

**PRIVATE FINANCING OF PROJECTS IN THE HIGHWAYS AGENCY
and
THE A1 DARRINGTON TO DISHFORTH DBFO PROJECT**

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THE ROLE OF THE HIGHWAYS AGENCY

The Highways Agency is an Executive Agency of the Department for Transport responsible for operating, maintaining and improving the strategic road network in England on behalf of the Secretary of State for Transport. The Agency's primary aim is to improve safety on the roads, reduce congestion to improve journey time reliability and provide information to travellers.

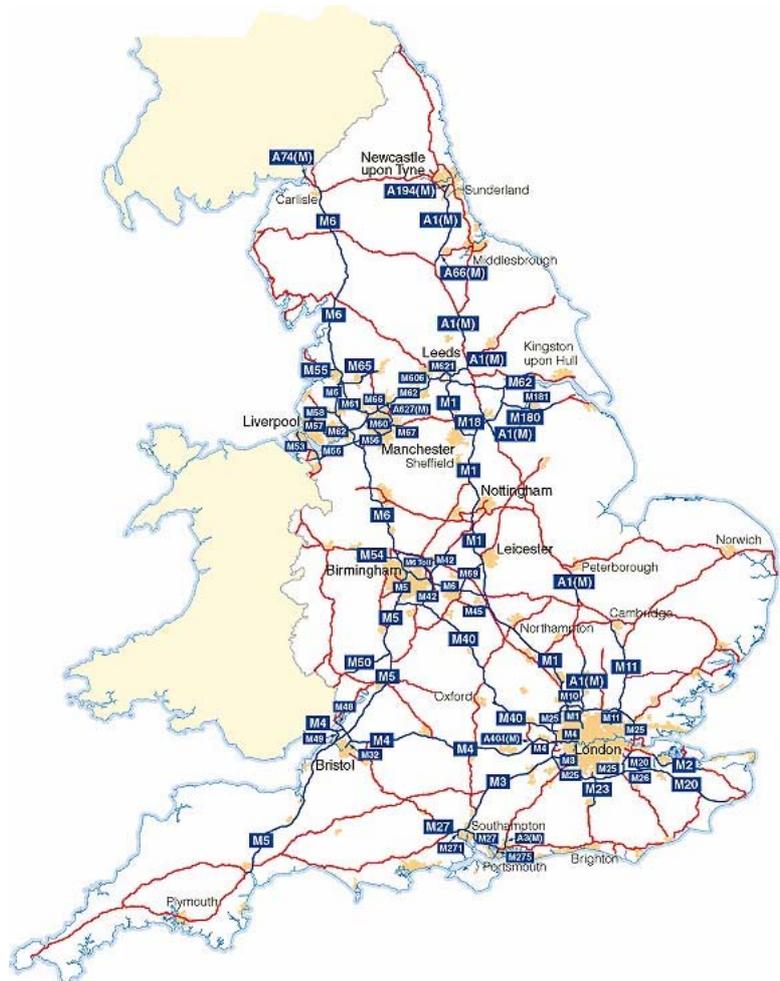
The Agency's role as network operator – managing traffic using our roads and administering the network as a public asset – has developed rapidly over the past few years.

England's Strategic Road Network

The strategic road network operated by the Highways Agency is valued at over £65 bn and comprises some 8,000km/5,000 miles of motorways and trunk roads.

The network carries a third of all traffic in England and two thirds of all freight traffic with over 170bn vehicle km of journeys undertaken each year.

The types of roads comprising the strategic network range from motorways carrying up to 200,000 vehicles per day down to single all-purpose routes carrying 10,000 vehicles per day. 40% of the strategic network is motorway and 60% of all-purpose roads are dual carriageways.



Customers first

The last year has seen major changes in the Highways Agency as the organisation moves towards a more customer focussed, front line operation of the strategic road network to help improve the capacity of the existing road network and reduce the impact of congestion.

Headed up by a National Traffic Director, **Traffic Operations Division** is responsible for front line activities on the motorway and trunk road network and includes the provision of travel information to road users and the conduct of traffic operations associated with the management of traffic, roadworks and incidents on the network.

The first HA Traffic Officers began motorway patrols near Birmingham in April 2004 with patrols on the M25 motorway and the south east commencing on the 1st August 2005. The Traffic Officer service will be rolled out across the rest of the country by Spring 2006.

This service will require some 300 staff operating from seven new Regional Control Centres with 1000 Traffic Officers on the network by 2006.

As well as the development of the Agency's network operator role there are an increasing number of schemes in the Targeted Programme of Improvements (TPI) as well as others emerging from the Multi Modal Studies programme. These are managed by **Major Projects Division** which focuses on speeding up delivery of the major national programme of schemes and implementing procurement methods which concentrate on effective and best value delivery methods.

In 2004 the Highways Agency classified its network into routes of strategic national and international importance and routes principally of regional importance. Highways Agency schemes on strategic national routes receive funding from the Department of Transport's 3 year expenditure allocations with schemes on regional routes brought together with funding under the Local Transport Plan system.

The Highways Agency also has a proactive international role, building good working relationships with road administrations across the EU, and more widely so that we can share information, experience and expertise and act as a good ambassador for the UK.

TACKLING CONGESTION

The Agency tackles congestion by delivering improvements to the strategic road network, reducing incidents on the network and by making information available on traffic conditions.

New congestion measures and targets have been developed by the Department of Transport, which seek to achieve improvements to the average vehicle delay on the slowest 10% of journeys between 2004/05 and 2007/08.

Highway Improvements

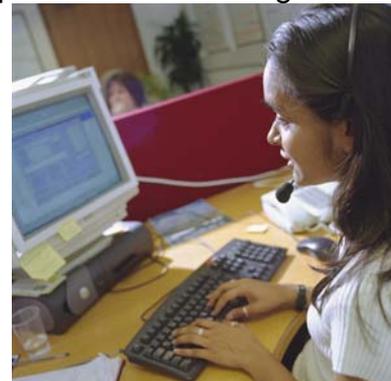
The Agency will be investing over £2bn between 2005/06 and 2008/09 in the Targeted Programme of Improvements to ease congestion and make traffic movements safer. 14 major schemes are currently under construction with 35 new schemes planned to start construction by April 2008. The Agency also has an extensive programme of smaller improvements and traffic management measures to make better use of the existing road network.

The phased introduction of the Traffic Officer Service onto the national network will address the problems of incident related congestion by providing a rapid response and improve overall safety.

Travel Information

The National Traffic Control Centre commenced operations in November 2003 to improve the provision of information to travellers to assist them with the planning and conduct of their journeys. It collects information on network conditions and transmits information to road users through Strategic Variable Message Signs or through advice to the broadcasting media.

The Agency makes full use of the latest techniques and technologies for managing traffic on the network to minimise delays to traffic. Electronic signs to control vehicle speeds, innovative active traffic management systems, incident response vehicles and electronic message signs are some of the techniques that the Agency is employing for effective traffic control.



IMPROVING CUSTOMER SERVICE

The Agency aims to achieve a high level of road user satisfaction by responding to the needs of customers on the network and by delivering a high standard of service when requested. The Agency communicates with its customers through public exhibitions, leaflets and the website. It forms strong working partnerships with many key organisations such as the police, local authorities and environmental groups.

SAFETY



The Agency will endeavour to reduce the number of accidents on the network by introducing improvements at known problem sites, promoting road safety awareness campaigns and continuing a programme of local network management schemes. The numbers of accidents occurring at roadworks sites is a cause for concern which the Agency is addressing through guidance on safe working practices and the use of safety campaigns to increase public awareness of the danger of road works.

Maintenance of the Network

Maintaining the network to keep it safe and available for use is the top priority in the Agency and accounts for an expenditure of £750m per annum. The Agency is continually looking at ways to undertake maintenance work with minimal disruption to traffic. Use of new technology in survey work and use of recycled materials can minimise the duration of works and assist the environment. The use of maintenance contracts delivering better value for money on a whole life cost basis will also, in the long term, minimise disruption on the network.



ENHANCING THE ENVIRONMENT

The Agency seeks opportunities to mitigate the adverse effects of the construction and operation of the strategic road network and looks for opportunities to enhance the environment in the vicinity of its highways.

The Agency will be updating its advice on environmental assessments, delivering a programme of noise reduction methods and completing its research programme on water quality and drainage. It will publish guidance on the development of Cultural Heritage Management Plans and look to implement projects which reduce emissions in air quality management areas.

PROCUREMENT OF THE SERVICE

As part of the Department for Transport's efficiency programme the Agency will be looking to improve efficiency in roads procurement by adding value to service delivery. The Agency will look to establish greater integration between key suppliers, sub-contractors and manufacturers. The Capability Assessment Tool will continue to be used for supplier assessments.

The maintenance and local improvement of the strategic network is procured mainly through Managing Agent Contractor (MAC) commissions of which there are 14 No. covering the whole of the network in England.

For the delivery of major projects, the Agency utilises Design and Build, Early Contractor Involvement or DBFO contracts to bring in private finance. There are 10 active Design Build Finance and Operate (DBFO) contracts currently in operation to bring private financing into major network improvements and maintenance.

A number of framework contracts are also in place to support some specialist activities on the network.

THE A1 MOTORWAY THROUGH YORKSHIRE

Having set the context to the highway improvement and maintenance work in the Highways Agency the remainder of this paper will concentrate on the Government's major investment in the A1 route through Yorkshire to provide a full upgrading to motorway standard.

In December 1998 the Government announced that the section of the A1 between Darrington and Dishforth in Yorkshire would be taken forward as a DBFO scheme with a contract award planned for the year 2002/2003. The project consists of the operation and maintenance of 53km of the A1 between Darrington, just south of the A1/M62 Interchange and Dishforth at the A1/A168 Interchange. It also includes the design and construction of two TPI schemes providing 24km of new dual 3-lane motorway.

The two TPI schemes are: -

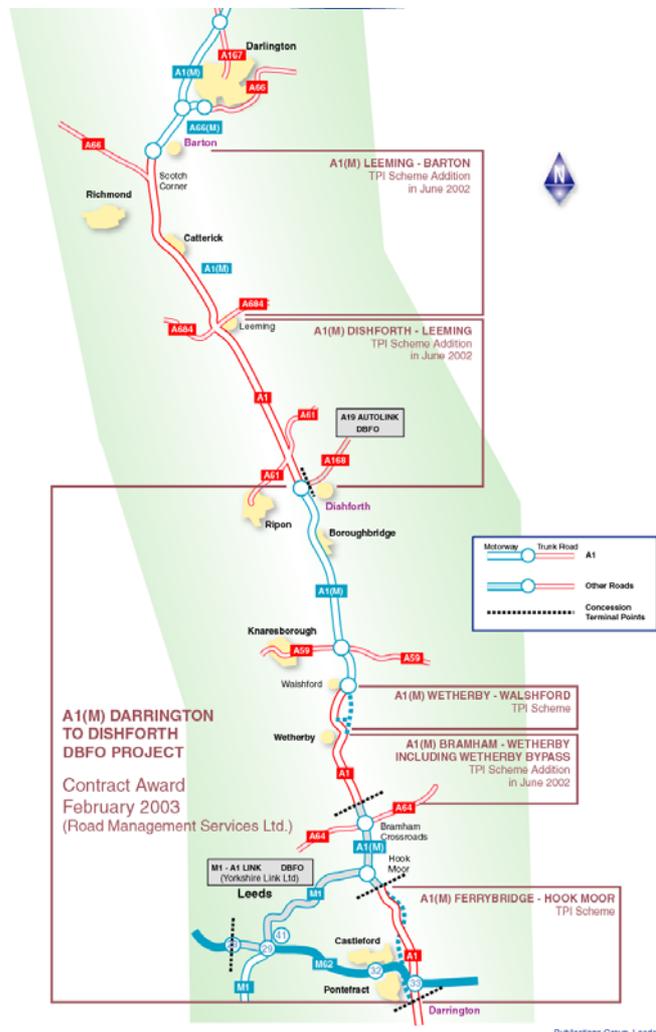
- A1(M) Ferrybridge to Hook Moor (Est. cost £183m)
- A1(M) Wetherby to Walshford (Est. cost £46m)

The DBFO Contract was awarded to Road Management Services (the DBFO Co) in February 2003 and they have raised the finance for the project and have designed and built the highway improvements. They will maintain this length of the A1 for 30 years after construction is complete.

In June 2002 the Government announced the preferred route for upgrading the 40km stretch of the A1 from Dishforth to Barton as well as the upgrading of a further section of the A1 within the DBFO project between Bramham and Wetherby, as part of a £263 million package of measures to improve the A1.

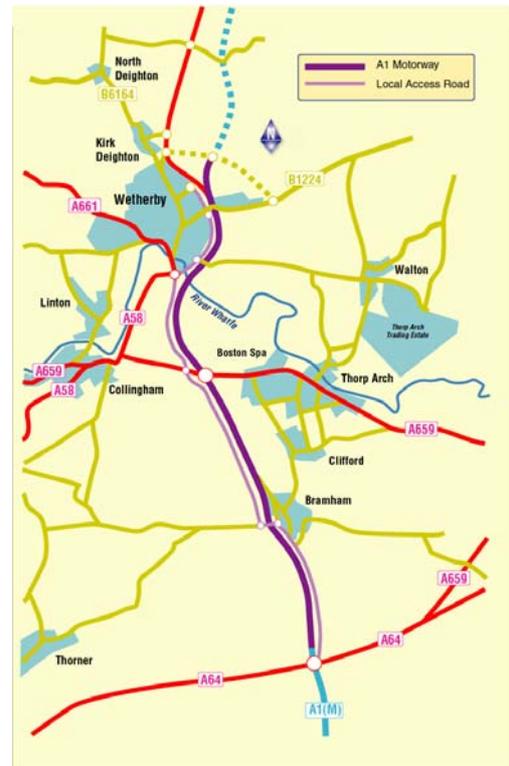
These recent additions to the TPI are being taken forward as ECI contracts.

Together with the Ferrybridge to Hook Moor and Wetherby to Walshford upgrades within the DBFO Contract, the total investment in the A1 route through Yorkshire now stands at £650 million.



A1(M) Bramham to Wetherby Scheme

This scheme was added to the TPI in June 2002 and comprises the upgrading of 10km of the A1 to dual 3-lane motorway standard. It lies within the Darrington Dishforth DBFO project but it will be designed and constructed by means of a separately awarded ECI contract. When construction is complete, the route will be operated and maintained by the DBFO Co: Road Management Services. It was not deemed appropriate to delay the award of the DBFO Project and include the Bramham to Wetherby section within the overall construction commission.



The Payment Mechanism

The first 8 DBFO Contracts awarded by the Highways Agency pay the DBFO Companies on the basis of shadow tolls, the value of which relates to the volume and composition of traffic using the particular Project Road. Safety payments are also made when the DBFO Co introduces improvements to the Project Road, which reduce the number of accidents recorded. The Agency can also make deductions from the monthly payments if the DBFO Co introduces lane closures on the Project Road at times of peak traffic flow that would cause congestion.

With the award of the A13 Thames Gateway DBFO Contract in April 2000 the payment mechanism was revised to a system based on lane availability. In this Contract, payments are made based on the availability of the road to all road users as verified from numerous CCTV cameras located along the route. Additional payments can also be earned from a good safety performance in operating the road.



Additional payments can also be earned from a good safety performance in operating the road.

With the recent A1 Darrington to Dishforth DBFO Contract the payment mechanism has been significantly developed such that payments to the DBFO Co reflect their ability to actively manage congestion and improve safety along the length of the Project Road. The key elements of the A1 DBFO payment mechanism are congestion management and safety performance assessment.

Congestion Management

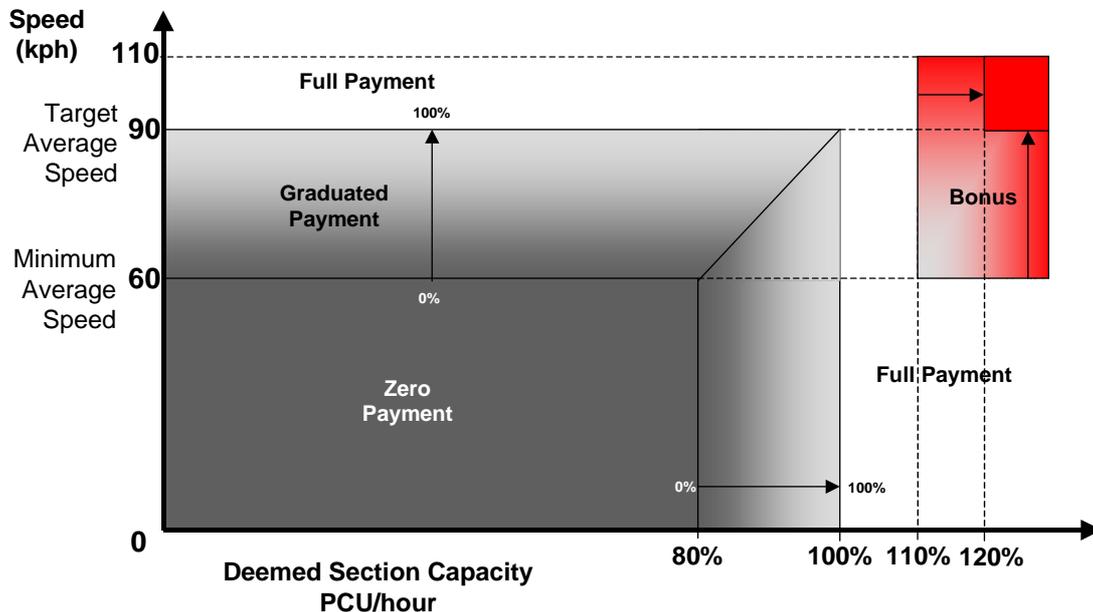
The Congestion Management payments will commence after substantial completion of major parts of the Project Road. Key features of the congestion management element are:

- Full payments are made to the DBFO Co for traffic flowing freely along the Project Road above a target average speed of 90 kph;
- A reduction factor applies to payments when the average speed of traffic falls below the target average speed. This provides an incentive to the DBFO Co to manage any event causing congestion on the Project Road;
- An allowance is made to lessen the impact of the reduction factor as flow approaches the deemed capacity of the road. This retains an incentive to manage congestion while reducing the risks associated with congestion due to lack of capacity;
- The mechanism allows for the possibility of flow exceeding deemed capacity. If this occurs there will be no reduction factor but instead a bonus can be paid for traffic travelling above a minimum speed under high flow conditions. This will reduce the DBFO Co's risk associated with congestion at capacity while providing an incentive to actively manage and bring forward proposals to keep traffic flowing freely;
- If, at any time, minimum carriageway performance criteria are not met on any section of road, no payments will be made for the relevant section.

Once the Monitoring System is operational, traffic speed and flow will be constantly measured using inductive loops set in the carriageway. Average traffic speed on carriageway sections of approximately 2 km in length and over one hour periods will be recorded. The maximum available weekly payment will be allocated to each carriageway section and hourly period in proportion to the average vehicle kilometres travelled in that section over the equivalent hourly periods in the previous four weeks. The allocated maximum payment will be paid in full in respect of the relevant section and period provided the minimum performance criteria are satisfied and the average speed of the traffic is above the target average speed.

The following diagram illustrates how payment will be factored at different flows and speeds:

Typical Payment Diagram



Safety Performance Adjustment

The A1 DBFO Payment Mechanism includes a comprehensive Safety Performance Adjustment (SPA) to encourage the DBFO Co to build, operate and maintain the Project Road to a high standard of safety. The mechanism is based on the safety record of the whole Project Road as measured by Personal Injury Accidents (PIAs). Accident data to support this element of the mechanism will be collected from the commencement of the Contract.

The DBFO Co's performance is compared to a safety benchmark, which is adjusted annually to take account of the national trend and safety gains. If the performance of the Project Road is better than the safety benchmark, a positive adjustment is made to the DBFO Co's payments, but, if it is worse, a negative adjustment is made.

The safety benchmark at the start of the Contract is based on the accident record of the existing road in the three years prior to award of Contract. This benchmark is adjusted annually throughout the Contract to take account of:

- the general safety trend as measured by selected comparator roads;
- safety gains due to bringing into use the new schemes required in the Contract;
- any safety gain arising from the introduction of additional works instigated and paid for by the Highways Agency.

The SPA is calculated by taking the difference between the three-year rolling average of Personal Injury Accidents (PIAs) on the Project Road and the safety benchmark. The amount of the adjustment varies depending on the actual PIA difference.

Other New Developments in the A1 DBFO Contract

Use of Current Standards: Over the 33 years of operating and maintaining the A1, the DBFO Co will use the standards of the day for its operation and maintenance activities. Any substantial variation to the Department's Standards brought about during the 33 year Contract period as a result of new policy directives which could not be foreseen at the award of the Contract will be considered as qualifying as 'Step Changes' which may be funded by the Agency.

Motorway Communications: The requirements of the A1 DBFO Contract have been arranged to cater for the provision of information to the Traffic Control Centre (TCC) and the future development of the National Roads Telecommunications Services (NRTS) Project.

Land Compensation and Accommodation Works: The responsibility for processing and funding the payment of all eligible claims under Part 1 of the Land Compensation Act 1973 has been transferred to the DBFO Co. The DBFO Co has made an allowance for the effect of compensation arising from the highway development and manages the process of settling all submitted claims, which may be made after the scheme is brought into use. During the construction stage the DBFO Co will take on responsibility for undertaking all necessary accommodation works and to properly record sufficient detail to assist the Valuation Agency with its land compensation assessments.

FUTURE DBFO PROCUREMENT

In February 2004, one year after the award of the A1 Darrington to Dishforth DBFO Contract, the Agency awarded the A249 Stockbury (M2) to Sheerness DBFO Project in Kent. A large part of this project involves the construction of a major new river crossing from the mainland of England to the Isle of Sheppey. The scheme covers 17km of trunk road with construction work valued at £70million. The project will be open to traffic in summer 2005.

Further DBFOs are being prepared to cover the widening of some major motorways in England. The current DBFO Model contract is likely to be modified for these large motorway-widening contracts to speed up the process of contract negotiation and award.

In July 2003, the Secretary of State for Transport announced proposals to widen the majority of the M25 motorway (105km) to dual 4 lane standard and a length of the M1 motorway between Leicester and Sheffield (85km) in northern England to dual 4 lane standard. The capital cost of each of these widening schemes is expected to cost in excess of £1bn and sections of the projects are likely to be procured under a DBFO Contract.

For the M25 Widening Contract a consultation with industry day has been held following which the Agency has confirmed that the whole widening programme will be taken forward as a single large DBFO Contract. The payment arrangements are currently under consideration and a mechanism incorporating elements of lane availability, condition criteria and performance is being assessed.

For the M1 (J 21-30) Widening Contract, Phase 1 will include widening of those sections of the M1 where no additional land is required and this will be procured using an Early Contractor Involvement Contract with a start of works in 2007. Phase 2 will use a DBFO Contract and will involve public consultation on the options for widening with a start of works in 2009.

In February 2003 the Highways Agency consulted with industry on the scope for improving DBFO procurement, the results of which will be included in these future motorway-widening DBFOs. The main areas identified for improvement concern speeding up delivery, increasing contract flexibility and reducing the costs of tendering. It is considered that large-scale DBFO projects can deliver significant value for money savings over conventionally procured projects. As a further development it is felt that the early involvement of a contractor in the procurement of a DBFO project may bring additional benefits to the process and this is an aspect also under consideration.

The Highways Agency intends to continue the procurement of a significant proportion of major projects using private finance in order to maintain the benefits of appropriate risk transfer, value for money, rapid delivery and high standard of service in the management and delivery of the nation's major infrastructure projects. Other suitable projects for DBFO will be considered in the future programmes of work and improvements recommended for DBFO procurement from the consultation process will be introduced as part of the delivery of the new schemes identified.

