



CAMBRIDGESHIRE COUNTY COUNCIL TRANSPORT INNOVATION FUND - BID FOR PUMP-PRIMING FUNDING

EXECUTIVE SUMMARY

Cambridgeshire has a problem. We must do something to tackle the rising congestion generated by future housing growth. Doing nothing, or even a continuation of existing measures will not be enough, and we will be open to criticism if we fail to address the issue effectively.

Local authorities in Cambridgeshire have an excellent record in delivery of innovative and successful transport. We have contained congestion and built public transport patronage during past growth by introducing packages of schemes, which balance hard and soft measures. But the scale of the challenge we face is such that we need to investigate every option to manage future traffic growth.

We are therefore seeking pump-priming funding through TIF to undertake a study to examine whether a broadly fiscally neutral “congestion charging” scheme (i.e. a scheme which would not significantly change net costs for an average motorist) coupled with public transport and road improvements could, and indeed should, be part of the solution for future traffic problems, and if so, what are the options and issues. This is an innovative approach, but it does raise questions around how it might operate which will probably require cooperation with central government to explore opportunities.

Cambridgeshire is about to experience a major acceleration in housing growth to meet regional and national priorities. This will increase significantly the challenges we face and will necessitate further major improvements to transport provision. To help plan for this, we are developing a Long Term Transport Strategy (LTTS) to 2021. As part of this strategy, we have modelled the future transport network, taking into account the impact of housing developments and the currently planned and probable infrastructure improvements, to identify the potential problems we will face in the future.

This work suggests that without intervention, by 2016 the majority of the forecast additional 63,000 trips per day into and out of Cambridge will be undertaken by car, causing a worsening of congestion and emissions, with a consequent negative impact on the local and national economy, the environment and residents' quality of life throughout the County. The LTTS provisionally identifies a package of measures combining intensive public transport and walking and cycling improvements with demand management as the most effective strategy to alleviate future congestion. Modelling indicates that such a package could lead to an actual reduction in car use, with the bulk of the shift going towards public transport.

The total cost of the investigative work and subsequent development of an appropriate TIF package, including related activities already commenced in anticipation of the need for action, is £770,000. We are seeking TIF pump priming support for 50% of this amount.

BACKGROUND

Cambridgeshire is a diverse county. Cambridge and the urban core around it is a vibrant, growing community, driven by a strong technology and education focused economy. The area is one of the most prosperous in the country and makes a significant contribution to national GDP. In the more rural areas to the north of the county, growth has been less marked. There are higher concentrations of manufacturing and agricultural industries and a more widely dispersed population for which effective transport is critical. The County has very high levels of cycling, with 25% of Cambridge city and 9% of Cambridgeshire residents cycling to work: more than three times the national average

Population growth from 1991 to 2001 totalled almost 9% in the Cambridge Sub-Region (an area which includes Cambridge and the ring of market towns within a fifteen mile radius of the city) and 6.5% in the remainder of the County. Despite this, traffic entering and leaving Cambridge has remained at around 170,000 vehicles per day for the past five years, in line with our targets.

We have already successfully introduced packages of innovative measures that have delivered on our policy objectives, including:

- traffic management measures in Cambridge, such as use of electronically controlled rising bollards to allow access only for public transport and essential service vehicles, keeping 90% of traffic out of the city centre. Further improvements are under way to provide additional capacity for public transport, and improve traffic flows;
- a reduction in the overall amount of central area car parking and adoption of high levels of charging, including differential charging in off street car parks;
- implementation of a successful ring of Park and Ride sites, operated commercially by Stagecoach, and currently attracting over 1.6 million users per annum;
- partnership working with commercial bus operators in the County. For example, in 2001 Stagecoach invested £4m in new vehicles and marketing to develop the Citi network contributing to patronage growth of 45% over four years;
- increases in capacity and conditions for bus operations through bus lanes, traffic light priorities and road improvements, helping to reduce journey times and increase service reliability;
- working with employers to implement travel to work initiatives that have encouraged use of sustainable travel. For example, at Addenbrooke's Hospital proactive measures to encourage more sustainable travel patterns resulted in car use reducing from 74% to 42% between 1993 and 2003. Bus use increased from 4% to 23%, aided by a new on-site bus station and service improvements, and cycling and walking also increased.

We have achieved this success through close integration of land use planning policy and transport strategy. The Cambridgeshire and Peterborough Structure Plan, adopted in 2003, set the basis for sustainable development in the County by concentrating growth in or close to existing urban areas and in a new town at Northstowe. Such an approach makes it easier to provide sustainable transport, as

growth concentrated in this way is easier to serve by public transport, while the proximity of development to facilities will make it simpler to encourage walking and cycling. Our LTP sets out how we will deliver schemes to complement this.

However, analysis through the Long Term Transport Strategy indicates that even with these measures, traffic congestion and environmental problems will increase significantly as extra housing development takes place. The LTTS has looked to the period 2021 and over that period, it indicates clearly that further substantial measures will be required if Cambridge is to continue to function effectively, to meet its full GDP potential and to continue to offer an attractive quality of life for its residents.

TRANSPORT PROBLEMS AND POTENTIAL SOLUTIONS

There are a number of transport challenges evident in Cambridgeshire today. According to the latest DfT figures, traffic flow on trunk roads is 73% higher than the national average; car mode share for commuting is 6.5% higher; average distance travelled to work is more than double, at 14.5 miles; and 55% of those working in Cambridge live outside of the city, leading to significant peak time demand on radial routes.

These problems will be exacerbated by current regional plans to construct 57,400 new homes in Cambridgeshire between 1999 and 2016. Without intervention, the impact of this level of growth added to historic growth levels will generate worsening road congestion, increase environmental emissions and have negative economic consequences throughout the County.

While past strategy has been demonstrably successful, the initial conclusions from the Long Term Transport Strategy study indicate that residents throughout the County will feel the impact of increased congestion, with those who travel into Cambridge from rural areas doubly impacted by radial corridor and urban congestion. Planned improvements to the A428 and A14 will relieve trunk road congestion, but will provide a faster flow of traffic into the city, contributing to urban congestion.

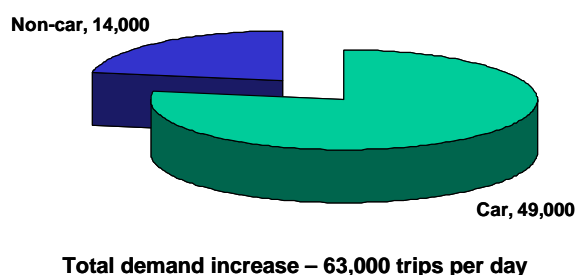
In the Cambridge sub-region, between 2006 and 2016 the model forecasts:

- 15% overall increase in journeys on the network
- 16% increase in total distance travelled
- 26% increase in total travel time

In the Cambridge Urban area, the impact is even more marked, with:

- 30% increase in journeys starting and finishing in the Cambridge Area
- 27% increase in total distance travelled
- 44% increase in total travel time
- 12% reduction in average speed
- 88% increase in delay at junctions

The figure below illustrates that consolidation of these figures suggests an increase in demand of 63,000 trips per day by 2016. If current mode share is maintained, then up to 49,000 of these trips could be by private car for travel into and out of Cambridge, with further increases in traffic flow within Cambridge city. The levels of congestion and environmental pollution generated by such an increase in road traffic would clearly be unacceptable.



Problems will not be confined to urban areas. Some specific issues arising from the first stage of the LTTS work included:

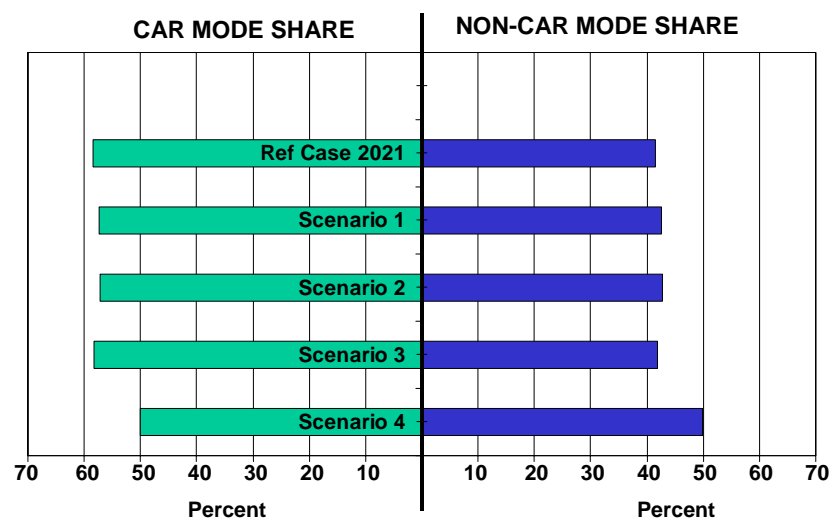
- Current congestion and accident levels on the A14 between Cambridge and Huntingdon necessitate some action to either increase capacity and safety, reduce traffic levels or both. The existing Highways Agency targeted programme scheme for the A14 from Ellington to Fen Ditton is aimed at addressing these issues.
- Congestion is growing on the A10 between Cambridge and Ely, and if unchecked will aggravate the already severe peak time delays in the southern section. More traffic will be diverted to the parallel B1049, causing increasingly severe problems in the residential villages of Cottenham and Histon.
- There are a number of “pinch points” in the County which cause significant and increasing delays, such as the A142 at Ely due to the level crossing, sections of the A428 from St Neots to Cambridge, Kings Dyke level crossing on the A605 to Peterborough, and the A47 near Wisbech.
- Increasing congestion on main radial corridors will drive traffic to seek alternative routes, creating additional areas of congestion
- High quality public transport services are essential to serve new developments such as the proposed Northstowe new town, connecting them to employment and other services

To help identify the impact of potential transport solutions, the LTTS study explored four scenarios, and compared them with the above forecast (the “reference case”). The purpose of these scenarios was to assess the sensitivity of travel demand and

modal choice to different types of interventions such as improved public transport, walking or cycling facilities. The scenarios tested were:

- Scenario 1 – intensive walking and cycling improvements (plus low key public transport improvements)
- Scenario 2 – intensive public transport improvements (plus low key walking & cycling improvements)
- Scenario 3 – highway improvements (plus low key public transport, walking & cycling schemes)
- Scenario 4 – demand management (a range of measures plus intensive walking, cycling and public transport improvements)

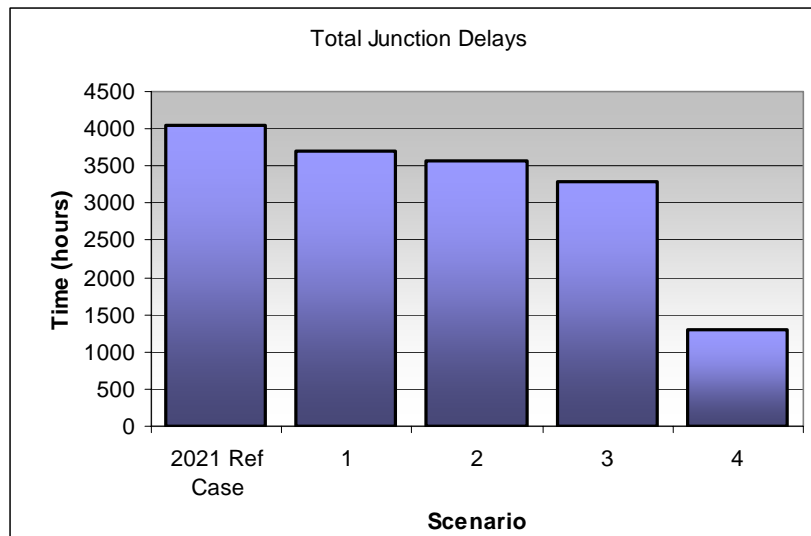
Although these were hypothetical scenarios and in themselves do not represent the actual policy mix that would be implemented, they do give an indication of the most likely elements of a successful transport package. The results are summarised in the diagram below, which compares the reference case mode shares for car and non-car (the total of cycling, walking, bus and high-quality public transport) with those forecast for each of the four scenarios tested.



This clearly illustrates that each of the scenarios will have an impact on mode share, but the test that combined further demand management with public transport improvements in scenario 4 shows a marked modal shift from car to sustainable forms of transport. It suggests an 8.4% reduction in the mode share for private car, a 3.2% increase in the mode share for non-motorised trips and a 5.2% increase in the mode share for public transport.

Scenario 4 also indicates a reduction in total travel distance in terms of vehicle miles of 9.0%, directly related to the 8.4% reduction in car mode split, and a 20.9% reduction in total travel time, reflecting the fact that the remaining car users on the network are benefiting from reduced delays and a subsequent increase in average speed.

The impact on congestion is perhaps best illustrated by the total amount of time spent at junction delays, shown in the following graph.



PROPOSED TIF SCHEME STUDY

We are seeking pump-priming funding to build on the LTTS study, and carry out the necessary investigation and development work to identify the options that would most effectively address the transport problems we face.

We will be wide ranging in this study, considering all potential options, but at the same time founding the work on the need to maintain and enhance the economic viability of Cambridge. In determining the elements of a TIF package, we are aiming to provide essential sustainable transport measures and infrastructure to:

- Support local, regional and national economic development
- Deliver the residential and commercial growth agenda
- Minimise the environmental impact of additional transport movement
- Support social inclusion

Firstly, we will explore whether some form of congestion charging in Cambridgeshire, where drivers pay a charge when crossing charging zones, is an appropriate mechanism for supporting sustainable growth. If so, the study needs to identify what measures would be most effective and practical in the Cambridgeshire environment. Issues include the geographical coverage, the nature and level of any charges, the supporting technology, the options for scheme management and revenue funding mechanisms, including means of making the overall package of measures affordable. We will take into account what has been learned from the London scheme, including the need for a more innovative and lower cost means of administering a charge.

We wish to examine options which provide effective levers to drive behaviour change. However, we recognise the challenge of public acceptability of this type of scheme, and the risk of it being perceived as an additional form of taxation. We will therefore also examine how such a scheme could achieve broad fiscal neutrality for the average motorist, with higher charges for higher car usage. This will require innovative process change, for example:

- Motorists who live within a certain distance of Cambridge could be given a discount on their road fund licence. This could include an inner ring at a higher discount rate, and one or more outer rings at lower discount rate(s). A review of such an approach would require cooperation from the DVLA . It also raises the challenge of how to achieve equity for both those who travel into Cambridge, and those who live within the affected area but whose travel patterns do not take them through a charging area.
- A congestion charging regime could be integrated with the income tax system, for example with a tax coding credit, requiring cooperation with the Inland Revenue and local employers. Again, we would have to address equity problems for those who are not within the tax regime.
- Credits could be administered in other ways – for example, through reduced parking costs, and/or provision of credits for use of public transport

The Highways Agency have already expressed a keen interest in working with us as we study options, since the M11 and A14 are key components of the road network around Cambridge. We will also ascertain the wider benefits that could accrue from current and emerging technology. For example, technology to support some form of congestion charging could be a powerful tool to generate spin-off benefits such as providing key real time information for motorists and for traffic managers, helping to keep Cambridgeshire moving.

Secondly, we will define the necessary wider package of public transport improvements, highways and infrastructure improvements, and those softer measures which build on our past successes including further cycling, walkways and proactive travel planning.

The clusters of high technology industry and academia in and around Cambridge will benefit significantly from measures such as these. Provision of excellent transport to such clusters can not only bring added GDP value through travel time savings, but can widen the labour market, attracting specialist skills, creating competition and innovation through greater density of employment. We are, therefore, confident that we will be able to demonstrate a significant contribution to the national economy in addition to the local and regional benefits.

If our bid for pump priming funding is accepted, then through the study from 2005 until mid 2006, we will develop and evaluate the options, carry out appropriate consultation, and establish whether to prepare and submit a full TIF bid.

If a subsequent TIF bid is submitted and is successful, then from Autumn 2006 to April 2008, we will carry out additional work to further consult stakeholders, and develop technical and environmental specifications in more detail. This will position the County Council to have measures in place as housing growth accelerates and the impact of projects such as the A14 improvements start to be felt.

POTENTIAL ELEMENTS OF A TIF SCHEME

It is a requirement of the bid that we set out the elements of a proposed TIF scheme. Clearly, until the investigative work set out in the previous section has been completed, we cannot be definitive regarding the package elements, or indeed whether a TIF scheme is appropriate. The study will determine the shape of scheme that can successfully address local needs.

However, as an indication, complementary improvements to public transport and infrastructure will be an essential part of the overall package. Some possible examples include:

Public Transport Network Improvements

- Further public transport network improvements, particularly on local buses, building on any which may be supported by Kickstart funding, and extending the number of participating operators beyond Stagecoach
- Improving the integration between bus and rail services, through integrating timetables, information and ticketing
- High quality vehicles as part of the Cambridgeshire Guided Busway scheme
- Application of technology to reduce emissions and improve the safety, efficiency, and customer experience of public transport: for example use of optically guided buses in parts of the city centre, and alternative fuel, very low emission public transport vehicles in urban areas
- Development of the public transport rural network to address accessibility issues

Highways Improvements

The package of measures will only be fully effective if it includes improvements to the main highways network to address the issues identified by the LTTS. Partnership working with the Highways Agency is critical to address many of these. Examples include:

- Improvements to the A14 west of Cambridge
- Further improvements to the A428 beyond the current scheme, in particular to the section between and A1 and Caxton Gibbet
- Some traffic management improvements to alleviate congestion on the A10 North of Cambridge and provide faster public transport journey times
- The proposed Cambridgeshire Guided Busway, which is an essential component of contributing to containing traffic growth on the A14, as well as providing high quality public transport services to Northstowe and other development areas
- Alleviation of delays at pinch points such as Ely railway station
- Measures to deter traffic from rat-running through residential to complement means of encouraging modal shift

Infrastructure and Other Improvements

- Bus priority measures to improve journey times and reliability
- Highways schemes to help manage traffic flow efficiently and control congestion, while providing advantageous journey times for public transport
- Improvements to public transport related roadside infrastructure
- A series of softer measures to reinforce the above, including further cycling, walkway and proactive travel planning activities
- Extension of the principles applied to traffic management in the centre of Cambridge (the “core scheme”) to an outer ring
- A highways management centre to enable proactive monitoring and control of the traffic network throughout the County
- A series of fund raising measures to help support the revenue costs of the schemes, potentially linked to gaining financial or “in kind” contributions from beneficiaries of the scheme
- Use of emerging technology to present comprehensive, integrated information on all components of the transport network to private and commercial users

FUNDING REQUIREMENTS

To support development work for the above package, Cambridgeshire County Council is seeking a total of £385k, made up of:

2005-06	£223k
2006-07	£72k
2007-08	£90k

This represents 50% of the cost of developing the package, including the work already commenced in preparation for TIF. Development cost components include:

£k.....			
	05-06	06-07	07-08	Total
Phase 1				
Modelling & package option development	120			120
Congestion Charging study	150			150
Public Transport & Highways Scheme Development	100			100
Stakeholder & Public Consultation	75			75
Phase 2				
Develop detailed scheme specifications		120	155	275
Public Transport network specifications		25	25	50
TOTAL DEVELOPMENT COSTS	445	145	180	770
FUNDING REQUESTED (50%)	223	72	90	385

STAKEHOLDER INVOLVEMENT

We have a long history of successful partnership working which has facilitated our continuing success. In developing our Long Term Transport Strategy, we have ensured the full participation of key stakeholders including the Government Office for the East of England, the Health Service, Cambridgeshire Horizons and all of the District Councils in the County. Key partners are already familiar with, and in agreement with the findings of the LTTS, including the need to explore further demand management measures.

Partnership working will therefore continue to be an essential component of scheme development. Probable stakeholders and their role include:

Bus Operators: Delivery of new services for development areas, service frequency improvements, routing changes and feeder services, with a view to the majority of services being or rapidly becoming commercial, including services to support rural Park and Ride; provision of services in Cambridgeshire Guided Busway; partnership approach to marketing and publicity to build improved image for public transport.

Cambridge City Council and South Cambridgeshire District Council: Joint working to define and implement any highways improvements, and any demand

management schemes in and around Cambridge; potential provision of funding via Section 106 agreements and other sources.

Other Cambridgeshire District Councils: Contribution to the analysis of package options, and their impact outside the Cambridge sub-region.

Cambridgeshire Horizons: Help to coordinate development planning and alternative funding sources.

East of England Development Agency: Joint working on analysis of the local and regional economic impact of package options.

Highways Agency: Identification and implementation of improvements to the trunk road network as part of the overall package of measures, taking into account the impact of demand management and other changes. We anticipate that Highways Agency schemes will form a key component of the integrated package.

Neighbouring Local Authorities: Assistance with identifying the economic and practical impact of the measures in areas which have some dependency on Cambridgeshire for employment and services, for example Haverhill in Suffolk.

Cambridge Chamber of Commerce: Assistance in assessing the benefits and issues for local industry, and identification of opportunities for positive economic impact.

Greater Cambridge Partnership: Help to identify and optimise the benefits to Cambridge as a centre of excellence for innovation and creativity, encompassing both traditional and new business types.

Network Rail and Train Operating Companies: Explore how integrated multi-modal transport can contribute to congestion management and economic growth.

Local Retailers and Businesses: We aim to consult local commercial enterprises as part of the scheme development process, either individually for larger businesses or through representative organisations such as the Cambridge Retail and Commercial Association (CRACA).

DELIVERY TIMESCALE

Because of the need to ensure that our transport and planning policies remain closely integrated, we will introduce transport improvements to align with the County's growth forecast.

Until we have determined whether a TIF scheme is appropriate and if so, what shape it will take, it is difficult to forecast timing. However, as local housing completions start to accelerate in 2008, it would be appropriate for any scheme delivery to commence at the beginning of the TIF funding period.