factors. There is however a clear jump in the August figure for Penmaenbach from 1991 to 1992, which WERU attribute to the opening of the Conwy Tunnel. Curiously, there appears to be a distinct increase from 1991 to 1992 in February traffic at Old Colwyn but not in August traffic.

4 ECONOMIC AND EMPLOYMENT IMPACTS

4.1 Introduction

4.01 The WERU study considered economic and employment effects in two ways:

- through the use of an input-output model, and
- through detailed interviews with a sample of business managers.

4.2 Model results

4.02 The modelling method used was broadly the same cost-elasticity method used by CEC in their estimates for the Severn Bridge/M4 and for the M62. However, WERU then made explicit use of an input-output model (rather than assuming an overall multiplier effect) to calculate the effects which changes in one sector would have on other sectors.

4.03 The modelling is driven by an estimate that "the A55 improvements have reduced the road transport costs of North Wales firms and organizations by 10%; or, equivalently, that their road transport costs would be 10% higher in the absence of the A55 improvements" (p25). This is described as "an intentionally modest estimate, but one consistent with the typical experiences of firms consulted in North Wales".

4.04 WERU assumed an elasticity of output with respect to cost of 2, ie that a 1% in total costs would lead in one way or another to a 2% increase in sales and production. Unlike CEC, they explicitly included increases in output due to new firms locating in the area within this effect (p27).

4.05 The direct effect of this increase, less the decrease in output from the transport sector, was £12.1M (p28). The sectoral components of this were input to an input-output model for North Wales, which was estimated from a recently published input-output table for Wales as a whole (p21). The multiplier effects within this model produced an overall impact of the transport cost savings. This was an increase of £20.1M in output, associated with an additional 354 full-time equivalent jobs. The full results are shown in Table 1.

	Output £m		Income £m	Jobs (FTEs)
	Initial	**Final**	**Final**	**Final**
Agriculture	0.3	0.8	0.2	21
Energy and Water	0.8	1.5	0.2	7
Metals and Minerals	5.5	6.1	1.0	43
Engineering	2.2	2.8	0.6	34
Other Manufacturing	3.0	4.0	0.9	61
Construction	0.1	0.4	0.2	13
Retail and Distribution	3.4	5.1	2.4	161
Transport and Communications	-9.8	-9.4	-3.7	-164
Private Services	3.1	4.6	1.4	77
Public Services	3.4	4.3	2.2	100
Total	**12.1**	**20.1**	**5.2**	**354**

Table 1 Estimated impacts of A55 transport cost reductions

Source: WERU
FTE = full-time equivalent

4.3 Questionnaire and interview findings: manufacturing

4.06 Questionnaires were completed by 36 North Wales manufacturers; sixteen of these were followed up by interviews.

4.07 The general findings were that

- transport and communications had been markedly improved, especially for firms further west
- the competitiveness of indigenous companies had been improved, through better access to both input sources and sales markets
- however, local firms have been exposed to increased competition from outside; whilst this would be of long-term benefit to local firms and consumers, it involved a short-term cost
- little effect on investment had yet been felt.

4.08 The report includes summaries of three interviews – two with food processors, one with a manufacturer of automobile components.

4.09 The interviews all mentioned the effect of the road improvements on both deliveries to customers and inputs from suppliers. Some of the changes in inputs were dramatic – for example, a shellfish processing firm previously dealing only with locally caught shellfish now obtained 50% of its input from other ports, including North Shields on the east coast some 450Km away[1]. What is not clear, in this case or the others, is whether these inputs from more distant sources are additional to or instead of more local inputs, or what effects these changes may have had on other firms. It was however noted that some local service suppliers had been forced to become more competitive as a result of the greater ease with which other suppliers could now reach local clients.

4.4 Road haulage and distribution

4.10 Effects on the road haulage sector were complex. Some local firms found the road improvements a great advantage. Others, operating on a European scale, found them of little relevance. Others again saw a threat that the elimination of problems would encourage national operators to move into the area rather than subcontracting work to local firms.

4.11 The A55 is critical as the dominant road link to Holyhead, which in turn is a major port for Irish imports/exports to the UK and the rest of the EU. The extension of the A55 improvements across Anglesey to Holyhead was seen as important both by North Wales and by Irish distribution companies.

[1] Note that such inputs would be dependent not only on the A55 improvements but also the M62, the M6 and the A1.

4.5 Tourism

4.12 The impact on tourism was seen as mixed. To some extent, the road has encouraged visitors to make day trips rather than staying overnight in the area, with a marked reduction in the amount they spend per person and an increase in traffic problems, particularly in the mountainous Snowdonia area. The resort town of Llandudno, in contrast, was seen as having gained from the combination of

- better access for tourists arriving from the east (more likely to bypass the other coastal resorts)
- better access into Snowdonia (via the Conwy tunnel and the A55 to Bangor) makes Llandudno more attractive as a base for visiting the area
- the town is several kilometres from the A55 itself and therefore unaffected by traffic noise and pollution (unlike Colwyn Bay, where the A55 runs between the town and its beach).

5 OTHER EFFECTS

5.1 Health

5.01 The development of the A55 has had a number of effects on the provision of health services for the population of North Wales. A number of hospital developments were planned in advance to take advantage of the road improvements. The greater ease of access between settlements along the North Wales coast made it much easier to refer patients for treatment in other towns' hospitals. It was also now possible for local patients to attend specialist clinics in Liverpool or Manchester without needing to spend a night away, and likewise visiting consultants were less likely to need to stay overnight. It was also argued that better access to the North West conurbations made it easier to attract key personnel.

5.2 Crime

5.13 A number of interview respondents commented that the main negative impact of the A55 was the increase in the local activity of English criminals. WERU compared crime rates in North Wales with those for the UK and found that the increase in total recorded crime in North Wales over the period in question was no greater than that for the UK in general. No breakdown by type of crime is given. Discussions with North Wales Police confirmed that a high proportion of certain offences, eg burglary, were committed by persons from outside the immediate area, but it was not possible to say whether the A55 had led to any particular change in this proportion.

References

Welsh Economy Research Unit (1996): *Delivering the goods? the economic impact of A55 Expressway improvements.* Report for the British Road Federation. WERU, Cardiff Business School, Cardiff.

Welsh Office (1980): *M4/A55 study: the effects of major road investment schemes in Wales*. Welsh Office Planning Services, Cardiff.