

# OXFORD-TO-CAMBRIDGE CORRIDOR: AN ALTERNATIVE TO THE EXPRESSWAY

A proposal by Planning Oxfordshire's Environment and  
Transport Sustainably (POETS)

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## An alternative strategy for linking Oxford and Cambridge

The UK Government has proposed the construction of a motorway-style expressway between Oxford and Cambridge. This new road will have significant adverse impacts on Oxfordshire – it will create a major source of air and noise pollution, destroy farmland and habitats, increase CO<sub>2</sub> emissions and bring more traffic onto the county's existing roads.

This paper proposes an alternative. We have developed a package of rail, bus, road and cycling enhancements that will provide an even greater increase in the county's transportation capacity whilst also delivering a wide range of additional benefits for the residents of Oxfordshire.

### **1. Cheaper**

Our proposal will cost significantly less than a new expressway, which is currently quoted as **costing £4.5bn**. These savings should mean that more funds will be available for other local transport improvements and road maintenance.

### **2. Quicker to implement**

Most of the measures in our proposal could be delivered much earlier than an expressway. This will mean that increased capacity and reduced pollution and congestion will also be achieved more quickly.

### **3. Less disruption for Oxfordshire residents and the travelling public**

Cancelling the Expressway will eliminate the need for several years' disruption, congestion and construction traffic on the county's roads.

### **4. Fewer HGVs on our roads**

Our solution will enable a large transfer of road freight on to rail. This will reduce the number of HGVs on some Oxfordshire roads – particularly the A34.

### **5. Lower harmful emissions**

Promoting public transport rather than car and lorry use will mean that emissions of greenhouse gases and pollutants will be substantially lower.

### **6. Less noise**

Once built, a corridor the length of the expressway and hundreds of metres either side, will be impacted by high levels of traffic noise. Our plan will avoid this.

### **7. Safeguarding valuable land**

Any expressway route will require building over precious landscapes, habitats and agricultural land. Our alternative measures will not entail this environmental cost.

### **8. Reduced traffic**

Numerous studies indicate that new arterial routes tend to increase overall road use in a region. In contrast, the targeted public-transport improvements in this proposal will reduce traffic on the county's roads.

### **9. Better bus services**

The improved bus services (and connecting public transport options) will result in more efficient bus operations and higher patronage. In turn, this will lead to lower fares and a greater range of bus services.

### **10. Fewer road casualties**

Our plan for active management of the A34 and other major routes will result in fewer road accidents. This will mean fewer injuries and deaths and less disruption.

### **11. Greater use of sustainable transport**

These measures will enable and encourage Oxfordshire residents to make greater use of low- or zero-emissions transport: buses, trains and bicycles.

### **12. Improved public health and well-being**

By reducing pollution and noise and promoting walking and cycling, our proposal will contribute to improved health outcomes.

### **13. Targeted growth of existing towns and cities, not sprawl across the countryside**

There will be scope for development in specific areas. Rather than being spread along a road corridor however, any growth will be focussed on larger towns and cities – such as Oxford, Cambridge and Milton Keynes – and around stations along the East-West rail route.

### **14. More reliable long-distance travel**

Completion of the East-West Rail link will facilitate longer-distance travel across the Oxford-to-Cambridge corridor, along with more reliable journey times.

## Oxford to Cambridge corridor: an alternative to the Expressway

1. Traffic conditions on the A34 and other major roads in Oxfordshire are often poor, and the network is prone to congestion and instability due to incidents and/or high volumes of traffic. The A34 also has an appalling safety record with, over its length, 3412 casualties (including 45 fatalities) in the 5 years 2013-2017, with a significant proportion of the incidents involving HGVs.

2. Building a new “Expressway” between Oxford and Cambridge, however, would make conditions worse by attracting more traffic on to the route. Encouraging more road traffic at a time when the need to reduce greenhouse gases and pollution from vehicles has never been more urgent, would be an act of folly. Carbon emissions from transport in the UK are continuing to rise and although a transition towards electric vehicles will help, it will do little to reduce noise and harmful particulate emissions from tyres and brakes, nor should we overlook the carbon impacts arising from vehicle manufacture and generation of electricity to feed in to the grid. It is estimated that there are some 30,000 premature deaths a year in the UK due to air pollution.

3. Repeated studies<sup>a</sup> have shown that building new roads rapidly leads to more traffic and longer trips, quickly undermining the projected benefits in time savings.

4. There is an alternative approach to managing traffic on Oxfordshire’s roads which would be based mainly on improving the efficiency of the existing road network and seeking to reduce the number of vehicles on the roads. This would be achieved by maximising the proportion of journeys that can be undertaken by public transport, creating conditions that encourage more people to walk or cycle for short trips and encouraging more freight to be carried by rail. Fast, reliable journey times along the Oxford to Cambridge corridor will be available on the East-West Rail link, much of which will use trackbed which is already in place. Such an approach would also complement national objectives to reduce carbon emissions and improve the health and well-being of the population.

5. This approach can also accommodate new development in a sustainable way, provided it is located around existing major towns and railway stations - or even new settlements – that are located along the East-West Rail line.

6. The core elements of a **Sustainable Transport Strategy for the Oxford to Cambridge Corridor** within Oxfordshire are set out below (*See Appendix 3 for more details*).

- 1) The introduction of active management along key lengths of the A34 and other major roads, incorporating variable speed management with camera enforcement, and other road safety improvements.
- 2) Completion of the East-West Rail link to Cambridge incorporating electrification from the outset and with additional capacity for more freight traffic.
- 3) A rail capacity upgrade and electrification between Didcot and Oxford.
- 4) Re-opening of the Cowley Branch Line for passenger services.

- 5) Progressive development of Bus Rapid Transit networks in Oxfordshire (and Cambridgeshire and elsewhere).
- 6) Establishing a comprehensive network of cycle routes, particularly within and between all larger towns.
- 7) Establishing a Behavioural Change Unit that would work with residents and employers to provide better information about travel options and incentivise the use of more sustainable modes, and better access to travel choice information.

7. Compared to an Expressway, such a strategy could be largely implemented much more quickly, would have a much lower implementation cost, avoid all the disastrous environmental impacts, cause far less disruption during its construction and have a more favourable operational performance financially for both central and local government.

8. There is currently much uncertainty about how road travel might change in the future. Car ownership and use is falling amongst young people, with more lift-sharing and more home-working, while automation might fundamentally affect how our roads are used in the years to come. Government is also faced with an imminent challenge about how to replace revenue from fuel duty as the proportion of petrol- and diesel-engined vehicles falls. Different methods of charging for road use and managing traffic might well lead to a more managed approach to use of our major roads, which could build on the strategy being proposed above for the A34. Now is most certainly not the time to embark on a major expansion of the road network. It is time however, for Government to adopt some joined up thinking that complements stated policies to reduce CO2 emissions and air pollution and enhance the environment.

9. Any alternative strategy should of course be subjected to meaningful public consultation<sup>b</sup> to help shape it before detail design and development work is undertaken.

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<sup>a</sup> The definitive document is the 1994 report by the UK advisory committee SACTRA which carried out a major review of the effect of increasing road capacity, and reported that the evidence suggested such increases often resulted in substantial increases in the volume of traffic. At the time this led to a change in Government policy and the abandonment of the Roads for Prosperity Programme. While Government seems to have forgotten this lesson, many subsequent reviews all round the world have had the same findings. A recent report from CPRE, "The End of the Road?" - which includes the Newbury By-pass, which has seen a 56% growth in traffic - has collated further examples and recent evaluation of M25 smart motorways eg M25 J5-7 have shown that journey time savings resulting from using the hard shoulder were largely eliminated within 2 years, due to rising traffic levels.

<sup>b</sup> There has been no meaningful public consultation on the proposal for an expressway. The residents of Oxfordshire deserve to be properly consulted on the future of the County and future development. The Oxfordshire Plan 2050 provides an opportunity to achieve a consensus to shape the future, but this will only be possible if preconceived ideas for growth and measures such as an Expressway are put to one side until the core priorities and objectives are established. Then would be the time to consider whether proposals such as an Expressway or the Sustainable Transport Strategy outlined here are the best way to achieve them.

## Appendices

### **Appendix 1: Current Problems and Challenges in Oxfordshire**

- 1.1 Congestion and unreliable journey times on A34
- 1.2 Congestion and unreliable journey times on other major roads
- 1.3 Unacceptable level of casualties on A34 and other major routes
- 1.4 Inability to maintain the highway network to acceptable standards, such as defects and backlog of repairs
- 1.5 Increasing car dependency away from major towns and cities
- 1.6 Unsafe and unattractive conditions for cyclists
- 1.7 Increasing unreliability and unattractiveness of bus services due to congestion
- 1.8 High public transport fares
- 1.9 Inadequate information about travel choices
- 1.10 Increasing isolation and reduced opportunities due to loss of local bus services
- 1.11 Need to reduce traffic levels because of:
  - a) greenhouse gas emissions (feeding climate change)
  - b) harmful emissions from motor vehicles (exhausts, tyres, brakes)
  - c) noise
- 1.12 Need for greater levels of physical exercise and independence for health and well-being
- 1.13 Slow progress of East-West Rail and its de-scoping (no electrification and no freight)
- 1.14 Slow progress on rail capacity upgrades and electrification (Didcot to Oxford)
- 1.15 Lack of progress in developing a high quality bus transit network
- 1.16 Lack of progress in developing high quality networks for cyclists
- 1.17 Accommodating pressures arising from planned housing and economic growth.

**Appendix 2: an expressway is not the solution**

- 2.1 Will increase traffic levels widely across Oxfordshire and beyond as it will encourage more and longer vehicular trips
- 2.2 Will encourage more car-dependent development across the corridor
- 2.3 Will further reduce the attractiveness and viability of local bus services
- 2.4 From day 1 it will increase traffic on other major routes such as A40 west of Oxford, A34 south of Abingdon/Didcot, and the M40 south of its new junction with the Expressway
- 2.5 Over time the induced traffic can be expected to increase so that journey time benefits will be lost and unreliability will return, causing even worse congestion and pollution than today
- 2.6 Will undermine patronage and viability of the East-West Rail link
- 2.7 Will cause years of disruption (and blight) across Oxfordshire during its construction
- 2.8 Will irrevocably damage important and irreplaceable wildlife habitats and landscapes and adversely impact on biodiversity – fundamentally in conflict with the Government's 25 year strategy for the environment
- 2.9 Will blight more areas of Oxfordshire to continuous noise
- 2.10 Will have a highly intrusive visual impact on the landscape
- 2.11 Will increase greenhouse gas emissions
- 2.12 Will increase harmful emissions (not eliminated by the trend towards electric vehicles)
- 2.13 Will result in the permanent loss of countryside and valuable agricultural land
- 2.14 There is great uncertainty regarding future traffic demand. Car ownership and use is falling amongst younger people; new technology and sharing could lead to big changes in the way people travel; government also has to find new mechanisms of charging for road travel to replace falling fuel tax income. Speculative major increases in road capacity would therefore be irresponsible.
- 2.15 Could adversely impact on land drainage and result in local flooding
- 2.16 Very high cost which will divert funding away from investment in less damaging and more sustainable options.

## APPENDIX 3: A SUSTAINABLE TRANSPORT STRATEGY FOR THE OXFORD TO CAMBRIDGE CORRIDOR

These bullets provide further detail for bullets 1-7 in paragraph 6 of the main text.

### **1. Introduction of active management strategy along key lengths of the A34**

Introduction of an active management strategy for key lengths of the A34, and possibly other routes. This would include some or all of the following elements:

- a) Variable speed management with camera enforcement
- b) Review and redesign of all lay-bys and junction slip roads
- c) The potential to introduce charges at certain times of day and/or for specific categories of vehicles, such as Heavy Goods Vehicles
- d) Additional Noise Barriers
- e) Possible enclosure in specific locations eg central Botley, to contain harmful emissions and noise
- f) Short lengths of additional lane where there are large differences in speed between vehicles eg crawler lanes on inclines where lorry speeds may fall significantly

Active management could include a range of measures of increasingly greater sophistication and cost. At its simplest it would involve the introduction of fixed lower speeds enforced by cameras with minimal signing requirements. Introduction of say a 50mph limit over the congested length would

- a) Reduce speed differentials between vehicles and encourage motorists to stay in lane thereby enhancing safety, particularly at junctions and at lay-bys where weaving takes place and slower traffic is merging
- b) Increase effective capacity at times of congestion
- c) Reduce noise and emissions of greenhouse gases and other pollutants
- d) Reduce accidents and casualties.
- e) Improve reliability of journey times.

Introduction of variable speed controls would require additional variable message signing, and possibly require the installation of visually intrusive overhead gantries. This would offer more flexibility to permit higher speeds at certain times, or lower speeds at certain times or in certain locations, such as through Botley.

There may also be a case on safety grounds for controlling access to slip roads and/or lay-bys at certain times of the day, although this could lead to vehicles diverting onto unsuitable roads. The potential risk of diverting vehicles (including HGVs) onto other roads would also need to be assessed if any charging regime were introduced.

The camera technology would also offer the possibility to introduce tolls or charges at certain times of the day or for certain classes of vehicles, such as HGVs. This might be best introduced to complement whatever system Government adopts for future nationwide network management and revenue collection, and to coincide with the opening of the East-West Rail link.

## **2. Completion of the East-West Rail link between Oxford and Cambridge with provision for freight and electrified at the outset**

Design for the western section from Oxford to Bedford is largely complete, but Government has asked that the originally included electrification should be deleted from this scheme to save money. Consultation has been undertaken on the preferred route from Bedford to Cambridge, with a view to this being constructed by the mid-2020s.

This opens up the opportunity for new through passenger services from Oxford to Leicester, Nottingham, Leeds, Cambridge, Norwich and beyond. All of the major north-south rail corridors that will intersect with the East-West Rail link, are already electrified, with the exception of parts of the Midland Main Line where, like Didcot to Oxford, Government has currently paused its implementation.

Electrifying the railway will reduce emissions – to zero at point of use – reduce maintenance and operational costs and offer trains with faster acceleration and faster journey times. Including it at the time the railway is being constructed will be substantially cheaper and easier than doing it later once the railway is operating, which apart from incurring higher cost, would presumably necessitate route closures and journey disruptions. Implementation of electrification along the whole link from Oxford to Cambridge could be expected to add about £125-£150m to the cost, provided it was done at the outset.

The East-West Rail link offers a huge opportunity to achieve a substantial reduction in road freight (particularly that originating from Southampton docks) and in particular remove large numbers of heavy goods vehicles from the A34. It is important that suitable freight loops, at modest additional cost, are included in the scheme to allow freight trains to be overtaken by passenger trains when required.

Government also needs to prioritise investment on other rail lines between Southampton and the Midlands and North. This will additionally facilitate an increase in capacity that can deliver a further significant transfer of freight movements off the A34 and on to rail.

## **3. Increase Rail Capacity and electrify the lines between Didcot and Oxford (Wolvercote).**

Electrification between Didcot and Oxford was part of the Great Western Electrification Programme and new electric rolling stock has been built for these services. The Government has paused this on financial grounds and as a result diesel shuttle trains are operating services between Didcot and Oxford, with many passengers to intermediate stations forced to change trains at Didcot. The railway is incurring higher operational costs as a result of this decision and newly built express trains have had to have diesel engines added and carry these and fuel tanks around, even when operating on electrified lines. The economic and environmental case for completing the electrification to Oxford is clear.

There has been a long standing aspiration to enhance the track and signalling between Didcot and Oxford to increase capacity. Progressing this now will allow more passenger and freight services to operate on this length and reduce traffic on the A34 and other Oxfordshire roads. It would also offer the opportunity to

accommodate more stopping trains at some of the intermediate stations such as Culham and Radley. Alterations at Oxford Station will also be required and a new modern station would also encourage more rail use.

#### **4. Re-opening of the Cowley Branch Line**

A capacity upgrade as in 3 above would provide the opportunity to restore a passenger service between Oxford and Cowley, to serve the area south of Oxford which, although a major source of employment, has relatively poor public transport links to much of Oxfordshire and much higher car use than other parts of Oxford. Providing an attractive alternative will reduce traffic and congestion around this part of Oxford.

#### **5. Development of Bus Rapid Transit Networks**

The Oxfordshire Local Transport Plan (LTP4) identified a network of reliable, high frequency bus services linking key activity centres and Park & Ride sites in and around Oxford with Oxfordshire's major towns. By separating buses from congested roads and junctions and making services more efficient and reliable, it has the potential to attract large numbers of people out of their cars and on to public transport, with or without new demand management measures in Oxford, such as a workplace parking levy.

A key feature should be rapid boarding times with smart off-bus ticketing to minimise dwell times at bus stops.

More bus services would become commercially viable and fares would fall. There would be the potential to upgrade the most heavily used corridors to (electric) tram operation at some future date.

Despite this being Council policy since 2014, little progress has been made on its implementation other than developing a scheme for a length of the A40 from Eynsham as far as – but not across – the Wolvercote roundabout.

Oxfordshire County Council also needs to restore a modest level of financial support for non-commercial bus services as soon as finance permits.

#### **6. Establishing a comprehensive Network of Cycle Routes particularly into and between all larger towns.**

Again, Oxfordshire's Local Transport Plan already sets out the case, on both transport and health and well-being grounds, for encouraging cycling and the establishment of more good segregated facilities. Given the climate and health priorities and the need to reduce traffic on our roads, LTP4 is however no longer ambitious enough. As well as comprehensive cycle networks in our towns, more new routes such as that developed – but not yet funded – for the route from Eynsham to Farmoor are required and could achieve a huge increase in the numbers cycling regularly. Investment of £100-200m would achieve a step change in facilities across the County.

Improved road maintenance should make more roads fit for cycling.

#### **7. Establishing a Behavioural Change Unit**

A small team of well-trained staff can provide focussed information to residents and employers about alternative options for travel and help reduce use of cars on our

roads. A particular focus should be on areas of new development, working with new employers and employees and residents of new housing before their patterns of travel get established.

This paper has set out a package of measures for Oxfordshire, that we believe over time would deliver all of the suggested benefits of the Expressway, but without all of the damaging adverse consequences. We would suggest that other local authorities along the corridor should be encouraged to pursue similar policies.

## APPENDIX 4: COSTS

**5.1 The cost of the Expressway is quoted as £4.5bn.** This is described as the most likely outturn figure pending selection of the route. The actual range quoted in the Oxford to Cambridge Expressway Strategic Business Case, 2018, for different route options at that time is **£2.8bn to £8.5bn.**

**5.2** Many of the measures referred to in the alternative strategy set out in this paper are already in other Government budgets or should be funded from other Government budgets, particularly those relating to the Rail industry. Other key measures such as an active management strategy for the A34 or a new cycle network would be modest compared to the cost of the Expressway. Clearly until any alternative strategy is developed in more detail, following public consultation on what measures should be assessed, it is not possible to make an accurate comparison. It is clear however, that the alternative strategy proposed has the potential to be substantially cheaper than building the Expressway.

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