

The A69 Carlisle to Newcastle DBFO

In the 1990s the Highways Agency devised a system called Design, Build, Finance and Operate (DBFO) whereby a private company would be appointed to operate and maintain a specified route for 30 years on the basis of an agreed financial arrangement. The DBFO schemes usually included the construction of a major improvement scheme that had been prepared ready for construction.



What is DBFO?

The Highways Agency formally launched its use of the Private Finance Initiative (PFI) to procure road services on various parts of the motorway and trunk road network in August 1994. These contracts were known as Design, Build, Finance and Operate (DBFO) Contracts.

The method generally used by the Highways Agency for procuring construction and maintenance of a road was to let contracts for separate tasks. For example, there would be a design agent, a contractor and a maintenance agent. Although each party performed its specified task efficiently, there was little incentive for the parties to collaborate to maximise overall value for money for the Highways Agency.

Furthermore, previously unknown factors tended to have a financial impact and as a result there was often a significant increase between the tendered cost and the final out-turn cost of a project. However, with the introduction of DBFO Contracts there was now the opportunity to transfer the responsibility for designing, constructing, financing and operating a length of motorway or trunk road to a single DBFO company.

The DBFO company could consider its obligations over the full life of the contract, usually 30 years, taking account of all the risks inherent at each stage of the project. By transferring these risks to the DBFO Co there were now very few circumstances in which the Highways Agency's liabilities could be increased and this provided them with an accurate, predictable spend profile for a given section of road over a 30-year period.

The first DBFO Contract awarded was for the A69 Carlisle to Newcastle, to a private company called Road Link (A69) Ltd. The Contract commenced on 1 April 1996 and will end on 31 March 2026.



It included the construction of the Haltwhistle Bypass and its subsequent operation and maintenance, together with maintenance of the rest of the 52-mile long route between Carlisle and Newcastle for the 30-year period.

Shadow Tolling

In accordance with the terms of the DBFO Contract, the Highways Agency pays Road Link (A69) Ltd a fee, which is based on the number of vehicles using the road. These payments are known as shadow tolls (as opposed to real tolls), as payment for road usage is made by the Highways Agency rather than by the road user. There are some adjustments made for safety performance and lane closures.

Shadow tolls involve a payment per vehicle using a section of the A69 road, in accordance with a payment structure agreed at contract award. The shadow tolls increase over time in accordance with an agreed indexation formula. Different payments are due for traffic within different traffic bands and these payments also vary depending on the length of the vehicle.

The A69 has been divided into 13 links for the purpose of counting the traffic and determining the shadow tolls. The toll rate reduces as the numbers of vehicles increase. The top rate is set at zero and therefore the maximum liability for the Highways Agency is capped. As you would expect, the traffic counters detect vehicle numbers to a high degree of accuracy and are available 24 hours per day, 365 days per year. The counters will remain in position for the 30-year contract period.

The Haltwhistle Bypass scheme had been prepared by the Highways Agency and their consultants for the scheme by conventional procedures to the point that only the construction of the works was required. As an incentive for Road Link to complete the construction as early as possible in the 30-year DBFO contract, the shadow toll payments were initially set at a much-reduced level. In this case the A69 shadow tolls were set at 50% but then increased to 100% on completion of the bypass.

Road Link started construction of Haltwhistle Bypass on 1 April 1996 and completed the works on 22 May 1997. The works involved the construction of a 3.2km single carriageway to the south around the town of Haltwhistle.





The Highways Agency's programme for the scheme was 18 months and Road Links original programme was 16 months. However, once work started and with the incentive of receiving the full toll payments on completion of the works Road Link were able to accelerate the works and complete the scheme in just under 14 months. This provided benefits to the people of Haltwhistle with the early opening of the bypass as well as significantly reducing the overall disruption to road users while the works were taking place.

Performance

In addition to the shadow toll payment there are also two aspects in connection with performance payments.

Safety Performance Payments – One of the key objectives of the Highways Agency is to reduce accident levels on the trunk road network. Road Link was therefore encouraged to identify safety improvement schemes on the A69 and submit details to the Highways Agency for approval. Accidents where personal injury occurs have a recognised economic cost to the community at large and this provides a mechanism for funding.

Where a scheme to improve safety is approved, Road Link constructs and pays for the scheme and is recompensed by receiving a proportion of the economic cost of each personal injury avoided in the following 5-year period. Accidents avoided are determined by comparing the actual statistics with data over the 3-year period prior to the implementation of the scheme.

On the A69, Road Link identified that between 1994 and 1997 there had been a number of road traffic accidents at a junction on a section of dual carriageway. After considering the accidents in detail it was determined that most of the accidents involved vehicles approaching from the side road and attempting a right turn across the dual carriageway. By restricting right-turns from the side roads (i.e. allow left turn only) the cause of most of the accidents could be eliminated. A scheme was designed on this basis and was approved by the Highways Agency.

Road Link constructed the safety scheme in early 1998. Over the next 5-years there were no personal injury accidents at the junction and Road Link not only recovered the initial capital costs of construction but received a Safety Performance Payment.



Lane Closure Charges – delays caused by lane closures are a significant issue for both the Highways Agency and the road user. A financial incentive was therefore included in the DBFO Contract whereby a deduction would be made from the shadow toll payment when the DBFO Co closes lanes on the road. The size of the deduction depends on the number of lanes closed, the duration of the closure and the expected traffic at the time.

On the A69, lane closure charges apply when vehicle numbers would normally exceed 500 per hour on the single carriageway or 1200 per hour on the dual carriageway. Road Link therefore carefully plans all its work so as charges associated with any lane closures required to undertake the works are minimised. This is reasonably easy for routine maintenance works as lane closures are generally only required on a temporary basis and only for short durations.

However, in terms of major maintenance when closures are required for long periods and on occasion when they cannot be removed easily e.g. when re-waterproofing a bridge deck, then careful planning is required. This involves both the timing of the works and how they are carried out. The time of day or month to complete the works is chosen to minimise lane closures and in addition innovative techniques are developed so the works can be completed in the shortest time possible.

As a result of lane closure charges being included in the DBFO Contract, Road Link now completes the vast majority of major maintenance schemes at night, usually in the summer months between the hours of 8pm and 7am. Bonuses are also included in our major maintenance contracts whereby the contractor can receive extra payment for early completion of the works. This reduces the lane closure charges paid to the Highways Agency and also ensures delays to road users are minimised.



Later Improvements

Construction of the long-awaited bypass around Haydon Bridge was completed in March 2009. The Highways Agency scheme included 3km of road together with the construction of four new bridges. In addition various landscaping and environmental works were also completed so as mitigate the impact of the bypass on the surrounding countryside. The new bypass removes 12,000 vehicles per day from the village (of which approx. 2,000 are HGV's) and provides a significant improvement for A69 road users and Haydon Bridge residents.

The Haydon Bridge Bypass was funded by the Highways Agency as a new addition to the A69 route. The new road now becomes the maintenance responsibility of Road Link but the existing road through the village was transferred to Northumberland Council.

An area of land at Haltwhistle was identified by the local authority as a business park with the intention of encouraging economic regeneration in this area. Direct access to the land on each side of the A69 was to be taken from the Haltwhistle Bypass. The Highways Agency gave approval for access off the A69 and the scheme was completed with developer funding in early 2009.

Conclusions

DBFO Contracts have accelerated the introduction of cost efficiencies, innovative techniques and whole-life cost analysis into the design, construction and maintenance of road schemes.

It is argued that DBFO Contracts using the shadow toll payment mechanism have delivered real value-for-money savings for the Highways Agency when compared to traditional methods of procuring road construction and maintenance.

The toll banding structure means the Highways Agency expenditure is capped and they have obtained an accurate picture of their financial liability for 30 years for the A69.

Safety Performance and Lane Closure Charges encourage Road Link to consider safety as well as minimising delays at roadworks and by improving both there are measurable benefits not only for Road Link and the Highways Agency but for all A69 road users.

Road Link (A69) Ltd are confident that since 1996 they have ensured that the A69 is a well-maintained, safe and reliable all-weather trunk road link across the north-Pennines and that this will continue until 2026.

Thanks to Trevor Walker of Road Link (A69) Ltd, for preparing this article

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