



The future of mobility

*If the bus is to play a leading role in the long term future of urban mobility, we need to be **scanning the horizon now and sowing seeds of change** to ensure that a very different bus world stakes its claim to exist.*

*We shouldn't be spending time and energy implementing a retro 1980's governance model for yesterday's buses but be focused on **designing a new age of the bus looking toward 2030 and beyond.***

*This is the **fifth of fourteen weekly articles** on what different aspects of that new bus future could look like and the kind of things we need to be sowing seeds for now if we are to truly **ride the wave of future opportunity.***

*We need to **be bold if we are to shine** over the next 40 years and do more than invest in a zero emission fleet, tinker with governance and introduce the odd capped fare.*

Episode Five – Infrastructure

Can we have a whole new city, please!?

If we are to pursue the **Mass Transit First** policy set out in **Episode One** to meet the United Kingdom's commitment to Net Zero, it will be necessary for **Government to deliver suitable road and highway infrastructure** in towns and cities **to facilitate the mobility transformation.**

Roads and Highways

For the last 75 years, most of the UK's towns and cities have been progressively customised to support **mass car use as the default commuting mode.** The net result of all those traffic engineering efforts has been escalating congestion and pollution as **car use inevitably grows to inefficiently fill every bit of road space made available.**

That includes cars 'moving' in traffic, cars parked on the street and even arrogantly parked on pavements.

Park your piano on the road or the pavement **and you would find yourself in trouble**, but **a car comes with a built in right to simply leave it on the street** unless there are specific advertised restrictions.

Today it is clear that **mass car use is**, quite simply, **a road to nowhere**.

However, reversing 75 years of mindset, design, construction, and investment will not happen overnight but, if it is to happen at all, there needs to be **a moment in time when the community collectively decides to design city streets to prioritise the movement of people, not vehicles**. Done well, this can lead to up to 75 cars being replaced on the roads with one bus.

The philosophy underpinning traffic management across the UK needs to change to **prioritise active travel and mass transit rather than the private car** if we are to genuinely improve air quality, cut pollution, congestion, and the myriad of consequent negative effects on health, wellbeing, and the economy.

As with the required large-scale changes to bus networks outlined in [Episode Two](#), complementary changes to motorways, highways, roads, and streets to support the move away from the private car will need to evolve over time.

However, where any **operator is prepared to begin delivering trailblazing net zero style bus routes** now, that initiative will need to be **matched by appropriate short-term action from the relevant Highway Authority**.

Whilst developing the optimum bespoke active travel and mass transit street infrastructure will take both time and money, there is plenty of UK and international experience to show that **a lot can be achieved even over a single weekend by simply closing off certain roads to cars and handing them over exclusively to pedestrians, cyclists, buses, and trams**.

There is, therefore, **no real excuse for delay once a decision is taken to change direction**.

In that sense, **the problem is all in the mind** and initiating the conversion of road infrastructure to prioritize active travel and mass transit can be done quite quickly if the will is there.

The **biggest short-term challenge will relate to the widescale deployment of multiple door buses** to increase operating speed **requiring changes to bus stop layouts** to ensure sufficient space for boarding and alighting at up to three doors, especially where 18m articulated buses are deployed.

Longer term, it is likely that **core high frequency urban routes can be optimised to improve both speed and directness of journeys through some re-alignment of road layouts.**

Additionally, where there are **extremely busy, ultra-high frequency urban routes** operated with either articulated 18m, or bi-articulated 24m, vehicles, the **provision of a safe, physically segregated alignment could allow the use of autonomous buses to deliver even more efficiently.**

As the transition progresses, there will be options to look at the **delivery of fast busways using both flyovers and tunnels**, where appropriate, to ensure that **express interurban services do not find themselves slowed down by frequently stopping local urban services.**

Once the **Mass Transit First** priority philosophy prevails, it will open up more radical bus speed and priority measures.

There is huge potential to **make both urban and intercity bus and coach journeys much faster, smoother, and efficient** when roads are no longer cluttered with miscellaneous traffic and **traffic engineers can be much more imaginative in designing road layouts and using more sophisticated signalling technology** informed by live operational data to minimise delays to individual vehicles.

The critical political decision will produce a series of 'quick wins' but, over time, **refocusing the skills of traffic engineers** and developments in digital technology **will lead to a series of smart measures to continuously improve bus speeds in urban areas.**

Bus Stations

With the major increase in the volume of demand, **Bus Stations will become a critical component of town, city centre and suburban area infrastructure** and will need to be located conveniently, designed to a high standard, and contain a wide range of complementary facilities and services providing added convenience to bus commuting.

In many locations, they will be **bigger and more important than rail stations** and will need to be **stylish and iconic** as well as functional to ensure the **bus is presented as an efficient, comfortable and fashionable way to travel.**

Their location will need to be convenient for walking to retail and business premises and places of entertainment, well located to match bus route alignments and laid out in such a way that internal bus movements are quick, safe, and efficient.

Blending those priorities will be a challenge and require a whole new set of planning skills.

In addition to providing space for buses, customers, and operational staff, they should also **contain key services such as parcel lockers, laundries, convenience stores, shoe repairs, bus retailing, information services, coffee and sandwich shops** to allow customers to fit those kinds of transactions easily into their trip to match the current convenience, despite the congestion issues, open to car commuters today.

In addition to digital information, physical wayfinding signage needs to be bold and clear to **ensure that customers can move quickly and easily around the Bus Station** to find their bus service and other facilities they require to access and also know how to reach significant locations nearby.

Mobility Hubs

Outside of major centres, there needs to be **locations where customers can conveniently switch from their core bus service to feeders and shuttles, park their bike or pick up a rental bike or scooter etc to make their whole journey more convenient.**

Many of those locations will also justify accommodating some of the other convenience features of Bus Stations.

Some Mobility Hubs, where appropriate, may also make provision for Park and Ride. Ideally, park and ride should be minimised as it encourages car ownership and use which can lead to congestion and air quality issues outside of towns and cities but, where appropriate, it will generally make sense for them to be an integral component of a Mobility Hub.

Bus Stops

Bus stops throughout the networks will **need to be of a consistent quality** incorporating sufficient road space for multi door vehicles, sufficient waiting space for customers with shelter, seating, accurate real time information, physical timetable displays and good quality identification and branding.

They need to be **stylish and iconic reinforcing the bus as the premium mode of mobility in urban areas for all.**

Integration and Interchanges

Buses and coaches will need to **seamlessly integrate with other modes of mobility** including taxis, rental cars, trams, and trains wherever they come into proximity with each other.

Depending on the location, they will either be a bigger version of a bus stop or a smaller version of a mobility hub with **clear information and signage in respect of the walking route to any connection** with **accurate real time information on the expected arrival time of their connection.**

Digital Connectivity

It will be essential that a **high standard of digital connectivity is provided** throughout all Bus Stations, Mobility Hubs, Bus Stops and Interchanges through 5G Wi-Fi or any future enhanced digital technology to ensure that customers can have convenient access to all the data they require on their journey.

Governance and Funding

Whilst responsibility for the **funding and delivery of the Road and Highway infrastructure will clearly lie with either national or local government**, the **governance and funding of Bus Stations, Mobility Hubs, Bus Stops, Interchanges and Digital Connectivity** may very well best be a **shared activity between national and local government and operators of mobility modes.**

This subject will be addressed in more detail in **Episode 10** and **Episode 11** on **Funding** and **Governance.**

Operational Infrastructure as set out below will be a matter for Operators to consider, plan and deliver.

Operational Infrastructure

The expansion in the size of bus fleets in towns and cities will **require additional depot infrastructure for overnight parking and servicing and maintenance of buses, additional management and control facilities and staff facilities.**

Those **needs will evolve slowly over the next two decades** but will need to be planned well in advance and delivered to a high standard if the service to customers and wellbeing of staff is to match the quality needed to deliver a mobility experience which will be acceptable to customers who previously commuted by car.

Redundant Private Car Infrastructure

In addition to the new infrastructure required to underpin **Mass Transit First Mobility**, there will be implications for a lot of existing infrastructure in UK towns and cities.

Currently, **great swathes of land are given over to the storage of cars in urban centres during the 90%+ time in which they are not being used.** That releases both land and buildings for other uses which town planners would need to be taking into account.

Additionally, in parallel with the **Mass Transit First Mobility** policy, the **conversion of those private cars which remain to zero emission technology will render redundant many Filling Stations to be replaced by Electric Charging Infrastructure** in very similar timescales.

Our **towns and cities will look very different by 2050** as a result but, this time, for the better with the removal of large car parks, much cleaner, healthier air and people able to enjoy walking and cycling around a **pleasanter city environment without the noise and congestion caused by incessant traffic.**

Conclusions

Whilst it is true that some quick wins can be achieved in reducing congestion, improving the environment, and generating modal shift to mass transit, this will be followed by a series of major changes to the urban landscape as local authorities replan road layouts to facilitate mass transit, cycling, walking and leisure activities.

Major construction and investment will be required in Mass Transit Infrastructure – principally Bus Stations, Mobility Hubs, and Bus Stops.

Finally, **stripping out redundant private car facilities will also change the nature of urban areas.**

The **transition will take decades to fully deliver** but it is essential that, in the same way as bus operators need to be on the front foot in transitioning networks, **local authorities will need to be on the front foot, too, in planning and delivering the supporting infrastructure.**

There is, therefore, **little time to waste.**

Next Week

Next week, in **Episode Six**, we will address **Technology**.