

Written evidence submitted by Transport for West Midlands (EVP0078)

Who we are?

Transport for West Midlands (TfWM) is the transport arm of the West Midlands Combined Authority (WMCA). WMCA's statutory duties and powers are exercised in respect to the combined area of the seven constituent councils¹, which is currently coterminous with the West Midlands metropolitan county.

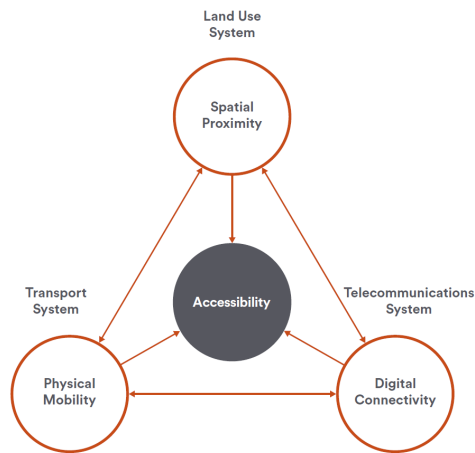
Summary points to the Inquiry

The implications of accelerating the shift to zero emissions vehicles and the potential for introducing road pricing are fundamentally tied to views on the role of various vehicles in the future transport system and the need to reduce energy consumption for travel. This is necessary to meet the objectives of climate change.

It is well-recognised that the shift to zero (tailpipe) emission vehicles is critical but insufficient for decarbonisation. Vehicle miles travelled needs to stop growing and reduce relative to today. For passenger travel, this means reductions in the use of single occupancy cars. Conceptually, this can be achieved without necessarily sacrificing access to opportunity through better utilisation of the Triple Access System², and through "avoid" and "shift" transport outcomes associated with the "avoid, shift, improve"³ framework for transport emissions reductions. The rationale for this change extends beyond the aim of avoiding climate change; a transport system with less single occupancy private car use could also be fairer, healthier, happier, and more economically productive.

The Triple Access System

This is the triple access system that shows how physical mobility, digital connectivity and spatial proximity interrelate and provide access.



Source: Lyons, G. and Davidson, C. (2016). Guidance for transport planning and policymaking in the face of an uncertain future. Transportation Research Part A: Policy and Practice, 88, 104-116.

Avoid

Avoiding travel – for example by accessing services online and consolidating the trips we make;

Shift

Shifting travel – to places that are more accessible by sustainable modes of transport, such as cycling, walking or public transport and travelling by those modes; and

Improve

Improve travel – by designing out emissions and other impacts from the vehicles we use and tailoring their use, for example by adopting ultra-low emission vehicles.

There are differences of opinion on the amount of reduction in car usage that is required in the UK to honour the Paris Agreement:

- The Committee for Climate Change has recently advised Government that car mileage reduction of 5% by 2030 and 17% by 2050 (relative to projections in those years) would be required for Government to meet its commitments to the Paris Agreement and to be net-zero by 2050.
- Research carried out by the Tyndall Centre found that even if all new cars were ULEVs by 2035, a 58% reduction in car mileage between 2016 and 2035 would be required to meet its recommended carbon budget for the UK.

A number of transport authorities have begun to adopt their own targets in their LTPs. Many are adopting bold targets for reducing car use in line with local ambitions to decarbonise faster than Government's statutory obligations and the CCC's recommendations. The West Midlands will bring forward refreshed transport policy in a new LTP in late 2021. This will set out how the region's decarbonisation targets for transport will met.

However, in practice there will be limits in how far unilateral local policies will effectively achieve local targets given that transport crosses borders. There is need for consistency between local administrative areas (particularly with strong economic and social ties), and between local and national administration.

Government has no national targets for vehicle mile reduction relating to decarbonisation or other objectives for transport (nor a position on how demand management/reduction should be distributed across travel between different places in the UK).

Based on the CCC's recommendations and wider evidence, providing viable alternatives to private vehicle use, without also making it more difficult to drive, will not achieve net zero emissions in the required timescale.

Whether the aim is to simply halt the growth of travel demand or significantly reduce travel relative to today, there is an argument for the use of demand restraints, including pricing measures like Clean Air Zones, parking charges and road pricing. However, the level of intervention required does depend on the level of behaviour change required. Many of the challenges with electrifying transport depend on whether the national vision for the future of transport includes vehicles continuing to be used as they are today; or whether there is an intended monumental modal shift from cars to other more sustainable modes of access.

The approach to national strategy is currently fragmented and in order to play a role in addressing a supranational response to global issues, needs to be joined up:

- In climate policy, the CCC has recommended that a national framework be established clarifying roles within the UK for delivery of the Paris Agreement's aims, and that this should cover the role of local government. However, plans need to be based on a holistic set of objectives for society, the economy that underpins it and the environment on which it depends; decarbonisation needs to be embedded within visions for the kind of places and society we want to live in.
- The policy framework for placemaking has also resulted in examples of inconsistency across the country, for example with gaps between Local Development Plans and Local Transport Plans. These need to share a common statutory framework for transport that is aligned with a wider strategic and statutory framework for place making, energy and other related sectors. Instead across the UK development is permitted which is continuing to create a car dependent transport legacy that will make decarbonisation and other objectives less achievable. The recent Planning White Paper did not address this issue and action at a local level is challenging if not unrealistic due to legitimate concerns about economic displacement impacts arising from.
- Finally, as stated in previous submissions to the Transport Select Committee, national transport strategy is fragmented in England. An overarching transport strategy is required to resolve the tensions between competing aims.

Accelerating the shift to zero emission vehicles

The feasibility, opportunities, and challenges presented by the acceleration of the ban of the sale of new petrol and diesel vehicles to 2030;

A key challenge with determining what public policies to implement to generate the transition from internal combustion engine (ICE) to Zero-Emission Vehicle (ZEV)⁴ technology will be ensuring that subsidies and support to encourage private ZEV car ownership does not further embed car dependency to an extent that would undermine wider efforts required to reduce car use and improve consumer choices available for more sustainable modes of travel (which is necessary for decarbonisation and could support wider objectives).

Other key issues to consider are:

| Challenge | Opportunity | |
|--|--|--|
| A rapid shift to ULEV cars could disadvantage those who are unable to afford a ULEV car - in particular, people facing car-related economic stress who are dependent on their car and lack other consumer choices. | <p>Across all these challenges there is an opportunity to avoid the issues through adoption of a transport vision and strategy that aims to reduce car dependency and usage.</p> | |
| A rapid shift to ULEV cars could disadvantage those who do not have off-street parking that could accommodate home charging. | | |
| Rapid roll out of on-street chargers in areas without off-street parking could further clutter pavements, undermining efforts to ensure the design of streets supports inclusive active travel. | <p>Within such a strategy a focus on switching out privately owned cars for more sustainable consumer choices could include shared access to EV cars through car clubs.</p> <p>These may be provided in places where there are wider community facilities/shops to enable people to use vehicle charging time more productively. These could, be integrated with other mobility services e.g. ‘mobility hubs’.</p> | |
| Rapid roll out of public infrastructure by local authorities will increase their liabilities and could result in legacy issues where the technology becomes redundant through technological advances or a reduction in car usage. | | |

The actions required by Government and private operators to encourage greater uptake of electric vehicles and the infrastructure required to support them.

Policies to transition to ZEVs must enable the decarbonisation of all vehicles; public and private (commercial and household) passenger and freight vehicles. This infrastructure requires integrated transport and energy planning. For example, there are opportunities to co-locate charging facilities for various public and private vehicles such as Mobility Hub type facilities (for example chargers for EV cars; private and car clubs, goods vehicles, and buses, and supplies for continuously powered modes such as light rail). This could help leverage greater transport benefits from energy infrastructure, delivering better value for money.

We are confident that the market will deliver charging infrastructure, but only where the cost is not prohibitive and where utilisation capacity is expected to be high (which can be supported by Government vehicle regulation and subsidies). The key issue is therefore whether this charging infrastructure is efficiently utilised and whether it is in the right place to allow an equitable transition to decarbonised transport services.

Whilst the design and implementation of chargers is key, wherever chargers are, they will need adequate supply to be provided by the underlying energy infrastructure (generation, transmission, and storage). It is in these systems where there are arguably the most challenging infrastructure constraints, and in which significant investment is required to enable electrification of transport.

Combined Authorities currently have little influence over strategic investment in the underlying energy system to support transport decarbonisation. However, governance and collaboration to integrate transport and energy planning and delivery could help to address this. The WMCA have formally approached government with proposals for regional energy devolution which would enable this in a way that brings local placemakers together to identify the infrastructure required for delivery of local vision. Whilst such an approach is required in the West Midlands it is also required elsewhere and can be demonstrated as having benefits through international examples of best practice. The West Midlands is well placed to pilot this approach, but ultimately a national framework will be required that addresses the miss-match of regional governance structures with the national approach to the planning the energy grid.

The particular challenges around decarbonising buses and how these should be addressed;

Bus operators are currently paid Bus Service Operators Grant (BSOG) by Government. This is based upon mileage undertaken by diesel vehicles and thus acts as a direct financial disincentive for operators to convert to zero-emission vehicles as they lose this funding. BSOG should be reformed so that it rewards operators for investing in low emission vehicles. The devolution of BSOG to Combined Authorities would enable funding to be better targeted at initiatives that align with local objectives.

TfWM has been working with bus operators, Coventry City Council, Warwickshire County Council and the DfT to develop plans for an all-electric bus fleet in Coventry as part of the £50m electric bus town fund. Whilst the availability of significant funding to deliver this objective is proving essential, the project also brings to light a number of other difficulties in achieving the objectives. These are summarised below. There is a commitment to undertake full Monitoring and Evaluation as part of the project which will help understand some of these issues in more detail.

- **Cost.** The upfront cost of electric vehicles as opposed to equivalent vehicles is higher and whilst ongoing operational costs are likely to be lower, this reduced operating cost does not yet outweigh the additional upfront capital cost, particularly where the loss of BSOG is a factor.
- **State Aid and procurement.** Where public funding is available to support operators with the purchase of electric vehicles, simple and transparent mechanisms to achieve this are difficult. Factors such as State Aid (and successor regimes) and the distortion of competition in a commercial environment need careful consideration.
- **Infrastructure.** The operation of zero emission vehicles relies on the installation of infrastructure that is not yet comprehensively in place, whether that be hydrogen refuelling or electric charging infrastructure. Options include publicly available facilities, private on-street facilities or in depot facilities. Each of these options poses its own set of challenges and there is not a consistent approach, with the commercial market view in a deregulated bus operating system not necessarily aligning with approaches that are consistent with best use of public money.

- **Manufacturing capacity.** Buses are still built in the UK and exported, it is a small but important part of UK manufacturing, with a large supply chain and established customer base. It also provides jobs to some of the UK's poorest regions. A widespread move to electric buses ought to mean new business and manufacturers have shown they can innovate if customers want new bus types, demonstrated through the recent shift to Euro VI. But they have not yet had chance to recoup investment in that technology shift to Euro VI. Whilst a flood of electric bus orders could overwhelm current capacity, if many orders instead go overseas there could be a damaging effect on the remaining UK bus manufacturing businesses and jobs. This may also result in less suitable vehicles which are not designed principally for UK needs or passengers being the only available options, threatening the vision of a future of clean, efficient bus services.
- **Technology.** Zero-emission buses are not yet technologically mature so there may be some apprehension from bus operators that they are purchasing technology that may be quickly outdated, particularly given that buses are typically written off over 12-15 years or longer. The cost of technology is also falling, meaning operators may want to hold off investing until prices have fallen sufficiently. This is also a consideration where public investment is supporting the purchase of vehicles and infrastructure, where a more positive business case could be achieved by deferring investment until the cost of technology falls.
- **Operational challenges.** Whilst the travel range of electric vehicles is lower than diesel vehicles it introduces a constraint on routes which they can be used on. Long routes may require an increased number of vehicles if vehicles need to be taken out of service to re-charge.
- **Skills.** Bus operators, particularly small operators, are less likely to have skilled engineering staff to maintain zero emission vehicles so may need to rely on external support, which may import further cost, particularly in mixed fleets. Incentives to assist operators could be aligned with national skills funding.
- **Regulatory Tools.** The Bus Services Act gives local authorities powers to implement Advanced or Enhanced Partnerships which can require the use of zero emission vehicles, but such schemes cannot be imposed unilaterally.

The Government's ambition to phase out the sale of new diesel heavy goods vehicles, including the scope to use hydrogen as an alternative fuel.

There is uncertainty over which fuels will be most appropriate to deliver net-zero HGVs, with varying views around hydrogen, green gas (e.g. biomethane) and electrification. Without the appropriate signals to the market there will continue to be a 'Mexican standoff' with fleet operators and infrastructure providers waiting to understand where the market will go, allowing them to make no regrets investments. This would significantly hamper the speed at which industry could decarbonise its fleets and operations.

Government's Decarbonisation Ten Point Plan sets out a plan to consult on the phasing out of new diesel HGVs, which is currently expected in Spring 2021. Government and industry need to be more ambitious to grasp the opportunity that hydrogen HGV's presents, as well as delivering a transition plan, as hydrogen production barriers are resolved and wider technology matures. There are strong academic and overseas best practice evidence to suggest that biomethane represents an opportunity to make relatively rapid targeted moves as part of a pathway to low emission heavy duty vehicles. Biomethane can be retro-fitted to ICE vehicles and whilst not totally clean at the tail pipe can provide compelling de-

carbonisation benefits in the short to medium term whilst vehicle fleet investments are 'sweated' and strategic energy and supply grid solutions are developed.

Moreover, the Midlands is key for the UK's commercial transportation network and operations and could be a key region for pioneering the development and use of low emissions and hydrogen fuelled heavy goods vehicles. The West Midlands forms a major part of the UK's logistics golden triangle at the heart of the UK with significant volumes of freight trips being transitioned through hubs in the area as well as originating from or destined for our manufacturing activity.

Within the West Midlands, Jaguar Land Rover have committed to making all electric cars by 2030, the UK Battery Industrialisation Centre has been constructed and Gigafactory is planned for construction in Coventry. The region is also home to cities which are implementing clean air zones which, in turn, will impact how goods are transported into and around these cities. Birmingham also has the UK's largest hydrogen electrolyser for public transport, located at Tyseley Energy Park.

Midlands Connect, Cenex and the Midlands Energy Hub are developing a whole systems approach to creating a hydrogen heavy goods vehicle market.

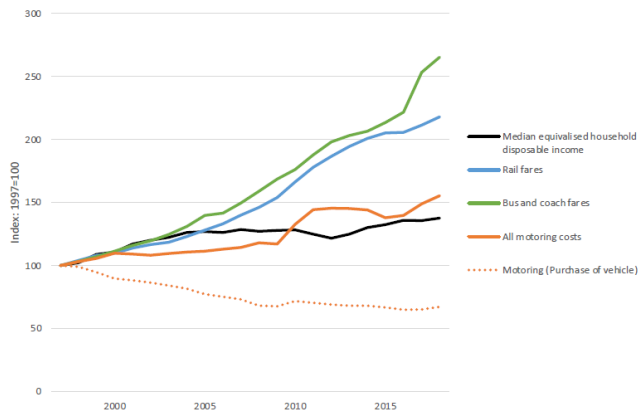
Road pricing

The case for introducing some form of road pricing and the economic, fiscal, environmental and social impacts of doing so.

The Treasury has noted the potential for road pricing to replace public receipts lost through the anticipated loss of fuel duties, which has reduced funds available for the road network, among other things. However, the case for road pricing should not be based solely on this, but also on how it can help enable a more sustainable transport future.

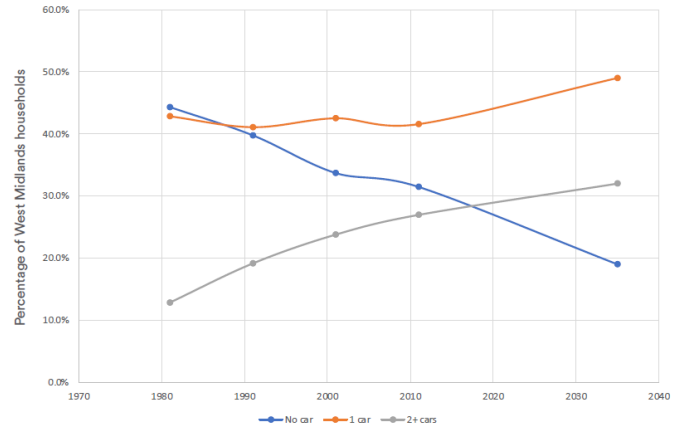
Since fuel duty revenues peaked at 2.2% of national income 20 years ago, they have already been in relative decline owing to policy decisions to freeze fuel duty. In 2019, fuel duty accounted for 1.3% of national income (a 40% reduction over 20 years). These decisions have run counter to repeated advice to Government on the need to better manage travel demand. Motoring has become increasingly affordable relative to public transport, increasing travel demand (and carbon emissions), and this is in no small part owed to national fiscal policy.

Changes in the costs of transport (UK) and car ownership (West Midlands)



Source: Transport Statistics Great Britain (DfT) and ONS

As motoring costs have reduced relative to public transport fares, car ownership has increased. Whilst the proportion of households without a car is decreasing, the number of households is still increasing because of our growing population.



Source: Census and PRISM

In an ideal transport market, the prices travellers pay should cover all costs of their travel; there should be no significant unaccounted external costs of their travel (for example carbon emissions, air pollution, road wear, congestion and marginalisation of particular groups who face inequitable transport barriers all have a cost to society). If external costs are not accounted for, this should be justified. Pricing in the transport system should reflect the true cost of the mode (including externalities) except where there is a conscious and transparent policy to subsidise (modes or cohorts)

There are many unaccounted external costs that travellers do not pay. In particular underpricing of car use and land uses which rely on car access is significant. The external costs are in effect subsidised - including by those who do not benefit from access to a car - and many costs will ultimately be paid for by future generations through economic and social harm.

However, the effect of underpricing is not only the generation of externalities; the underpricing has also undermined and deteriorated provision of more sustainable consumer choices which cannot compete in a market that is distorted to enable cars to outcompete other forms of transport.

Fair pricing policies do not need necessarily need to penalise the car, as it is and will remain a vital and valuable part of the transport system allowing society to benefit from access to opportunity of all forms. However, a national policy framework which seeks on one hand to de-carbonise the transport system, should also seek to balance the natural competitive consumer edge the convenience of private single occupancy car use provides in many circumstances with a pricing policy that reflects its true full costs.

The rationale for the introduction of road pricing therefore needs to be based on four key mechanisms that will enable improved outcomes for society:

- To account for external costs of consumers choices and, in so doing, influence choices that result in much higher external impacts.
- To significantly nudge consumer spending and demand, enabling the market to provide more sustainable (and otherwise better) consumer choices that currently can't compete with under-priced unsustainable services/products.

- To raise public receipts that can be used to address externalities that are generated and to provide investment and subsidy to support market transition.

The use of public receipts arising from road pricing could include financial support/subsidy that help those on lower incomes adapt during transition; developing public infrastructure to accommodate change in consumer choices; and financial support/subsidy that helps suppliers develop and deploy better products/services at pace.

The case will also need to be based on an understanding that market intervention will (and should) enable change across the Triple Access System – noting that more sustainable mobility relies on better land uses and can be supported by digital connectivity.

Ultimately the case for road user pricing should be based on better outcomes for society. There needs to be careful design over such a tax, and the extent to which public accounts become dependent on it. In such a case, there can be tension between financial and social aims, where there is a financial imperative to keep demand for a taxed commodity high but there is a social imperative to reduce the demand.

Which particular road pricing or pay-as-you-drive schemes would be most appropriate for the UK context and the practicalities of implementing such schemes?

Road pricing (or pay-as-you drive) should be seen as one of a number of levers that will drive the positive behaviour changes that we need to achieve the policy/societal outcomes listed above. This approach has to be part of a nationally led framework and set by Government. A starting point could be to investigate a priced inter-urban trips where those trips tend to destinate or originate in an urban setting. This would also allow differentials for less densely populated and very rural settings where there are few viable alternatives to the car, but equally a lower density of strategic road networks. However, significant thought and measures would need to be applied to avoid a ‘push’ from strategic road use to local road use and a consequent risk of increased road safety and local congestion issues.

This challenge represents the need for a balance of national framework and local engagement to ensure intelligent implementations that can work for local areas and national industry. This is particularly critical for the freight industry for which examples of multiple different implementations of non-standardised local or regional road pricing could create unmanageable consequences.

The 2017 Wolfson Economics Prize was based around the proposal of fairer pricing schemes for roads and innovative systems. The submissions offered a number of innovative policy solutions and practical solutions of developing pay as you go driving. The prize-winning report, ‘Miles Better’, proposed that Vehicle Excise Duty and Fuel Duty should be abolished, and replaced with a distance-based charge that would be collected by vehicle insurance companies, and would also reflect the environmental impact the vehicle has.

The level of public support for road pricing and how the views of the public need to be considered in the development of any road pricing scheme.

Within the West Midlands, research carried out by TfWM’s Human Intelligence Team has shown that the public are becoming increasingly dissatisfied with the amount of traffic congestion. Despite this, there is a general lack of willingness to reduce personal car use. When asked what would encourage them to reduce car usage, the majority (82%) stated nothing/need my car.

Yet, for Birmingham residents where the Clean Air Zone (CAZ) is being implemented, support outweighs opposition with the primary reason being to improve the environment (55%) suggesting that people are understanding of a need for change. Opposition was focused on financial reasons, with 13% stating they believe there are too many charges/shouldn't have to pay more to drive and 7% thinking it was a money-making scheme for councils. Of those who would be affected by the scheme 47% stated they would continue to drive but would most likely try to change their usual route of driving to avoid paying the charge.

The Climate Assembly (climateassembly.uk, 2020) found people to be less accepting of 'restrictive' policy options (e.g. road pricing) as opposed to policies linked to switching to EV. They disliked being discouraged from car ownership and felt it would restrict their travel and lifestyle however, they did believe that road pricing would solve congestion. They also noted a distrust in the 'Big Brother' effect and felt that it should perhaps be an external, not-for-profit organisation who manages the system, rather than the government. The use of insurance companies, who already collect and manage all data which would be necessary for road pricing, could have an advantage here, also featured in the 'Miles Better' 2017 Wolfson Economics Prize proposal.

Walker (2011) found that to develop public support for road pricing, education is key, with people becoming much more accepting of road pricing once they had more understanding of it. This is particularly notable within females, who overall became increasingly positive about road pricing once they learnt more about it. The least accepting of road pricing was found to be 18–24-year-old males and those from a lower socio-economic background. The over 65's were also concerned about losing freedom. Concerns over fairness seemed to be the biggest barrier with consideration needed for vehicle size, people's income, health and disability needs and proximity of residence or business to the charging zone.

Research has shown that the acceptability for road pricing is not consistent and that public opinion constantly changes over time. For example, the introduction of on-street parking charges has long been forgotten and these are now an accepted part of the transport environment and an important part of the demand management toolkit. Evidence from Sweden's road pricing trial showed altering acceptance before, during and after the trial period, with acceptance at its lowest right before the scheme was implemented. Considering this, a referendum should not be held right before implementation, when levels of acceptance are at their lowest.

Within the UK there has commonly been low acceptance of road pricing with referendums carried out in Edinburgh in 2005 and Manchester in 2008 on whether road pricing should be introduced receiving 'no' votes at a ratio of 3:1 and 4:1. But recently, David Begg, transport convenor in Edinburgh at the time of the referendum, has said that the scheme might have won the vote if it had been aimed (initially) at traffic coming in from outside (and imposing external congestion, noise, pollution, and safety costs on voting residents).

The lessons to be learned from other countries who are seeking to decarbonise road transport and/or utilise forms of road pricing.

There are several countries who have introduced road pricing schemes. These include toll roads, toll bridges, congestion charges and LEZ/ULEZ's.

Most notable is the world's first road pricing scheme in Singapore, originally introduced in June 1975 and made electronic in 1995. This automatically charges the driver depending on what road within the city they are using, the type of vehicle it is and the time of the day. The

geography of Singapore does make it a unique case as it is a city state and therefore implementing a unified system across the country was simpler.

There were several lessons learned including fine avoidance, increased traffic immediately prior or after certain peak period charges and issues with strangers randomly car sharing to avoid charges. However, they note two aspects which have helped make the scheme a success:

- Stressing that the scheme was not simply for revenue raising as was ultimately a method to reduced traffic.
- Regularly analysing the traffic data and adjusting the charges accordingly – altering this on a seasonal period helped to show that the government were not purely charging for economic value.

Following this, several European countries have also introduced forms of road pricing, noting the damaging impact of vehicle use as their primary motivation. Both Germany and Austria established tolls on HGVs and lorries on motorways which has resulted in companies increasing their uptake of low emission HGV's providing a positive environmental benefit.

On a smaller scale, European cities such as Milan and Stockholm have also successfully bought in road pricing schemes which have subsequently developed and adapted.

- Milans 'Ecopass', originally a LEZ created in 2008, successfully transitioned into Area C in 2011. This added a congestion charge onto the already restricted vehicle access city centre region as people gradually shifted to more 'environmentally friendly' vehicles and traffic slowly rose again. After one-year Area C reported a drop-in traffic of 31.1%. The revenue generated from the charges maintains running costs and funds sustainable mobility projects in the city.
- Stockholm trialled a 6-month congestion charge and bridge toll across the city centre, this reduced traffic by around 21-28%. Following the trial, a referendum was held in which a 'yes' vote to reinstating the charges was marginally successful and the charges was eventually hailed a "success story". It is interesting to note that in the brief period between the trial and permanency when no charge was being issues, traffic was still down 5-10%, indicating that people's attitudes to travel had shifted.

Within the UK there are currently two road pricing schemes in operation, the Durham congestion charge introduced in 2002 which charges to use the public access road into the historical city centre and London's Congestion Charge Zone (CCZ) and ULEZ zones introduced in 2003 and 2019. Neither of these schemes were put to a referendum before installation (not including the London CCZ Western Extension) and yet both have successfully seen a reduction in traffic and are largely supported by the public.

February 2021

Endnotes

¹ These are currently the seven metropolitan district authorities of the West Midlands, including Birmingham City Council, Coventry City Council, Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council, Solihull Metropolitan Borough Council, Walsall Metropolitan Borough Council and the City of Wolverhampton Council

² Lyons, G. and Davidson, C. (2016). Guidance for transport planning and policymaking in the face of an uncertain future. *Transportation Research Part A: Policy and Practice*, 88, 104-116.

³ https://www.transformative-mobility.org/assets/publications/ASI_TUMI_SUTP_iNUA_No-9_April-2019.pdf

⁴ *Noting the CCC's recommendations to phase out hybrid vehicles as quickly as possible, not just conventional ICEs.*