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## UK Bus Supplement 2017





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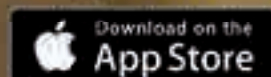


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# transporttimes

UK Bus Supplement 2017

**I want to see a thriving and innovative commercial bus sector**



## Partnership: the route to a thriving industry

Andrew Jones, Parliamentary Under Secretary of State for Transport

**B**uses are England's most used form of public transport, accounting for over 4.5 billion passenger journeys a year. Buses support our economy and connect our communities to the workplace, as well as to vital public services such as healthcare and education.

A great deal has been achieved through innovation by the bus industry, and through joint working between the bus industry and the Government. Operators are making great strides to improve the experience for their passengers. For instance, smart ticketing, whether on contactless cards, smartcards or otherwise, makes journeys across modes easier and speeds up journey times.

The Government has also played its part. We have provided over £200m through the Local Growth Fund for 15 bus schemes, including new bus stations, rapid transit schemes and bus priority corridors. We have also provided funding to reduce emissions from buses and to tackle air quality hotspots.

The Government has provided £30m via the Low Emission Bus Scheme, which has funded over 300 low emission buses and over £7.6m worth of supporting infrastructure. As part of the autumn statement, the chancellor announced more funding for future transport technologies.

The Government is in the process of making legislative changes to help to unlock the significant potential that exists in the bus in-

dustry. The Bus Services Bill will improve options for partnership working between local authorities and operators, allowing local authorities and bus operators to agree their own standards for services in their area. The Bill will also refresh powers for local authorities to franchise bus services and make it easier for passengers to access information on timetables, fares and routes.

I want to see a thriving and innovative commercial bus sector, and to help the industry increase passenger numbers. I want to encourage the sector to continue working with government, both local and central, and customers to introduce schemes and products that will make bus travel even easier and even more attractive.



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# The UK Bus Summit 2017

This supplement is published to coincide with the UK Bus Summit 2017, which is being held on 9 February 2016 at the QEII Centre, Broad Sanctuary, Westminster, London SW1P 3EE.

The third annual UK Bus Summit is once again supported by the Department for Transport. Following its resounding success in 2015 and 2016, the summit has become the central platform for a national policy discussion on issues facing the bus sector. Discussion will focus on the crucial role that buses play in supporting society and stimulating the economy; the range of successful technologies available for tackling pollution; and the scope for improved ticketing and information to improve the service for passengers. The event will also provide a forum to analyse and debate the strengths and weaknesses of the contrasting delivery models.

The conference will open with a keynote address from Buses Minister Andrew Jones, with four sessions on Bus policy in a post-Brexit world; The value of the bus to society; Any journey by green bus; and What will the Buses Bill mean for bus passengers?

Profiles of the conference speakers appear on the next two pages.

## Agenda

08:00 **Registration & Exhibition opens**

09:00-09:30 **Keynote Address**

- Andrew Jones MP, Parliamentary Under-Secretary of State for Transport

09:30-10:45 **Session 1: Bus policy in a post-Brexit world**

**Session chaired by Prof David Begg, Chief Executive, Transport Times**

- Valerie Shawcross CBE, London Deputy Mayor for Transport
- Humza Yousaf MSP, Minister for Transport and the Islands, Scottish Government
- Martin Griffiths, Chief Executive, Stagecoach
- Neill Birch, West Scotland Business Director, Systra

10:45-11:15 *Refreshment break*

11:15-12:30 **Session 2: The Value of the Bus to Society**

**Session chaired by Anthony Smith, Chief Executive, Transport Focus**

- Prof David Begg, Chief Executive, Transport Times
- Dr Manfred Rudhart, Chief Executive, Arriva
- Leon Daniels, Managing Director, Surface Transport, Transport for London
- Claire Haigh, Chief Executive, Greener Journeys

12:30-13:30 *Lunch*

13:30-14:45 **Session 3: Any Journey by Green Bus**

**Session chaired by Prof David Begg, Chief Executive, Transport Times**

- Andy Eastlake, Managing Director, LowCVP
- Giles Fearnley, Managing Director, First Bus
- Robert Drewery, Commercial Director, Optare

14:45-15:15 *Refreshment break*

15:15-16:45 **Session 4: What will the Buses Bill mean for bus passengers?**

**Session chaired by Prof David Begg, Chief Executive, Transport Times**

- Laura Shoaf, Managing Director, Transport for West Midlands
- John Henkel, Executive Sponsor – Integrated and Smart Travel, Transport for the North
- David Brown, Chief Executive, Go-Ahead





## Keynote speaker

**Andrew Jones MP**  
**Parliamentary Under-Secretary of State for Transport**

Andrew Jones was appointed Parliamentary Under Secretary of State at the DfT in May 2015. He was elected as Conservative MP for Harrogate and Knaresborough in May 2010.

From May 2003 to May 2011 Mr Jones was a local councillor on Harrogate Borough Council. Since being elected an MP in 2010, Mr Jones has been a parliamentary private secretary on the health, business and transport teams.

His ministerial responsibilities include bus policy; the Northern Powerhouse; devolution in England; local transport; smart ticketing; HS2; sustainable travel; and road safety.



**Professor David Begg**  
**Chief Executive,**  
**Transport Times**

Prof David Begg is chief executive of Portobello Partnership, which specialises in strategic advice to clients in the transport sector; publishes *Transport Times*; and runs a series of transport best practice awards in conjunction with the Department for Transport, Transport Scotland and Transport for London.

He is a non-executive board member of Heathrow Airport Holdings, a member of the Cubic Transportation Systems' advisory board and non-executive chairman of EAMS Group.

From 1999 to 2005 he chaired the Commission for Integrated Transport, which was set up to advise the Government on transport policy.



**Neill Birch**  
**West Scotland Business Director,**  
**Systra**

Neill Birch is Systra's West Scotland Business Director. He joined Systra in 2005 after 17 years with two of the UK's largest public transport groups. At Systra he has led transport planning and network optimisation projects around the world. His experience spans not only the UK but also Scandinavia, the Netherlands, Spain and Portugal, where he was part of Arriva's early expansion into Europe. He has led comprehensive strategic reviews of all public transport in the Republic of Ireland, contributed to network reviews in Sheffield, Bristol and Dublin, and managed a strategic review of all road-based subsidised transport in Northern Ireland.



**David Brown**  
**Chief Executive,**  
**Go-Ahead**

David Brown is chief executive of the Go-Ahead Group, one of the UK's leading public transport providers, employing over 23,500 people and carrying more than a billion passengers each year on its trains and buses. Go-Ahead has a 30% share of rail passenger journeys made in the UK. It operates bus companies across the UK from as far afield as Newcastle and Plymouth, and is the largest bus operator in London.

Mr Brown has held a number of senior positions in the transport industry including managing director of Berks Bucks Bus Co, chief executive of Go-Ahead's London Bus division and managing director for surface transport at Transport for London.



**Leon Daniels**  
**Managing Director, Surface**  
**Transport, Transport for London**

Leon Daniels joined Transport for London in April 2011 from FirstGroup, where he had been a director of the UK Bus Board since 2000.

For several years he owned and ran his own bus company, which grew to be the largest private sector bus company in London prior to the privatisation of London Buses. He sold the company to FirstGroup in 1998.

He oversees TfL's responsibilities for the safe and efficient running of London's buses, taxis, river services, the road network, congestion charging and the Santander Cycle Hire scheme.



**Robert Drewery**  
**Commercial Director,**  
**Optare**

Robert Drewery has over 15 years sales and marketing experience at a senior level in the bus and commercial vehicle industries. His career started with Leyland Daf, followed by the role of business development director of truck maintenance company Pullman Fleet Services. He led the Wright-bus sales team to win major contracts and oversaw the introduction of the New Routemaster.

Over the last 18 months at Optare, Mr Drewery has engaged with UK operators with a demonstration programme for the new double-deck product and extended range electric buses, as well as expanding Optare's overseas presence.



**Andy Eastlake**  
**Managing Director,**  
**LowCVP**

Andy Eastlake was appointed the LowCVP's managing director in April 2012, after serving both on the board and as chair of the members council. He has a strong background in vehicle engineering, specialising in powertrain developments, fuel economy and emission. He was formerly group head of commercial and projects at Millbrook Proving Ground where he led the work on powertrain development programmes and alternative fuels. As head of laboratories Mr Eastlake was responsible for all technical aspects of the business.

He is also a board member of Cenex, the centre for low carbon technologies.



**Giles Fearnley**  
**Managing Director,**  
**First Bus**

Giles Fearnley has been managing director of First Group's UK bus division since February 2011.

In 1991 he led a management buyout of Blazefield Holdings, which operated bus networks in Yorkshire and Lancashire. He remained as chief executive for two years following the group's sale to Transdev in 2006. In the mid 1990s he moved into rail and was one of the founders of Prism Rail, which operated four UK passenger rail franchises.

Mr Fearnley has served as chairman of the Association of Train Operating Companies and president and then chairman until 2011 of the Confederation of Passenger Transport.



**Martin Griffiths**  
Chief Executive,  
Stagecoach Group

Martin Griffiths is chief executive of Stagecoach Group, which has extensive operations in the UK, United States and Canada. He is responsible for all aspects of the management of the group's operations, new business development and implementation of the group's growth strategy. Mr Griffiths joined Stagecoach in 1998 as business development director and was appointed finance director in 2000.

Mr Griffiths is co-chairman of Virgin Rail Group and a non-executive director of AG Barr. He is also a director of the cross-industry Rail Delivery Group and chairman of its commercial working group.



**Claire Haigh**  
Chief Executive,  
Greener Journeys

Claire Haigh is chief executive of Greener Journeys, a coalition of the UK's major public transport groups and other supporters committed to encouraging people to make more sustainable travel choices. Her other current roles include director of the Low Carbon Vehicle Partnership, and adviser on the board of Transport for Greater Manchester. She is a regular columnist for *Transport Times*. Ms Haigh was previously project director for Journey Solutions, where she was responsible for the creation and implementation of Plusbus, the national integrated bus/rail ticket. She is Chartered Fellow of the CILT.



**John Henkel**  
Executive sponsor – integrated  
and smart travel  
Transport for the North

John Henkel has worked at West Yorkshire Combined Authority (Metro) since 1995 and became director of passenger services in June 2001. He was responsible for Metro's wide range of customer services and its role in local bus services.

He has been a director of ITSO and ITSO Services Ltd and has represented the six English PTEs on the Traveline advisory group.

Mr Henkel has acted as senior responsible officer for programmes including WYCA's smartcard and information programme. He took on the role of executive sponsor for the Smart North scheme in April 2015 and was seconded to TfN in July 2016.



**Manfred Rudhart**  
Chief Executive  
Arriva

Mr Rudhart studied electrical engineering at the Technical University of Karlsruhe before gaining a PhD in the same field at the Franco-Allemand Institute in Saint-Louis, France in 1995. He joined management consultancy Booz Allen Hamilton in 1996, becoming a member of the firm's management board in 2003.

In 2008 he joined Deutsche Bahn and held a variety of senior roles within the group, including CFO for DB Regio – the DB company which operates short distance train services, metros and buses in Germany. In May 2013 he was appointed chief executive of DB Regio.

Mr Rudhart joined Arriva as chief executive in January 2016.



**Valerie Shawcross CBE**  
London Deputy Mayor  
for Transport

Val Shawcross became London's deputy mayor for transport in May 2016. Prior to her appointment she was London Assembly Member for Lambeth & Southwark, a position she was first elected to in 2000. Ms Shawcross was chair and leader of the London Fire and Emergency Planning Authority, which runs the London Fire Brigade, between 2000-2008. She alternated as chair and deputy chair of the London Assembly Transport Committee from 2008-2016. Before being elected to the London Assembly she was a councillor in the London Borough of Croydon, having been elected in 1994 and becoming council leader in 1997.



**Laura Shoaf**  
Managing Director,  
Transport for West Midlands

Laura Shoaf is managing director of Transport for West Midlands. She has more than 20 years' experience in economic and spatial regeneration.

In her native US, Ms Shoaf held positions in the New York City Department of City Planning and the Institute of Public Administration.

Ms Shoaf was head of strategic planning at the Black Country Consortium, and became Black Country director of transport in 2013.

In 2015, she became strategic director for transport for the West Midlands ITA and managing director of TfWM in June 2016.



**Anthony Smith**  
Chief Executive,  
Transport Focus

Anthony Smith is chief executive of Transport Focus, the independent consumer watchdog for Britain's passengers. Having qualified as a solicitor, Mr Smith worked for five years as principal consumer lawyer for the Consumers' Association, publishers of *Which?*. This was followed by a year as the legal consultant for Consumers International, a worldwide federation of consumer groups. Prior to joining Transport Focus, Mr Smith was deputy and acting director of ICSTIS, the regulator of premium rate telephone services.



**Humza Yousaf MSP**  
Minister for Transport and the  
Islands, Scottish Government

Humza Yousaf was educated at Hutchesons' Grammar School and the University of Glasgow, graduating with a degree in politics. He is an alumnus of the US State Department's International Visitor Learning Programme.

He worked in the Scottish Parliament as an aide to the late Bashir Ahmad MSP before he was elected as an MSP for the Glasgow region in May 2011. He was a liaison officer to former first minister Alex Salmond and was appointed Minister for External Affairs and International Development in September 2012. He became Minister for Transport and the Islands in May 2016.





## Next stop: Brexit

What will leaving the EU mean for the bus industry? **Humza Yousaf** outlines Scottish bus policy for the post-Brexit world; opposite, **Neill Birch** says the industry must make its voice heard

**T**he people of Scotland – across every area of the country – voted to remain in the EU. Both Scottish and UK governments have a duty to respond to the democratic wishes of the Scottish people and Scottish Parliament.

The Scottish Government is exploring all options to protect Scotland from a hard Brexit that economists say will cost 80,000 jobs. Our five key interests are democracy, economic prosperity, social protection, solidarity, and influence.

The Scottish Government seeks to play a full part in the negotiations to ensure that we retain access to the single market. On 20 December we published *Scotland's Place in Europe*, a set of proposals designed to mitigate the risks for Scotland of being taken out of the EU.

When you examine the likely impact of Brexit on bus, and transport more widely, it is difficult to ignore the irony that the UK has always been at the forefront of creating a

**Humza Yousaf**  
is minister for  
transport and  
the islands in  
the Scottish  
Government



single European market for transport with free movement of people and goods. While some would assert that the EU has led to burdensome bureaucracy and cost to industry, I would counter this view and cite the jobs created, cultural exchange and cost reduction through things like universal vehicle standards.

People will continue to travel across borders and companies will buy buses and parts from each other across Europe. That is not the same as saying that Brexit doesn't matter or is harmless. There are a number of unanswered questions, even putting aside the economic shock. The UK must be clear about what direction it wants to take on each area currently under European competence.

These questions need to be debated now, before Article 50 is triggered.

Coach operators will have concerns about the impacts on cross-border services. If new border requirements are put in

place, that is likely to mean extra cost, particularly to those who run coaches across more than one border. We look for reassurance from the UK Government that has so far been missing.

Operators are facing challenges attracting and retaining staff. Will Brexit help or hinder that? The Scottish Government will continue to provide as much reassurance and certainty as possible to businesses and EU nationals, who continue to be welcome here.

The Scottish Government expects to play a full role in Brexit negotiations and we are listening. We need bus and coach passengers, academics, operators and manufacturers to ask questions of the industry and government. You are experts and can inform and hold us to account.

Transport Scotland engages with all the transport sectors, building a picture of issues to be addressed in relation to Brexit. This work will inform developments going forward including the review of the National Transport Strategy and the Strategic Transport Projects Review.





## Leaving the EU could have profound consequences for buses, positive and negative. The industry must make its voice heard, says Neill Birch

**W**hat does Brexit mean for buses? Even asking the question makes my heart sink a little; we've become so used to the empty sound of "Brexit means Brexit". And let's face it, the role of buses in the referendum was not an entirely honourable one: the promises painted on the Brexit Bus have come to epitomise the sort of post-truth politics that are adding a peculiar toxicity to the European debate.

But, like every other industry, it is a question we have to ask, because, one way or the other, what happens next is going to have a profound effect on how we manage bus services here in the UK. Whether the affect is a positive one or not may, in part at least, be down to us as an industry.

Negotiations with Europe are in their earliest stages and there is plenty still to play for, but powerful voices are already calling for conditions in fundamental policy areas that would be extremely painful for bus operators, perhaps even disastrous for some. We need to make sure that those voices are balanced by a clear message from our industry to the Government right now, when it can still have an effect.

The obvious starting point is also the most difficult: free movement of people. This was the most contentious issue during the referendum debate. Despite impassioned argument for maintaining a liberal immigration policy (even from some prominent Leavers), as Theresa May's Brexit speech made clear, restrictions on freedom of movement from EU countries are surely coming. And this is bound to be a concern to bus operators.

Let's be frank, in large parts of the UK there are simply not enough British nationals willing and able to drive buses at current salary levels to keep the service running. In many places the bus service depends on the influx of semi-skilled labour from (mainly) Eastern European countries, exactly the sort of immigration that has been the focus of so much political anger over recent years.

I expect some will point the finger and say this is a perfect example for the argument that EU freedom of movement is being used by unscrupulous employers to keep earnings for native Britons down, that an end to immigration – or controls on immigration, at least – will solve the problem through the invisible hand of the market, raising wages and providing jobs for "local" people.

But the fact is that labour accounts for two-thirds of operating costs in

bus services that are often already overstretched. There is little room for manoeuvre. Any significant increase in wages driven by immigration restrictions is likely to mean fewer or worse buses, or both.

This is something that the Government must understand. Public transport is an everyday part of most citizens' daily lives; a significant fall in quality has a profound effect on quality of life. An ill-considered policy on immigration won't just hurt the pockets of bus operators, but will immediately be felt by voters and quickly converted into political anger that will be vented at the ballot box.

That's the half-empty view. But there's an upside, too. The UK will be free to unburden itself of a great deal of EU regulation governing bus operations. While it is unlikely that the government would want to undercut the EU in minimum safety conditions – the last thing the industry wants or needs is a race to the bottom – onerous EU regulation of tendering processes and the administration of public funds to service providers, for example, is ripe for serious review.

The cumbersome and expensive tendering processes currently demanded put smaller operators which can't afford a dedicated department to handle the task at a disadvantage. They make it more difficult for the Government to react to good practice and innovation by directing investment more reactively, with a lighter touch, to reward success and encourage imagination and experimentation. A lengthy over-bureaucratised tendering process is good for lawyers, but costs consumers more than they know.

So escape from EU regulation – some at any rate – really does offer opportunities for the sector, and is not just the myth that some Remainers paint it as. That's the half-full way of looking at it. If it is done thoughtfully, we should see some real gains that won't be too slow in arriving.

But there is a long way to go, and the immigration question casts a large and dark shadow. Looking towards the possible triggering of Article 50 sometime in the early spring, Brexit for buses still doesn't mean much more than, well, "Brexit for Buses".

The industry must make sure that the people at the heart of the negotiations understand very clearly what it is that we need it to be if bus services are going to survive and flourish beyond the pulling of that trigger.

**Neill Birch is West Scotland business director at Systra**



What about our role regarding the bus industry? I see the role of central government as providing stability and the framework for the industry to thrive through partnership.

I disagree with those who say that wholesale re-regulation should be our response to Brexit uncertainty or the wider challenges that we face from congestion and declining patronage. Bus succeeds where there is strong partnership, not because of one particular regulatory regime. The Transport Bill that we are bringing forward in this parliament will set a new framework for partnership working in Scotland, as well as opening up data and allowing local authorities to franchise where appropriate.

So how will the bus industry cope in a world post-Brexit? I think it will be like anything else: the industry will react by staying engaged and just getting on with it.

However, there is no doubt that without a clear plan from the UK Government the uncertainty will not be helping.



# It's time for action on congestion

Central government and local authorities share responsibility with operators for providing better bus services. The powers to address congestion already exist – it is time politicians used them, argues **Martin Griffiths**

**A** year ago I stood at the 2016 UK Bus Summit and spoke about what I believe is the number one challenge facing the bus industry – road congestion.

At the time, there was universal acceptance among stakeholders that congestion was damaging the reliability and attractiveness of bus services as well as adding costs for passengers.

Since then, detailed research by Prof David Begg for Greener Journeys has confirmed everything I said. It has highlighted that across the country the congestion crisis is turning people away from bus travel and putting jobs in the industry and wider economy at risk.

Other research has shown recently that Britain's roads are the most congested in Europe and that time wasted in the UK's worst traffic jams will cost motorists £62bn by 2025.

Who is going to tackle this? And, more importantly, when are we going to see practical action to support buses and bus passengers?

What is very clear is that delivering better bus services is a shared responsibility between operators, central government and local authorities.

Bus operators have continued to invest huge sums on improvements for customers, despite the most chal-

lenging economic climate in years.

Stagecoach alone has invested £1bn in greener and more accessible buses for regional bus networks in England, Scotland and Wales in the past 10 years, with almost £100m spent in the past 12 months.

We are making it easier to use the bus by harnessing the power of new technology, offering new digital tools for customers including a new website and smartphone app, mobile ticketing, a sophisticated online journey planner, and real time information straight to customers' phones.

We are committed to the introduction of contactless payments on all Stagecoach buses in the UK by 2018, which will provide another payment option for passengers as well as speeding up boarding times.

And we continue to offer the best value bus travel in Britain, allowing people to reach work, education, health, shopping and leisure, often for less than the price of a cup of coffee.

More transport authorities are seeing the benefits of partnership to make buses a better choice – most recently the Merseyside Bus Alliance, for example, where we are working with Merseytravel

and Arriva to provide new services, coordinated networks, improved smart ticketing and further investment in new buses to boost services for existing customers and attract even more people on to bus travel.

However, the harsh reality is that in many parts of the country we have seen little significant investment by many authorities in measures to tackle road congestion.

Meanwhile, buses have got slower, regional economies and struggling high streets are even further undermined and air quality gets worse.

Statistics show that passengers made 119 million fewer bus journeys in 2015-16 than the year before, a fall of 2.6%, largely due to further public sector cuts to bus services, particularly in rural areas.

The impact of the above issues is clear. We have reached a tipping point – it is time for action. Bus passengers specifically, and communities more generally, deserve better from our politicians.

The irony is that while the political focus has been on new measures in the Bus Services Bill, the reality is that all the tools are available now for those responsible for highways and the local environment to take practical action.

From targeted bus priority to pro-public-transport parking policies, better land use planning to measures to protect air quality, politicians and local authorities have the ability to make real change now.

The economic case is proven. Buses make a £64bn a year contribution to our economy and there is a £3 return for every £1 invested in bus priority.

The social case is also clear: a 10% improvement in bus service connectivity would result in a 3.6% reduction in social deprivation; nearly 10,000 more people in work; increased income for nearly 23,000 people; 2,600 fewer years of life lost; more than 7,300 more people with adult skills; and a 0.7% increase in post-16 education.

The environmental case is just as strong. One full double-decker bus can take 75 cars off the road, and if everyone switched just one car journey a month to a bus or coach, it would mean a billion fewer car journeys and a saving of 2 million tonnes of CO<sub>2</sub> every year.

We know the problem and we already have the solutions. Now the country demands the political action to put them into action.

No change is not an option. When we meet for next year's Bus Summit, we cannot afford to be having the same conversation.

Collectively, everyone with a role in public transport must start delivering.

**Martin Griffiths is Stagecoach Group chief executive**





# Services that value the customer



London's bus network is crucial to how our capital city functions. It carries almost 2.4 billion passengers a year – more than all the other bus journeys in England combined. The city's 9,300 buses provide a vital daily service, linking homes to jobs, schools, hospitals and leisure, as well as providing a frequent, step-free lifeline for many.

TfL is very proud of the role buses play in keeping London moving. But as the city changes around us, and as the way in which Londoners live their lives change, we need to ensure the bus network changes too. It needs to adapt to and address the concerns and priorities of the people it serves.

It is now clear that London is facing a serious air quality issue and people increasingly want greener buses to play a key role in tackling the problem. TfL is meeting this challenge head on by modernising our buses so that the fleet can become among the least polluting in the world.

All buses will meet or exceed the toughest air quality standards, Euro VI, by 2020. From 2019, all double-deck buses operating in central London will be hybrid and all 300 single-deck buses operating in the centre will emit nothing from their exhausts. This will create one of the world's largest zero-emission capable fleets. As we prepare for the introduction of the Ultra Low Emission Zone, TfL is retrofitting 5,000 buses

Transport for London is addressing demands from users for buses that are greener, more reliable, affordable and convenient, says **Leon Daniels**

**Leon Daniels is TfL managing director of surface transport**



with Euro VI emission technology and investing in hydrogen fuel cell buses.

But we need to do more. Starting this year, we will introduce 12 Low Emission Bus Zones to target areas outside central London with the poorest air quality, including Putney, Edmonton and Shepherd's Bush. We will put only the greenest buses on these routes, with the aim of reducing NOx emissions by 84%.

But not only do our customers want less polluting bus services, they want more reliable ones too. Congestion in central London has led to journey times becoming less reliable and some people giving up on buses. This is a product of many factors, including London's surging growth and redevelopment, and the large increases in minicabs and home deliveries. But there are interventions we can, and must, make to right the trend. TfL is currently consulting on re-routing 14 bus routes to take them off Oxford Street where they currently get snarled up in traffic. We're also working on a wide range of congestion easing and bus priority schemes including in Greenwich, Lambeth and on the North Circular Road, and further honing systems for giving buses priorities at key junctions.

Our customers also want a bus service that treats them as the valued customers they are. That's why we've made 95% of bus stops accessible and introduced the

iBus system, which provides audio and visual next-stop announcements for those with hearing or sight impairments. We're sending every driver on enhanced customer service training to help them give even better advice and assistance to customers, and help ensure their wheelchair space is available when wheelchair users need it.

We're focusing heavily on driving down the number of bus-related injuries, with trials of intelligent speed adaptation and other measures. And when things do, sadly, go wrong, we're now offering those affected by serious incidents much greater practical, financial and other support than ever before through our Sarah Hope Line.

Lastly, our customers want an affordable and convenient bus network. The mayor's new Hopper fare has been used by 20 million people in the first three months alone, making bus travel cheaper by enabling customers to change on to another bus or tram free of charge within an hour. The increasing real-time information that we provide, including through hundreds of third party apps, is putting up-to-the-second service information into the hands of anyone with a smartphone.

By changing our bus service in these ways TfL will create cleaner, more attractive services that support the growth of the city in a sustainable way. As we do it, our aim is to make life better for our customers, our drivers and London as a whole.

# Let's champion the bus



We need to do more to make sure that modern bus travel and its value to society is understood, says **Dr Manfred Rudhart**

**L**ocal bus services are the lifeblood of local communities. They provide the arteries that connect people to jobs, businesses to customers and friends to family. Greener Journeys has shown that better local bus connectivity can lead to better social, economic, health and environmental outcomes in deprived neighbourhoods. The social contribution that buses make for individuals, families and wider society is immense.

Those of us who work in the sector will be familiar with the statistics. More people travel to work by bus than by any other form of public transport. Bus users make 1.4 billion shopping trips and spend an estimated £27bn on retail goods a year. The health of the bus sector is intrinsically linked to the health of the UK's high streets, which are very often the beating heart of communities. Britain's high streets are facing a number of challenges, and given that buses account

**Dr Manfred Rudhart is chief executive of Arriva**



for 29% of spending in cities we need to recognise that good bus connections can help town centres to thrive.

We would also do well to recognise the importance of effective bus services in supporting "just about managing" families. One in four households lacks access to a car: buses offer an affordable way to connect people to employment and leisure activities. With 12% of students depending on buses to travel to school, college or university, buses are crucial for accessing education opportunities as well.

Concessionary bus travel gives older people the freedom to travel and therefore provides more opportunities to participate in society, as well as improving health and wellbeing. Greener Journeys has estimated that each £1 spent on concessionary bus travel generates nearly £3 in benefits to bus pass users, other bus passengers and road users.

But despite the social value of buses, the sector is experiencing challenges.

With policymakers facing difficult spending decisions, bus services have faced cuts. Research by the Local Government Association has shown that subsidised bus services in England were reduced by more than

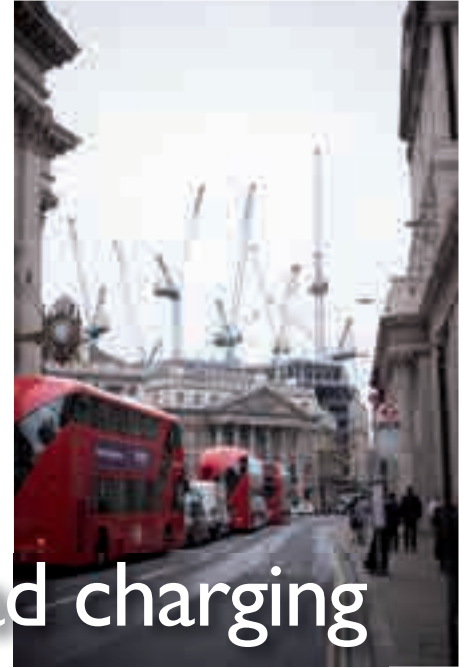
12% in 2016, adding to earlier pressures from changes to the Bus Service Operators Grant. The Campaign for Better Transport found that since 2010, over £78m has been cut from local authority supported funding in England and Wales, a 25% reduction overall. This has resulted in over 2,400 bus services being cut, altered or withdrawn completely, affecting communities and reducing patronage.

That buses make a crucial contribution to the economy and society is well documented, but this contribution is still not properly valued or widely understood. Clearly the product needs to be right and operators need to understand better the views and expectations of non-users, as well as passengers. That's why Arriva has invested significantly in understanding their views and responding with innovations, including Wi-Fi and leather seats on new buses, and investing in new technology such as our industry-leading app.

Yet it should be acknowledged that some routes are not commercially viable for operators, and there's an important role for public subsidy. Working in partnership, declining patronage can be turned around, so that bus services remain the bedrock of local communities and act as a powerful social and economic enabler.

Let's be proud of the bus and speak up about its value and contribution.





## Changing the debate on road charging

Congestion is the least effective way of rationing roadspace. The argument for road pricing can be won if it supports public policy objectives and uses the latest technology, says **Martin Dean**

**R**oad congestion is a matter of supply and demand. Demand has been driven by economic and social realities, broadly supported by public policy. Urban populations have risen sharply, and the online revolution has increased demand for individual journeys and home deliveries. But the supply side is constrained. The rapid creation of new road space seen in the 20th century is unlikely to recur. So the supply challenge is more about allocating space than creating it.

Integration between transport and other fields of policy can create greater efficiency than transport policy in isolation.

There is a need for greater integration between highway authorities, which provide the road infrastructure, and transport authorities, which regulate services using that infrastructure. Even where they are part of the same overarching organisation they are not always well aligned.

The common objective should be the maximum safe sustainable throughput of journey volumes. A return to the roads hierarchy policy of the 1990s, in which priorities were allocated to higher density and more sustainable modes in preference to cars and LGVs, would be a powerful guiding principle against congestion.

I believe we need greater integration between policy for transport and that for other public sector bodies.

For example, both education and healthcare have rationalised large numbers of local sites into smaller numbers of bigger schools and hospitals. This has directly increased road use, with an im-

pact on congestion, road safety, and local air quality issues.

Greater integration is needed between passenger transport policy and policy on urban logistics. Van traffic has risen 73% in the last 20 years. The increase in vehicles being used to make individual deliveries has had a disproportionate impact on the daytime movement of other road users. Charging schemes could usefully provide incentives to change to off-peak times of day, when most homes are occupied.

Meanwhile, existing powers could be used to greater effect. The workplace parking levy under existing local authority powers has shown its benefits in Nottingham, and initial political opposition has faded. Small-scale improvements to junction design, signal phasing and other detailed aspects of road layout are achievable at modest cost as routine maintenance and renewal take place.

If we do nothing, congestion becomes its own form of rationing, by physically preventing further journeys. This is the worst form of road space allocation, because it directly works against the social and economic benefits of having roads in the first place. But rationing through policy measures inevitably creates resentment. Political considerations have therefore become a barrier to congestion reduction.

Fixing the politics must start now. The rationing methods chosen must support overarching public policy needs and be capable of coherent rational explanation to underpin the political case for reform.

Outright prohibition, such as pedestrianisation and part-time road closures, are undeniably effective, but

**Nottingham has demonstrated the benefits of a workplace parking levy (left); congestion undermines the benefits of roads**

**Martin Dean is Go-Ahead managing director for bus development**



the political arguments can be hard to win. Rationing through charging allows society to work out for itself which uses of road space create the greatest value. This opens up the possibility of new political arguments.

New technology could enable pricing to be a much less blunt instrument than when London congestion charging was introduced. Possibilities now include differential pricing by time of day; charging for time spent within that zone on a per-hour or per-minute basis; and charging on the basis of vehicle footprint, so that a large vehicle would pay more than a small one, but ensuring there's an incentive for vehicles carrying more people.

Ideally charging revenue would be recycled back into transport so that road charging would not be seen as a stealth tax, more a way of funding improvements that contribute to the good of communities.

As congestion worsens, it becomes ever harder for bus operators working alone to mitigate its effects. At Go-

Ahead we have some great examples of our bus companies working in partnership with local authorities, demonstrating it is possible to reduce the impact of congestion through effective priority measures, in accordance with the road hierarchy. These solutions have a positive impact in an era where only the most efficient uses of road space are sustainable for the long term.





## ***Britain's on board with Arriva buses.***

With over 316 million passenger journeys a year – that's around 47,000 every day – it takes a lot of work from the whole Arriva team to be scoring 89% on overall passenger satisfaction. And with over a million downloads of the Arriva bus app we're bringing new people onto our buses all the time.

To find out more about Arriva buses  
please visit **[arrivabus.co.uk](http://arrivabus.co.uk)**

 **ARRIVA**  
a  company



**T**here's a quiet revolution under way in how people interact with transport and in the way we all view mobility.

Technology in every aspect is creating new opportunities, not just in the vehicles we're using but in the choices we're making and the processes we're using to meet our mobility needs.

I believe that buses have a critical part to play in the transport system of tomorrow but, like the components of that system, they're going to have to adapt significantly to rapidly changing customer expectations.

At the *Transport Times* UK Bus Summit in February, I'll be introducing the third in the Low Carbon Vehicle Partnership's "green bus trilogy", a series of reports that have been commissioned by Greener Journeys.

The first in this series – *The Journey of the Green Bus* – explained how a sustained focus over the last 10-20 years has resulted in the introduction of greener, cleaner buses in the UK which are helping achieve climate and air quality objectives. The second – *A Green Bus for Every Journey* – showed how the latest buses, employing a range of fuels from biodiesel and biomethane through a wide spectrum of hybrid options to full battery electric and hydrogen fuel cells, have been embraced by operators across the UK and are gradually transforming the sector.

Having worked to develop cleaner and greener buses for over 20 years, for me personally it's incredibly satisfying to see the success of this industry today and, from LowCVP's perspective, to have been able to tell the story of that journey in the first two reports of the trilogy.

The partnership has been working closely with policymakers, industry representatives and other stakeholders for more than a decade to encourage and facilitate the adoption of greener buses in the UK, and we can now gauge passengers' response to them. The final report in the series, *Any Journey is Greener by Bus*, will demonstrate some of the real benefits for passengers, showing how the bus provides what is perhaps society's most accessible and efficient form of mobility.

We hear from real passengers about their journeys on today's bus network and the variety of benefits these bring to them individually, but also to the local area and society, reducing congestion, pollution, cost, noise and climate impact. The report focuses on how customers view their interactions with the bus and, in particular, their experiences and perceptions of the growing range of low emission buses in operation in the UK.

In the UK, 91% of people live within 13 minutes' walk of a bus stop with at least an hourly service, something



## A new chapter begins

The bus provides society's most accessible form of mobility, and it has enthusiastically embraced green technology. But it must also address challenges such as the communications revolution if it is to remain successful, says **Andy Eastlake**

which cannot be matched by any other form of public transport. Buses support business, assist in the efficiency of the labour market, provide access to education, training and better jobs, and are a facilitator of maintaining a mobile workforce with access to a wide range of community facilities.

Local bus services are particularly important for those without access to other forms of transport, with those who do not have access to a car using bus for around 25% of all their travel.

A recent study published on the value of local bus services to society highlights that accessibility to bus journeys is particularly important to those unemployed, those on low incomes, children and the elderly. The analysis shows that neighbourhoods with better local bus connections are likely to have lower levels of economic, social and environmental deprivation.

Increasingly, too, buses are seen as one of the most important ways to reduce the congestion and pollution blighting our cities. They're working in greater harmony, rather than competing,

with private cars through park and ride schemes and integrated solutions with other transport modes.

Local authorities in England (outside London) with some of the highest bus use include Nottingham, Reading, York, Bristol, Greater Manchester and Oxford. In addition to London, these cities are case studies featured in the new report.

All of them are among the front-runners in the acquisition of cleaner and lower-emission buses and all have above average levels of bus use. In many, the promotion of greener bus use is a key tool for improving air quality.

Bus use, though, will not be driven by the on-board vehicle technologies alone. Though I believe it's critical to the continued success of the bus industry to be continually adopting the latest, cleanest engines, how operators react to and embrace the revolution in communications and associated technologies enabling the emergence of mobility as a service (MaaS) will also be vital.

As the LowCVP's green bus trilogy demonstrates, the bus industry has been making good progress so far in adopting green technology. But there are many challenges ahead if the sector is to maintain and, perhaps, increase its share in the mobility markets of the future.

**Andy Eastlake is managing director of the Low Carbon Vehicle Partnership**



# Sustainable momentum

More environmentally friendly technology can help to improve city air quality as well as reducing running costs and attracting new passengers, says **Giles Fearnley**



**A**s 2016 rapidly becomes a distant memory and we settle into 2017, the bus industry continues to find conditions tough – with congestion in particular widely and rightly heralded as a huge problem for operators and their customers across the UK.

In response, bus operators must do all that we can to stimulate passenger growth, control our costs, and work with our partners to improve bus priorities and speed up the bus – which is vitally important to the future success of the industry and the communities which we serve.

First Bus's investment in greener, cleaner vehicles is helping us fight on all three fronts. Central to the First Bus procurement strategy is Euro VI technology. We did the testing, saw immediately the huge benefits particularly for air quality, and acted quickly. In 2016 we announced a £73m order for 355 Euro VI buses, the biggest investment the industry had seen and a huge endorsement for the technology. This followed investment in 2015 and First now operates more than 630 Euro VI buses, over 10% of our fleet.

We are also running trials of a range of bus technologies. In Aberdeen, with our partners, we're successfully testing four hydrogen fuel cell buses. In York a fleet of 12 electric buses operates two park and ride services and recently won the Contribution to Sustainable Transport prize at the North of

**To learn more about First Bus's Millbrook trial, see this short video: <https://vimeo.com/180008925>**

**Giles Fearnley is managing director of First Bus**



England Transport Awards. Meanwhile in Bristol, by many considered the bedrock of environmental innovation, we operate two "virtual electric" buses and have recently completed a trial of a biomethane vehicle, running on gas derived from human and food waste.

The results of the biomethane trial were really positive, to the extent that with partners in the West of England we submitted a joint bid to the Office for Low Emission Vehicles for 110 buses. Although unsuccessful in our bid for funding, it has not dampened our appetite, nor that of our partners, for biomethane vehicles. We're confident they will form part of our UK fleet in the short to medium term... watch this space!

We must not lose sight of the opportunities right in front of us. I'm fiercely proud to be leading the industry, developing with our partners innovative technologies that are improving the fuel efficiency and carbon emissions of buses that are affordable, sustainable and available on the market right now...

Back in 2012 First Bus launched what has become an annual vehicle testing programme at Millbrook Proving Ground. In so doing we laid down the gauntlet to manufacturers to improve their products, triggering a competitive development race. Since 2012 we've seen a reduction in the weight of buses, the recapture of brake en-

ergy, and the introduction of stop/start technology. Indeed, thanks to the Millbrook trials and a strong partnership with Wrightbus, First tested, developed and helped bring to market the hugely successful Streetlite Micro Hybrid. We now operate 618 of these across the UK.

The Millbrook trials have been exceptionally successful (which helped us win "Low Carbon Operator of the Year 2016" at the Low Carbon Champions Awards). We're seeing fuel economy improvements of up to 30%, and we're reducing carbon emissions by 30% too. These are incredible numbers that are making a difference to costs and helping keep fares down, not just in First Bus but across the industry. We think another 10% can be achieved by manufacturers in 2017.

Air quality is now top of the agenda for many of our towns and cities and the impact that clean and green buses can make is widely understood. Through effective partnerships we can flesh out how plans can be put into action to meet this agenda.

We have seen this play out most recently in Leeds where investment in the bus fleet to meet stringent clean air requirements that will apply in that city from 2020 is essential to the objective of doubling bus patronage over 10 years. Clean/green vehicles can themselves do much to fundamentally change the perception of the bus, which itself is a stimulus to attract new users and to enable the bus to unleash its full potential in contributing to economic prosperity in our towns and cities.





**T**he Northern Powerhouse Independent Economic Review, commissioned by Transport for the North in 2016, highlighted that for the last 30 years, the North's gross value added per capita has been consistently about 25% below the average for the rest of England, and 10-15% below the England average excluding London.

This performance gap is structural and persistent. In 2014, it equated to a £4,800 per person difference in income between the North and the UK average, and a £22,500 per person difference between the North and London.

While levels of unemployment have an impact on the North's GVA, the review found that productivity accounts for the largest proportion of the performance gap with the rest of England.

The main factors driving this productivity gap were identified as: insufficient high-skilled workers and too many low-skilled workers; insufficient exploitation of innovation and technology; lower levels of investment; lower levels of enterprise (measured by business start-ups per capita); lack of agglomeration; and sub-optimal transport links and underinvestment in transport.



**John Henkel is executive sponsor for integrated and smart travel at Transport for the North**

## An integrated approach

Smart travel is at the heart of Transport for the North's vision for tackling the economic productivity gap with the rest of England, **John Henkel** explains

The persistent economic gap between the North and the national average necessitates a radical change in the economy of the North. Transport for the North, which will become the first sub-national transport body later this year, is developing a pan-Northern strategic transport plan based on transformational improvements to road and rail, freight movement, international connectivity and integrated and smart travel.

### Integrated and smart travel programme

In early 2016, Transport for the North, jointly with the Department for Transport and Transport Focus, commissioned primary research to gather insights on and input from customers across the North.

The key findings included customer views that:

- Transport services in the North of England are improving but are

behind the best in class

- Local transport is often seen as inconsistent, fragmented and difficult to navigate
- Smart ticketing is seen as a key, and overdue, improvement to local transport
- Value for money is an issue, and standardised fare structures are desired
- Oyster and contactless bank card payments in London are viewed as the "Holy Grail" of travel products by passengers outside London.

The integrated and smart travel programme complements the wider Transport for the North agenda, enhancing the usability and attractiveness of public transport services across the North by making the pricing simpler to understand and by making it easier to pay.

The programme vision therefore is threefold. First, make it easier to work

**turn to page I8**



from page 17

out the best options: provide integrated information both for planning journeys and for updating customers on any changes while travelling.

Second, make the pricing simple to understand. Provide a clearer-to-understand fare structure, especially within urban areas, initially offering an integrated pay as you go service across all urban areas. Then develop this further so that customers can be offered a “fair price promise”, which gives them the reassurance that they are getting a good fare for multiple trips.

Third, make it easier to pay: by allowing allow most customers to simply turn up and travel, using one of a range of smart devices as their ticket. All their travel across the region can be managed from a single account.

The programme is focused on a proposition that is centred on six customer experience principles (see box, above).

**Role of Transport for the North**  
Integrated and smart travel will be a key component of the pan-Northern strategic transport plan being developed by Transport for the North as it addresses barriers to public transport use and complements the improved connectivity (in capacity and journey times) being developed through the road and rail programmes.

The approach to integrated and smart travel recognises that transforming customers’ experiences will require a shared vision and collaboration between Transport for the North, transport operators, local transport authorities and Local Enterprise Partnerships.

fares won’t exceed the cost of a daily/weekly travelcard or similar product.

The programme seeks to exploit investment in ITSO smartcard ticketing systems while developing the systems and infrastructure for customers to use a contactless bank card or ITSO smartcard as a token (or mobile phone emulating these), again with a fair price promise. The programme also recognises the value of improved customer information and the need to, over time, rationalise and simplify fare structures.

The programme implementation is illustrated below.

The main implementation role for Transport for the North will be in working with partners to acquire those capabilities that would not otherwise exist because no other organisation has that responsibility. For example, Transport for North is collaborating with transport operators and local transport authorities to develop, specify and subsequently procure and

Confidence	Simplicity	Flexibility	Convenience	Informed	Consistency
A system that customers trust Customers know they'll pay the right fare and won't be overcharged Customers get support when things go wrong	Customers can just turn up and go without needing to do much/anything before travelling Easy-to-understand product and fare structures	Travel without the customer needing to know daily or weekly travel plans in advance Use the media that suits the customer for all journeys	Use the device the customer chooses as their travel identifier (e.g. contactless payment card, smart phone, ENCTS or transport smart card)	Customer can easily access timetables, fares, planned disruption and real time information to plan and complete journeys	Enjoy the same travel experience on all public transport across the North Use the same travel identifier across the North

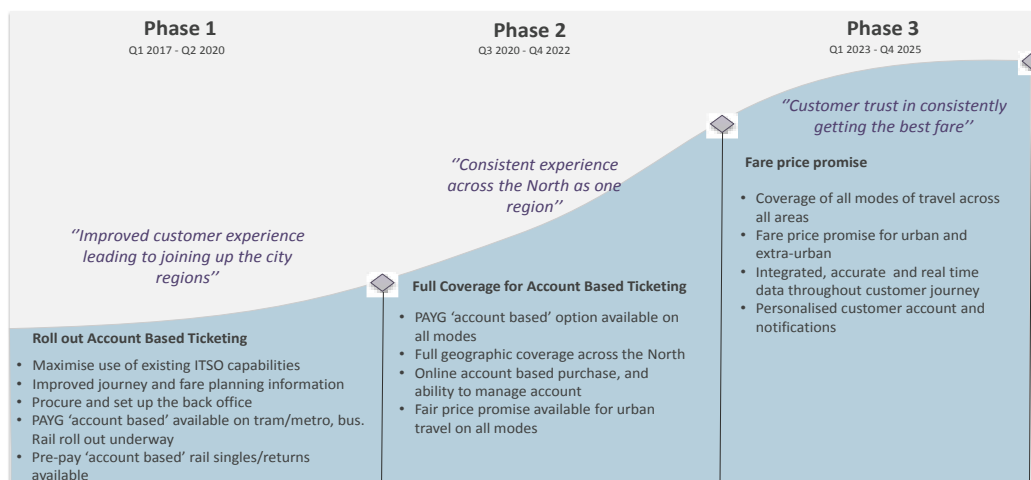
**From top: London's smart and contactless system is seen as the “Holy Grail” to aspire to; TfN's six principles; TfN's three-phase implementation programme for smart ticketing**

Transport for the North has the remit to develop a pan-Northern approach and, working closely with partners, has set out a programme that will provide customer benefits through a phased approach over the next eight years. Phasing reduces risk and provides early customer benefits.

The end result will be a tap-in smart and integrated ticketing system which can be used on all public transport modes across the North. This will be accompanied by a fair-price promise so that passengers know their combined

manage a back office for contactless card public transport payments.

There is a need to provide early benefits for customers, as well as developing systems and services for travel based on contactless payments. Transport for the North is therefore working with the Department for Transport, Rail North and its local partners to allow customers to use ITSO smartcards for rail travel (for period tickets and carnets) from 2017/18 – in line with the Secretary of State's ambition for smart ticketing on the rail network.







## The missing spoke



The Manchester-Leigh-Atherton busway set new standards in its ambitions for a bus priority scheme. **David Fowler** reports

# Project profile

**P**erhaps the biggest bus success story of the last year has been the Manchester-Leigh-Atherton busway.

The long-planned project, a double award winner at December's North of England Transport Awards, opened in April last year, since when passenger numbers have consistently surpassed forecasts.

The route provides consistently quicker and more reliable journeys to central Manchester from Leigh and the surrounding area, opening up access to jobs and education. There are already signs that the project is stimulating regeneration, as well as encouraging leisure trips both to central Manchester and Leigh that would previously have been made by car.

It includes a 4.5 mile (7.5km) guided busway – with a continuous path for walking, cycling and horse-riding alongside – as well as new bus lanes on the A580 and other extensive priority measures.

The project is one of the two largest schemes in Manchester's £122m bus priority programme, the other being the £54.5m cross-city bus package.

Transport for Greater Manchester bus priority programme manager Anthony Murden says that there was clearly a deficiency in public transport in the Leigh and Atherton area of west Manchester: "Looking at radial routes out of Manchester it's very clear from a public transport perspective that there was a missing spoke to the west."

**“We’ve produced something with tram quality in a bus solution”**

Design work on the project began in the 1990s; a Transport & Works Act public inquiry was held in 2003 and the inspector ruled in favour of the project two years later.

It was incorporated into Manchester's unsuccessful congestion-charge backed Transport Innovation Fund bid in 2008. Following the rejection of the TIF bid in a referendum, the scheme was prioritised as part of the £1.5bn Greater Manchester Transport Fund, which pooled central, regional and local funding sources including borrowing against future income, and was established in 2009.

The project generated considerable controversy, not least from a vociferous rail lobby. The guided busway section of the route uses a disused railway alignment and there was a strong body of opinion calling for a rail link to be reinstated instead. Leigh, with a population of 53,000, is among England's five biggest towns without a railway station.

"A lot of work was done in the late 1990s and early 2000s looking at the alternatives – light rail, heavy rail, bus," says Mr Murden. "It arrived at the conclusion that bus was the right scheme for reasons including cost, and the fact that bus was more flexible as far as route alignment is concerned."

He adds: "If you wanted to extend the route further along the former rail alignment, you would need to demolish buildings and go over or under a motorway." For a tram, there would have been difficulties connecting to

the rest of the Metrolink network, and total journey times to the city centre would have been longer. "The advantage of a bus was that it could join the East Lancs Road," says Mr Murden. So bus emerged as the most cost-effective proposition, cheaper than the alternatives by a factor of five.

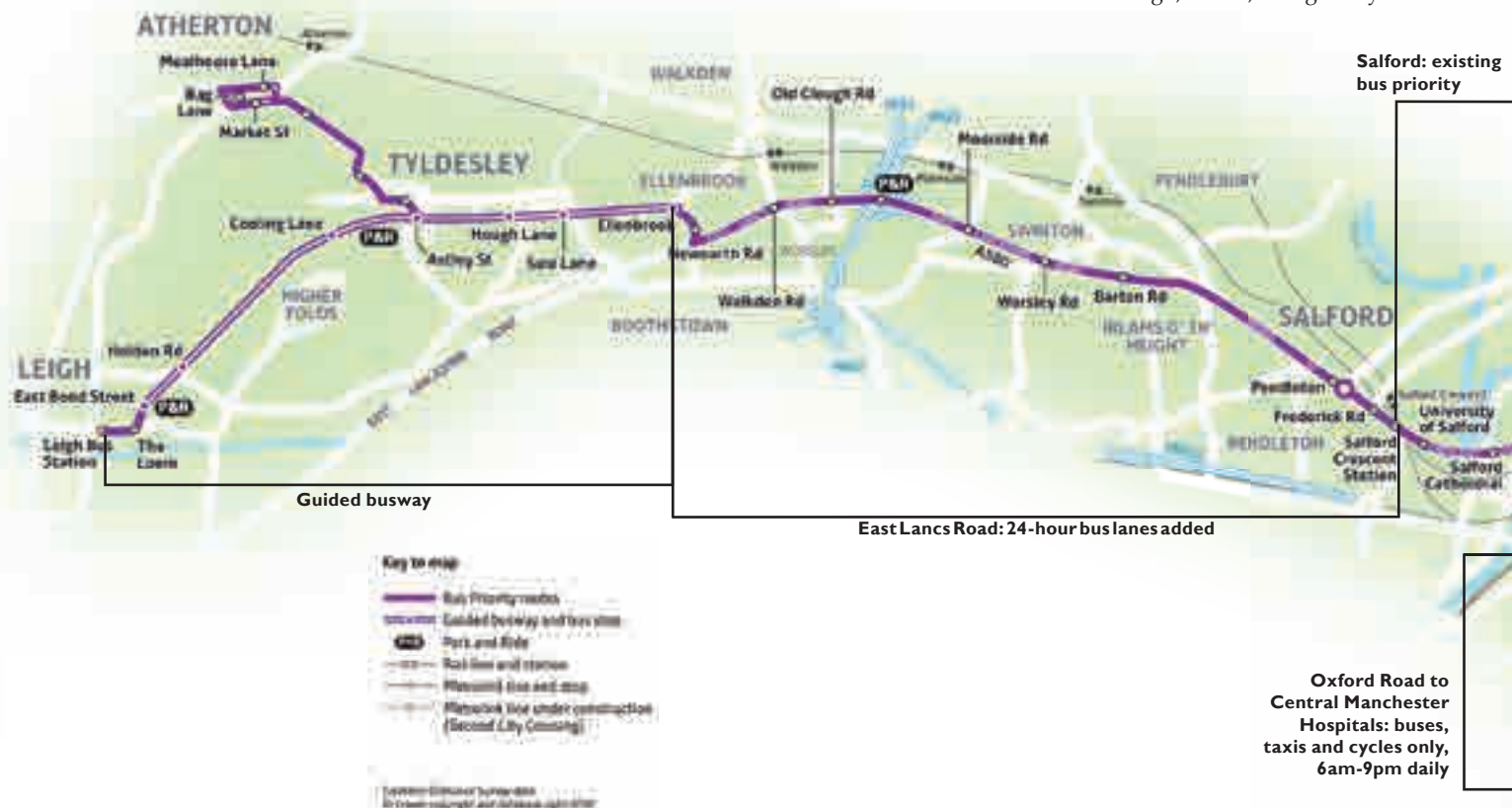
He adds: "I think what we've produced is a route which, particularly on the guided section, with real-time information, level boarding, and Metrolink-style bus shelters, is something with tram quality at the stops and in the service but in a bus solution."

Regeneration of the Leigh-Atherton-Tyldesley triangle was a crucial consideration. "A driver for the transport fund is economic growth, so better access to education and employment is important," says Mr Murden.

Leigh is a town with a mix of prosperous areas as well as some economically deprived ones. The Higher Folds and Cooling Lane area is among the most deprived areas of Greater Manchester. Previously, travelling to central Manchester from there required a bus ride or walk into Leigh and then another one-hour bus journey by a different operator. At peak times this would mean a commuting journey approaching two hours – not worthwhile for a low-paid job.

"Now from the Higher Folds estate the busway stop is 10 minutes' walk, there is a four per hour frequency and a 40-minute journey to the centre of Manchester," says Mr Murden.

The journey between Tyldesley and Leigh, which, though only





three miles, used to take 25 minutes and stopped running in the early evening, now takes 10 minutes. "It opens up a lot of facilities in Leigh, such as the cinema, or for shopping, where previously you'd have had to drive or take a taxi," he says.

## Anatomy of the busway

From Leigh, Greater Manchester's first guided busway runs for 4.5 miles on a former railway route to Ellenbrook, with an on-highway spur partway along to Atherton. The concrete guideway was constructed using an innovative slipforming technique (see Construction).

On the A580 a series of 24-hour bus lanes have been installed in both directions. Between Newearth Road and Moorside Road (see map) an additional bus lane has been added to the two existing traffic lanes within the road's original footprint. These are continuous except where space is limited by bridges, for example, and slightly more extensive in the inward (eastbound) direction.

From Moorside Road to Lancaster Road, where there were three lanes for general traffic in each direction, one lane each way has been converted into a bus lane, with step-backs at junctions (the bus lane ends but leaves the bus near the front of the queue). The traffic signal technology has been replaced by Scoot with Mova optimisation.

The A580 from Lancaster Road has three lanes in each direction with grade-separated junctions and is "pretty free flowing", so bus priority is not needed until Salford Crescent Station is reached. From here, Salford Council had already installed 24-hour bus lanes towards the city centre some years ago.

The service includes a stop at Piccadilly Gardens where passengers can connect to services running to the south of the city.



## The cotton industry – you saw it here first!

**Thomas Highs of Leigh is said to have invented two crucial machines that kick started the Industrial Revolution.**

The Spinning Jenny was the first of many new technologies that made it possible to spin cotton on an industrial scale. It was a key driver of the industrial revolution.

Well-known inventor and businessman Richard Arkwright patented various machines in 1776. As well as a more advanced Spinning Jenny called the waterframe, he seems to have patented some innovations that were not actually his.

Local tradition claims that Thomas Highs, a reed-maker of Leigh, invented both the Spinning Jenny and the water frame. In a court case lasting four years Arkwright's patent monopoly was finally revoked in 1785. Thomas High's sworn evidence in court was instrumental in revoking Arkwright's patents. The townspeople of Leigh were jubilant at the news.



James Hargreaves of Overtonville also claims to have invented the Spinning Jenny in 1764. A common story tells that it was invented by accident when James Hargreaves' wife Jenny knocked over a spinning wheel, which continued to spin on its side as it lay on the floor. He used to visit Spinning Jenny in Leigh Town Hall.

Image courtesy of the Greater Manchester Museums Group



Manufacturers across Great Britain paid royalties to use Arkwright's patented machines. This proved to be very unpopular, but made Arkwright very rich.

Portrait of Arkwright in 1790. From Wikimedia Commons.



The trial of Richard Arkwright set to expose Arkwright for false claims. Did he invented machines like the Spinning Jenny?

Image from Wigan Archives & Local Studies, Wigan Council.

Did you know?

Greater Manchester is especially good for housing, and has a lot of space for around 100,000 people.

A package of improvements to Oxford Road is expected to be completed in spring, when the route will be extended. A mile-long section of this road is one of the busiest bus routes in Europe. It passes two universities, major businesses and the Central Manchester Hospitals Trust site where several key hospitals have been amalgamated on a large central campus. In a move Mr Murden describes as "as dramatic a change as the busway", this section will be restricted to buses, hackney carriages and cycles between 6am and 9pm. It will be reduced from two lanes of traffic to one in each direction, with additional space for pedestrians and cyclists, and pedestrian, cycle and bus circulation on three different levels.

## Construction

The innovative use of slipforming to build the Leigh-Elfenbrook bus guideway won the Construction and Engineering Project of the Year award at the recent North of England Transport Awards. Previous guideways, notably Cambridge and Luton, have been built from precast concrete sections.

"The proposal was put forward by Balfour Beatty in bidding for the construction contract," says TfGM senior project manager for the busway Adam Price. "Until then we had in mind a similar approach to that used in Luton and Cambridge."

Slipforming was considered risky because it had not been done before. "We'd tried it for trackbeds on Metrolink but we couldn't get the concrete mix right," says Mr Price. In addition there was concern that the required tolerances might not be achievable. One of the main arguments for a guided busway is that it

improves ride quality compared with a bus on a normal road, but to achieve this the kerbs of the guideway have to be built to a tolerance of  $\pm 1\text{mm}$ . Otherwise the guide wheels that run against the kerbs of the guideway to steer the bus either come under too much pressure and could fail, or lose contact, leading to juddering.

"Precast concrete sections are factory controlled," says Mr Price. "It's a lot more variable on site." Tolerances are more typically 2-6mm.

Conversely, though, a slip-formed track would be continuous, avoiding the longitudinal joints between the precast sections of a conventional guideway.

A number of requirements were written into the contract, obliging the contractor to demonstrate that the method would work.

In the method adopted, subcontractor Extrudakerb slipformed the track bed to a tolerance of 10mm. Then a diamond-headed grinder fitted to a rail running down the centre of the track was used to grind the profile to the correct tolerance. This could be done seven days after casting the concrete, though initial sections were left longer "to give the grinding machine a good run".

Another concern had been the rate of output, given that the method chosen involved much more activity on site than precasting. "In the end the target output rate was exceeded and a rate of 300m of slip-forming and grinding in a day was reached at peak," says Mr Price.

Diamond grinding requires large volumes of pressurised water – up to 10,000 litres daily – which, once

**Heritage boards on the leisure path provide information on local history**

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contaminated by concrete dust, has to be properly disposed of. The contractor developed a filtration system to allow water to be recycled, which was also useful because the site had limited water sources nearby. Used water was passed through three filtration tanks carried on a trailer behind the grinding unit, which removed the concrete fines.

Many properties had been built alongside the alignment since rail services ended in 1969, in some cases with the property's back garden within 3-4m of the guideway route. This led to some opposition from residents. However, since opening "there has been a surprising lack of complaints", says Mr Price. Because the buses are hybrid and the track surface is smooth compared with a normal road, the service is "not as intrusive" as many expected. "It was a hard concept to get over to the public," he adds.

The multi-use leisure route alongside the track came about because an informal walking and cycling route had developed along the former rail track bed. "A key thing for us was to provide a high quality amenity for local people," says Mr Price. In some places the rail formation was quite narrow, but because the guideway does not need to be as wide as a normal road, it has been possible to make the multi-user path at least 3m wide throughout; in most places it is 4.5m.

"The takeup has been phenomenal from the day we opened," Mr Bruce says. The track was left free of stiles and gates to avoid putting cyclists off. The route passes a number of former colliery and other industrial sites, and a series of heritage boards alongside explain the local history of the area. Programme manager Anthony Murden says: "The multi-user path is as much a success as the guideway. It is being used for all sorts of leisure activity." One popular activity is to walk one way along the path and catch the bus back.

**The multi-user path is as much a success as the guideway**

**Top: cycle lanes are being added on Oxford Road  
Below: slipforming was used to construct the guideway on site**

The guideway is also helping to improve the environment. Excavated material from earthworks was used on a nearby Forestry Commission site, formerly a spoil tip which had been flattened. 100,000m<sup>3</sup> of excavated material and compost was used to create a 1m topsoil layer, and 24,000 trees have been planted.

A number of underpasses were provided for great crested newt populations on the line of the guideway, as well as new ponds, and the long-term impact on the newts is being monitored by Natural England.

## Operation and services

Because the guideway is owned and managed by TfGM, it was able to go out to tender among operators to run services. TfGM decided to use the competitive dialogue process, in which the client sets out an initial specification but this can be added to and improved by ideas from the bidders during the procurement process. After a prequalification process, three bidders went through to the competitive dialogue process.

"What we started with ended up looking quite different at the end of the process," says Martin Shier, TfGM bus partnerships delivery manager. The outline specification included service frequency and called for a prestige service with real-time information and smart ticketing. Operating hours and frequency were set out, but an exact timetable was not specified, nor the type of bus.

The initial specification called for plug sockets for charging mobile devices – over the procurement process, which began in 2013, these were changed to USB

chargers. Tables on the upper deck were another innovation.

The contract was eventually awarded to First, which runs services under the brand name Vantage. Services began in April last year and 28,000 passengers were carried in the first week.

"We were more than happy with hat," says Mr Shier. By December, the figure had hit 51,000 for two consecutive weeks. "That's a good 12 months ahead of where we expected to be," Mr Shier says, "and Oxford Road is not yet finished."

Demand has been such that five additional buses have been ordered. First Manchester head of commercial Ian Humphreys says: "Our Vantage service continues to grow in popularity, with over 1,500,000 journeys since the launch. We've recently changed timetables and added extra buses to allow the V1 and V2 Vantage services to make more journeys. We will shortly introduce the V3 service using five new buses." This will add further peak time capacity with an hourly service cross-city to Manchester Royal Infirmary.

Students and people travelling to the Central Manchester Hospitals site on Oxford Road should show a different demand pattern from the rest of the route and fill up seats during less busy times of day such as mid-morning.

The service operates from 4am to midnight, with two buses in the first hour, rising to eight hourly at peak times.

It has been noted that the service has generated leisure traffic. Mr Shier says that TfGM has even received a complaint that the 1130pm departure from Manchester on a Saturday was full. "We seem to be attracting people from cars," he says.





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