

# Integrated Transport Strategy – Review of the Evidence

By James Gleave



#### Introduction

Transport for Greater Bristol is developing an Integrated Transport Strategy for Bristol. Having undertaken its own work and adopted plans on Traffic Management, Parking, Buses, and Rapid Transport, this plan will be overarching, bringing this work together in a clear vision. As part of this work, Mobility Lab UK have undertaken a review of the evidence concerning a number of transport challenges facing the city, for the purposes of baselining the current position, and understanding how current policy approaches achieve the necessary step change to meet the challenge identified.

#### Methodology

The approach taken in this analysis was to analyse data focussing on a number of transport challenges, to baseline current movement patterns in the city and distribution of different transport interventions, to identify recommended policy responses to these issues, and to review current policy and interventions in the city. In a practical manner, this involved a number of aspects of data collection:

- A review of a number of open data sources from local and national government that show local and national travel patterns, as well as quantifying challenges to as local level as possible (ideally at the Lower Super Output Area);
- Feedback from a Pol.is survey of local stakeholders and a local Advisory Group that identified local transport issues considered to be of priority
- A review of academic and professional literatures to identify recommended policy responses to the issues identified;
- A review of local policies that identified remaining transport issues not identified previously, identified policy priorities, and set out delivery plans for tackling the issues identified.

More detailed analysis was undertaken on current policies and plans by way of a Policy Analysis. This has been produced as a separate report.

This report intends to summarise the evidence base relating to a number of key transport challenges in Bristol. As the work progressed, it became clear that a number of the issues raised manifested themselves in different ways at a local level. More detailed evidence collection was undertaken for different areas of Bristol. These were summarised in Evidence Packs, that are included in Appendix A. But the results of this analysis is summarised here.



#### **Key transport challenges facing Bristol**

Transport has often been described as a wicked problem. These are problems that are complex, and accordingly cannot be solved purely by traditional processes<sup>1</sup>. The number of organisations that have a role in tackling these problems is many and varied. In Bristol, this includes the West of England Combined Authority, the local transport authorities (e.g. Bristol City Council), the Department for Transport, private bus and rail operators, taxi companies, logistics companies, and many, many more.

	Who does what when it comes to transport?						
ı	WEST OF ENGLAND Combined Authority	Bath & North East Somerset Council	First 🍞	<b>*</b>	<b></b>	Department for Transport	highways england Highways
	WECA	Local Councils	Bus operators	Rail operators	Taxi operators	Government	England
Who sets transport policies?	<b>~</b>	<b>✓</b>				<b>~</b>	<b>~</b>
Who looks after the roads?		Local Roads					✓ Motorway:
Who runs the buses?			<b>~</b>				
Who runs the trains?				<b>~</b>		Lets contract	
Who looks after parking?		<b>~</b>		Rail stations			
Who looks after taxis?		Licences			<b>~</b>		
Who runs dial-a- ride services?		<b>✓</b> Funding					
How transport is ma organisations work services work.				ZERO WEST	Great Allian	poort for er Bristol ce pining for ed Transport	Mobility Lab

Figure 1 - Extract from Evidence Packs (Appendix A), showing who is generally responsible for what in transport in Bristol

The West of England Combined Authority area is home to 1.1 million people<sup>2</sup>. The reality is that the transport challenges facing it are many, and manifest themselves differently in different neighbourhoods, and even on different streets. Many challenges are also closely related to one another, and have effects on other challenges and in other policy areas that seem unrelated, or require actions on multiple fronts to deliver a solution.

Our research confirmed this. This complexity is important to understand and to reflect on when taking decisions. But the majority of these challenges can be summarised under 5 key strategic transport challenges facing the city.

<sup>&</sup>lt;sup>1</sup> Weigmann, M. (2013) Finding Solutions for Wicked Transport Dilemmas: The Case of the Munich Inzell-Initiative. Jacobs University Bremen

<sup>&</sup>lt;sup>2</sup> West of England Combined Authority (2020) West of England Combined Authority. Link: <a href="https://www.westofengland-ca.gov.uk/">https://www.westofengland-ca.gov.uk/</a>





Achieving net zero emissions and reducing air pollution in the city. This is a common policy goal at all levels of government, but is an area that has been hard to tackle traditionally.



Making it easier for those traditionally excluded to get around the city. A variety of people face barriers to getting around by public transport.



**Establishing a road user hierarchy that is delivered in practice.** Traditional hierarchies place walking, cycling, and public transport as the highest priority, yet Bristol is dominated by the use of the private car.



Operating public transport in an integrated manner, that makes public transport the default choice. The operation of public transport is divided into different private companies with little coordination. Additionally, they must integrate well with walking and cycling.



The transport network does not put the needs of users first, especially the most vulnerable. It is currently delivered in a manner best suited for operators, or lacks the knowledge of specific users that is needed to deliver good solutions.

Over the coming pages, we will consider each of these in detail. This will set out the evidence base, set the context of each issue in Bristol, and conclude what this means for the Transport for Greater Bristol plans.



## Achieving net zero emissions from transport and reducing air pollution in the city

#### **Summary**

Transport is a significant source of carbon dioxide emissions locally, and is the dominant source of local air pollution issues across Bristol. The main source of both is road traffic, primarily cars but also freight and delivery traffic. Local policies place both issues as a priority. However, planned investment in highway improvements are likely to result significantly impact on the authority's ability to deliver improvements. Policies and funding that prioritise the use of public transport, walking, cycling, and reducing car travel, whilst decarbonising remaining vehicles, is needed locally.

#### The current baseline

Transport is one of the most significant sources of carbon emissions locally in Bristol, accounting for 34% of locally sourced CO2 emissions<sup>3</sup>. Of these, around 70% can be attributed to private vehicle use on local roads. Whilst there has been both a total and per capita reduction in emissions of CO2 from transport, the decrease has not been as significant as in other industrial sectors.

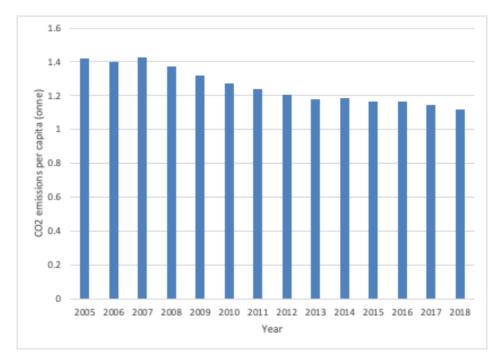


Figure 2 - Transport emissions per capita of Bristol per annum4

<sup>&</sup>lt;sup>3</sup> Department for Environment, Food, and Rural Affairs (2020) UK local authority and regional carbon dioxide emissions national statistics: 2005 to 2018. Link: <a href="https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2018">https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2018</a>

<sup>&</sup>lt;sup>4</sup> Department for Business, Energy, and Industrial Strategy (2020) Emissions of Carbon Dioxide for Local Authority Areas. Link: <a href="https://data.gov.uk/dataset/723c243d-2f1a-4d27-8b61-cdb93e5b10ff/emissions-of-carbon-dioxide-for-local-authority-areas">https://data.gov.uk/dataset/723c243d-2f1a-4d27-8b61-cdb93e5b10ff/emissions-of-carbon-dioxide-for-local-authority-areas</a>



Bristol City Council has committed to achieving Net Zero Emissions by 2030. If the rate of reduction in transport CO2 emissions since 2005 is assumed, by 2030 transport will still be emitting 464kt of CO2 per annum in Bristol.

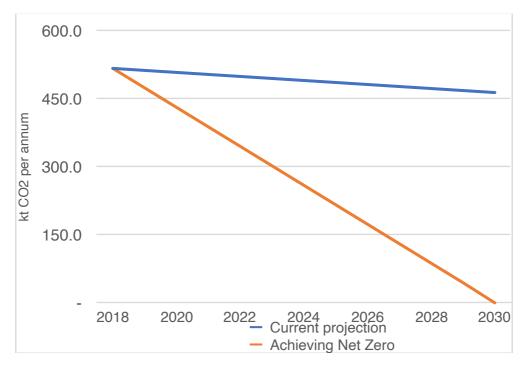


Figure 3 - Projections for required reductions in CO2 emissions needed to achieve zero emissions by 2030.5

Tackling the issue of reducing carbon emissions from transport is a very difficult task. The core challenge is to be able to decarbonise all aspects of transport at a rapid pace, at the same time to meet the challenge of achieving Net Zero. Historically, transport has faced a number of significant challenges in decarbonising the sector.



Nudging towards modal shift has had limited success. Where extensive behaviour change campaigns and investment in non-car modes of transport has been delivered, such as the Sustainable Travel Towns and the Cycle Towns, there has been a demonstrable change in travel behaviours. These projects have typically been isolated, and few and far between.

<sup>&</sup>lt;sup>5</sup> Own Analysis. Base data from Department for Business, Energy, and Industrial Strategy (2020) Emissions of Carbon Dioxide for Local Authority Areas. Link: <a href="https://data.gov.uk/dataset/723c243d-2f1a-4d27-8b61-cdb93e5b10ff/emissions-of-carbon-dioxide-for-local-authority-areas">https://data.gov.uk/dataset/723c243d-2f1a-4d27-8b61-cdb93e5b10ff/emissions-of-carbon-dioxide-for-local-authority-areas</a>





High levels of sunk costs and committed infrastructure. The majority of transport infrastructure that will exist in 10 years has already been built, at a significant capital cost. This means that, in transport economics, it is better value to maximise the use of the assets, so as to get the best rate of return on the original investment. Additionally, much of the infrastructure has been designed according to the needs of vehicles and design standards that do not consider other uses. Therefore in some instances, it is difficult to repurpose existing infrastructure for other uses.

Taking significant action to reduce transport emissions means breaking the link between transport and the economy. There is a close relationship between the rate of growth in overall vehicle use (measured in terms of vehicle-km) and economic performance, and vehicle use and vehicle emissions. Simply, when the economy grows, the number of vehicle-km also grows, as does vehicle emissions (notwithstanding the effects of greater fuel efficiency). 'Decoupling' this relationship is important, but how this is done is uncertain.



Restricting individual travel choice is politically challenging. Modal shift strategies, that are core to decarbonising transport, require delivery of initiatives that may restrict or discourage the use of private cars. This is often politically controversial.

This is a significant challenge. Analysis for Bristol City Council indicates that achieving Net Zero in Bristol will require significant policy intervention<sup>6</sup>.

- A nearly 50% reduction in car miles and 40% reduction in van and lorry miles travelled in the city (returning them to levels seen in the mid 1980s). This would be driven by a significant effort to shift travel to public transport, cycling, walking (to a modal split more like Amsterdam) and to reduce demand for vehicle use through behaviour and system change, including freight consolidation and use of cargo and e-bikes, car-clubs and 'mobility as a service' initiatives.
- Switching almost all remaining vehicles (125,000 cf 220,000 now) to Ultra Low Emission Vehicles (mainly battery EVs), including an increased number of buses and reduced numbers of cars, lorries, and vans.
- Installation of an extensive private and public EV charging network with an appropriate mix of standard, fast and rapid chargers, a proportion of which are dedicated to car club and shared mobility services so that households do not need off-street parking to access a charged EV.

<sup>&</sup>lt;sup>6</sup> Centre for Sustainable Energy (2019) Bristol Net Zero by 2030: The Evidence Base. Link: <a href="https://www.cse.org.uk/downloads/reports-and-publications/policy/insulation-and-heating/energy-justice/renewables/behaviour-change/building-performance/">https://www.cse.org.uk/downloads/reports-and-publications/policy/insulation-and-heating/energy-justice/renewables/behaviour-change/building-performance/</a>
Bristol net zero by 2030 study CSE 26 Feb 2020.pdf



The UK Government's Decarbonising Transport Plan sets this out at a national level as well, and the types of policy interventions, or strategic priority areas, that are needed to achieve a target of Net Zero<sup>7</sup>:

- Accelerating modal shift to public and active transport;
- Decarbonisation of road vehicles:
- Decarbonising how we get goods;
- Place-based solutions for emissions reduction;
- The UK as a hub for green transport technology and innovation;
- Reducing carbon in a global economy.

These strategic priorities also reflect the fact that carbon intensity in transport is a system-wide issue. Whilst some policy interventions may have a bigger potential impact on carbon emissions, to achieve Net Zero requires a decarbonisation of all aspects of the transport system and its operation.

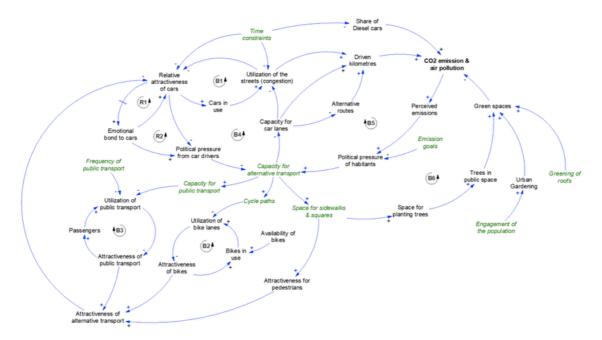


Figure 4 - Decarbonising the transport system, simplified - the case study of Paris8

This fact is developed upon by the Government's Climate Change Committee in its recommendations to the Department for Transport on short-term policy interventions that are likely to be needed to achieve Net Zero. This includes, but is not limited to<sup>9</sup>:

<sup>&</sup>lt;sup>7</sup> Department for Transport (2020) Decarbonising transport: setting the challenge. Link: <a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/932122/decarbonising-transport-setting-the-challenge.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/932122/decarbonising-transport-setting-the-challenge.pdf</a>

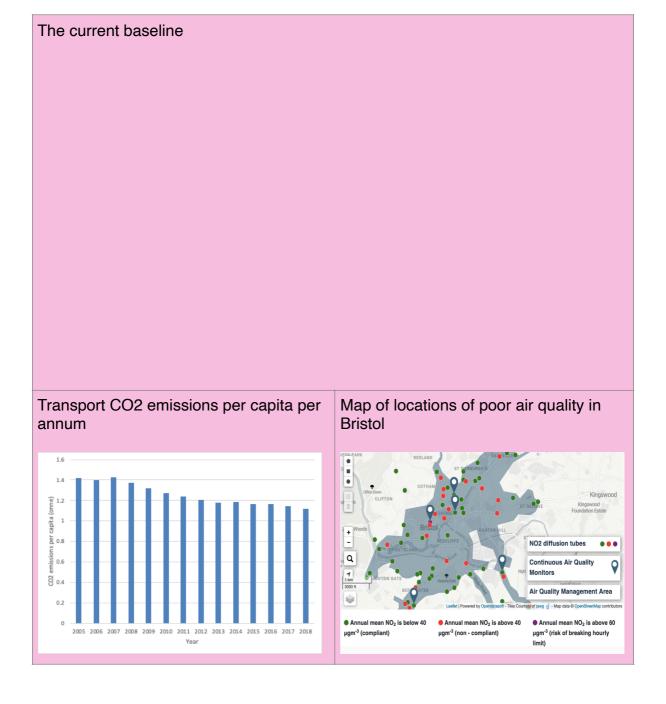
<sup>&</sup>lt;sup>8</sup> Wiek, G. (2019) Systems Mapping: How Paris meets Climate Change. URL: <a href="https://medium.com/systemic-design-group/systems-mapping-how-paris-meets-climate-change-664321d31f47">https://medium.com/systemic-design-group/systems-mapping-how-paris-meets-climate-change-664321d31f47</a>

<sup>&</sup>lt;sup>9</sup> Climate Change Committee (2020) Reducing UK Emissions: 2020 Progress Report to Parliament. Link: https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/



- Significantly investing in active travel, public transport, and other measures to reduce the total demand for car travel;
- Introduce a Zero Emission Vehicle Mandate, requiring that all new vehicle sales be zero emissions by 2032 at the latest;
- Establish a strategy to transition to zero carbon freight, including evaluating schemes to reduce the prevalence of HGVs and vans in urban areas;
- A target to have Net Zero aviation by 2050 at the latest;
- Set a target to reduce emissions from shipping.

Transport is also the most significant source of Nitrogen Dioxide (NO2) and Particulate Matter (PM). Across all of the measuring sites in the city, 80% are breaching legal limits of NO2 emissions. This is primarily on the major roads leading into and out of the city, including the A4, the A420, and A38. It is estimated that poor air quality is a factor in 5 premature deaths per week in Bristol.





#### **Policy Analysis**

#### Recommended policies

Wider evidence indicates that a strong mix of transport policies is necessary to decarbonise transport and improve air quality. The key elements of this are the following:

- Reducing travel demand overall, especially for longer distance trips and from the most affluent in society (who take more trips per annum compared to other sectors of the population)
- Effective use of pricing mechanisms to influence travel market behaviours. This is not only road user charging or parking charges, but also covers direct subsidies for purchasing decisions that reflects the needs of users
- The rapid deployment of enabling infrastructure for low carbon transport. This includes better cycle link, public transport priority, and roll out of electric vehicle charging technologies
- Behaviour change policies that enable influential rapid adopters of low carbon forms of transport to act as champions for behaviour change.

#### Current policies

The overall review of council priorities indicates that tackling climate change and poor air quality is a priority. The One City Plan, plans for improving air quality, and the Local Transport Plan invest in the following:

- Planned expansion of the Metrobus network, and to providing a highquality user experience
- Planned investment in bus priority on key corridors through quality partnerships, with similar plans for local rail improvements
- There is a policy commitment to encouraging more people to walk and cycle. The Local Cycling and Walking Infrastructure Plan sets out a plan for the delivery of strategic and local infrastructure
- Consultations have taken place on adopting a Clean Air Zone in Bristol, for which the most polluting vehicles will be charged for entering the most polluted areas of the city
- Expansion of electric vehicle charging infrastructure across the city

#### Commentary

From a policy perspective, all the main policy documentation contains ambitious commitments to prioritising low carbon forms of mobility. However, what is also notable is a significant investment planned in high carbon forms of transport. In particular, there are substantial upgrades planned for key junctions and roads across Bristol to cater for planned growth of the city. Upgrades that, whilst likely to also result in improvements for low carbon forms of transport, will expand capacity for vehicle traffic. Additionally, within transport policies specifically, no assessment is indicated as to the likely impacts on air pollution and carbon emissions. This is with the exception of the Strategic Environmental Assessment, that gives a high-level overview of likely environmental impacts.



#### Policy gaps

In terms of the major policy areas and priorities, the One City Plan and the Local Transport Plan can be said to at least cover the most major priority areas. The exception to this is meaningful action in reducing travel overall. Whilst the programmes of Travelwest, especially its work in reducing the travel impacts of business, does seek to encourage less travel for commuting purposes, there is no specific commitment to reduce travel demand overall.

The biggest gap between what is required and what is being delivered is a matter of priorities and perspective. This is especially the case on public transport. Whilst improving key corridors for public transport are welcome measures, there is little commitment to significant action in key areas of public transport policy. Within the policies there is little understanding as to why this is so, but feedback from the advisory group and wider participants in our study work indicates that this may be a matter of governance and funding priorities. For example, integrated ticketing requires collaboration between bus and rail operators, that is currently challenging in existing governance structures.

The use of charging mechanisms to discourage high carbon and high polluting transport modes is being explored through the Clean Air Zone. Additionally, financial subsidies are provided to install electric vehicle charging points (primarily through the Office of Low Emission Vehicles) and to purchase low emission vehicles. But little evidence has been demonstrated that other charging mechanisms, such as car parking and road user charging, are being considered as a means to reduce emissions and pollution from local transport sources.

With regards to enabling infrastructure, policy documents set out ambitious plans to improve walking, cycling, and bus infrastructure. However, the majority of these are uncommitted, with no funding allocated to their development and delivery.



#### Making it easier for those traditionally excluded to get around the city

#### **Summary**

Social exclusion manifests itself in a variety of ways. Physical exclusion is just one part of a wider exclusion issue in transport. People in Bristol can be excluded from using transport due to time, costs, feelings of vulnerability, social attitudes, lack of training of staff, and the availability of suitable transport options for them. At a policy level, tackling social exclusion is a core element of local policy making, but there is insufficient evidence that such issues are being tackled in a meaningful manner through transport delivery. TfGB's plans need to put the needs of the most vulnerable at their heart.

#### The current baseline

Social exclusion can take many forms, and has a variety of impacts on how people get around the city, impacts that vary between different people and different groups. Wider evidence shows that groups that are more likely to be excluded from using transport services, or for whom transport excludes them from accessing activities, includes those on low incomes, with physical disabilities, mental impairments, people from ethnic minorities, women, and the elderly.

Looking purely at journey times to major public services, the majority of the city is within a 10 minute journey time by public transport. Compared to the rest of the city, travelling from places in the south of the city such as Hartcliffe and Stockwood to access strategic public services such as hospitals takes longer than in equivalent areas of the city.

In terms of the number of people physically disabled according to the 2011 Census, 34,750 people in the city have their daily activities limited a lot, with a further 31,754 having their daily activities limited a little by their disability. Areas where there is a significant concentration of those who have their activities limited are Filwood, Kingweston, and Southmead. It is estimated that 14,600 children live in low income families in the city, while 10,100 people in the city are unemployed.

**Policy Analysis** 



#### **Recommended policies**

Reflecting the multi-faceted nature of social exclusion issues, the policy mix that is necessary is also necessarily complex. Recommended policies include:

- Adoption of the principle of universal design in the development and delivery of new services and infrastructure. This is specifically in terms of closely engaging with vulnerable groups in shaping the concept and design
- Support provided for public transport services to provide convenient access between major employment areas and public services and the most deprived areas of the city
- Reducing the cost of public transport for those with the most significant mobility issues
- The delivery of subsidised tailored transport solutions where 'traditional' transport cannot be adapted to serve specific mobility needs
- Delivery of policies that reduce the negative externalities of cardominated road transport, notably poor air quality, severance, and road traffic collisions

#### Current policies

All local policies recognise the diversity of population and the needs of people who live in Bristol.

- Commitment to a service design approach in creating new public services, focussing on close engagement with vulnerable people
- Embedding equality and inclusion into all aspects of service delivery, including enhancing equality impact assessments
- Investing in improving public transport services more generally, including expanding services and investment in new infrastructure and more accessible vehicles
- The adoption of service-specific policies to cater for specific mobility needs, including Home to School Transport and Adult Social Care
- Taking a systems approach to improving road safety
- Adopting a place-based approach to street improvements, that encourage social interaction and inclusive design

#### Commentary

Specifically within transport policies in the city, social exclusion is recognised as an issue, and inequalities in transport outcomes is recognised in the evidence base. There are specific policies that have been adopted in relation to statutory transport services such as Home to School Transport and Social Service Transport. There is also a wider public service duty, including through Equality Impact Assessments, towards making transport policies and services more equitable in outcomes. This duty does not extend to private operators, unless it is a requirement of a contract.



#### Policy gaps

A notable policy gap is in providing public transport that is affordable to those who are most socially excluded. This is not to say that there are not initiatives in place. Free Home to School Transport is provided to those who are eligible under national government criteria. There is also the National Concessionary Bus Pass for the elderly. Great Western Railway offer a discount card for universal credit claimants. However, these offers do not provide a comprehensive offering of affordability, or they are little known amongst those with the greatest need for them.

Whilst the concept of universal design has been long adopted in transport infrastructure design, there are still issues with it being delivered in practice. For example, 4 stations in Bristol still have no step-free access, with 6 being fully step-free and a further 5 only partially step-free. Similarly with highways, this is a consequence of the time needed to retrospectively upgrade transport infrastructure to meet modern accessibility requirements.

A notable barrier that is not considered is that of wider social attitudes towards those less able to get around easily. There have been marketing initiatives and campaigns to improve general awareness of the most vulnerable. The most notable is the It's everyone's journey campaign by the Department for Transport. The local public transport operators have also committed to provided dedicated training to staff for persons who have mobility issues who use their services. But there is no explicit commitment in local policy to changing wider social attitudes to make those who are more vulnerable feel more welcome on public transport.

Significantly, in local transport planning policies, there is no specific indicator or performance measure relating to improving accessibility for the most vulnerable.



#### Establishing a road user hierarchy that is delivered in practice

#### Summary

Delivering a sustainable transport network requires the prioritisation of different modes. In a general sense, this means the most sustainable being prioritised (walking, cycling, and public transport) with single occupancy car use being of lowest priority. All local policy states a general priority for sustainable travel, and is delivering major strategic upgrades to public transport. But this is within an environment that is not restricting car use, and delivering road capacity enhancements. TfGB plans for bus priority and rapid transit deliver against this, although improvements could be made to its traffic management plan

#### The current baseline

The overall picture is of a general increase in travel across all modes of transport prior to the COVID-19 pandemic. On public transport, the overall number of trips by bus in the city has increased from 28.1 million per annum in 2009/10 to 40.3 million per annum in 2019/20. The use of Bristol Temple Meads station – responsible for 85% of rail trips in Bristol – has risen from 6.5 million to 11.6 million in the same time frame.

The number registered cars in Bristol has remained stable. In 2009, there were 187,000 registered cars in Bristol, compared 183,000 in 2019. This compares favourably with other areas of the UK. Despite this, the estimated average delay has risen from 49 seconds per vehicle per mile to 51 seconds per vehicle per mile between 2015 and 2019.

The number of people cycling to and from work has risen from 10% to 11.35% between 2018 and 2019. Looking at journeys to work generally, whilst in Bristol city itself less than half of journeys to work are by car, this is not the case in the wider Combined Authority area. Additionally, commuting trips make up less than 20% of total trips in larger cities across the UK. The majority of other trips are undertaken by private car.



# Travel to work by mode of transport in Bristol Solve a similar size to Bristol in the UK \*Work at home \*Bus \*Train \*Cher public transport \*Motorycle, scooter or moped \*Car (driver) \*Bicycle \*Other \*Other \*Other public transport \*Motorycle, scooter or moped \*Car (passenger) \*On foot \*Other \*Other including just walk \*Other including just walk

#### **Policy Analysis**



#### Recommended policies

User hierarchies refer to a general policy approach that typically prioritises highway users according to the following general priority list:

- The needs of the most vulnerable, including children, the elderly, and people with mental and physical impairments.
- The needs of other pedestrians.
- The needs of cyclists, including ebikes, and potentially e-scooter users
- The needs of public transport users and operators
- The needs of shared transport that are not public transport (e.g. car clubs)
- The needs of taxi and private hire vehicle users
- The needs of businesses for servicing and deliveries
- The needs of powered two wheeled vehicles
- The needs of single-occupancy vehicle users

There is also a need for a clear consensus on these priorities that is delivered at all levels of decision making.

#### Current policies

Current transport policies in the area do not formally establish a hierarchy of transport users. There is a general policy priority towards sustainable transport in the Local Transport Plan, as well as in the Local Plan and the One City Plan.

Similarly, at a national level, there is no formal priority of road users. Instead, governance is guided by a number of key principles of equal footing to one another. This includes prioritising the needs of vulnerable road users.

#### Commentary

What there is insufficient evidence to make a conclusion on is decision making and the effectiveness of governance structures in taking decisions that prioritise investment in accordance with a road user hierarchy. This is largely as there is no wider benchmark as to what consists good governance with regards to transport, nor is there an assessment of what constitutes good outcomes. There is wider evidence that politics has an influence, and this is often driven by a lack of transparency in business cases, the quality of public engagement, and a political desire to make controversial decisions.



#### Policy gaps

In Bristol, evidence from the Advisory Board indicates that there is not so much a lack of policy that prioritises more sustainable transport modes, even if there is a lack of a formal road user hierarchy. It is the impact of governance and decision making that is inconsistent with the policies that have been adopted. It is recognised that compared to some other cities, Bristol has led in some areas such as Play Streets, but that this does not meet the level of ambition that is expected.

Feedback from stakeholders and wider research has indicated that this is a much wider issue. Common factors include the prioritisation of car travel in business cases through weighting of factors such as journey time savings, and a significant influence of national government policy that favours transport infrastructure invest as an economic necessity. With a significant proportion of local funding for transport being sourced from national government, this has a significant influence on local transport decision making.

There is some disagreement as to whether having a formal road user hierarchy is of benefit. Whilst it establishes a clear priority list when it comes to making decisions on investment, infrastructure priorities, and even design of new schemes, following this is not a statutory requirement. Only that decisions are made that are consistent with policy priorities. As we have been unable to obtain details on the factors that drive priorities and decision making frameworks within the local authorities and combined authority, we cannot confirm the degree to which adopted policies have a significant impact on investment decisions. Only to say that statutory documents should influence decision making to some degree.



## Operating public transport in an integrated manner, that makes public transport the default choice

#### **Summary**

Whilst the public transport network of Bristol is generally extensive in its coverage, it does not operate in an integrated manner. Existing plans and policies seek to promote the use of public transport, and does make strategic investments in public transport. But significant integration is only represented by a commitment to deliver Mobility as a Service. The TfGB plans provide for a comprehensive network, and focus integration on changing timings and integrated ticketing. But there is no commitment to providing the incentives needed for operators to favour integrated arrangements.

#### The current baseline

The overall number of trips by bus in the city has increased from 28.1 million per annum in 2009/10 to 40.3 million per annum in 2019/20. The use of Bristol Temple Meads station – responsible for 85% of rail trips in Bristol – has risen from 6.5 million to 11.6 million in the same time frame.

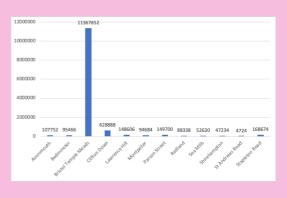
When surveying passengers, there is an overall satisfaction with public transport services. 86% of bus passengers are satisfied with local buses, with 86% finding easy to get a seat and 80% satisfied with journey times. Although only 50% consider service good value for money. On Great Western Railway – the main local train operator – 86% of passengers are satisfied with services in the west, with 89% satisfied with the train and 85% at the level of crowding. Although 63% are satisfied with the price of tickets.

But when expanding satisfaction out to the general population, satisfaction generally decreases. In 2018, only 48.1% of local residents of Bristol were satisfied with local bus services. Additionally, local people have indicated that improving local bus services is their number 1 priority in improving local quality of life.

Use of local bus services in Bristol



Use of local rail services (passengers per annum)





#### **Policy Analysis**

#### Recommended policies

Wider practice indicates that there are a significant number of recommended policies that support an effective integrated transport system:

- Focussing the delivery of passenger transport services on user expectations
- Aligning the objectives of different transport providers
- Making public transport interchanges easy to navigate, and as seamless to use as possible
- Reducing vehicle delays for public transport through priority measures and efficient dwell times at stops
- Creating multi-operator ticketing that is simple to use and understand, including simplification of fare structures
- Committing operators to operating services in a manner that maximises accessibility and coverage with frequent services, even if it means regular interchanges
- A commitment to comprehensive and legible multi-modal travel information, especially using technology based on transport open data
- Establishing a clear vision for comprehensive integrated planning and transport within a city
- The effective integration of transport and land use planning decision making

#### Current policies

All local transport policies have a commitment to providing a comprehensive, and integrated public transport offering. In many of the areas, there is a commitment to delivering on such a policy commitment. This includes:

- Investing in improving information on public transport, through the continuing use of the Travelwest branding and opening up data on local transport operations
- Investing in improving bus journey reliability through bus corridor improvements on all major routes into and out of the city
- Continuing support and expansion of Metrobus services across the city
- Through the development of the Local Transport Plan and a new planning policy framework at the strategic level at the Combined Authority, to better align decisions on transport and land use policies
- Both the Local Transport Plan and Local Plan containing complimentary policies on improving accessibility by public transport, and providing public transport in new developments



#### Commentary

Many of these decisions, and the ability to affect change, are closely related to governance and control of public transport systems. The UK has a deregulated bus passenger and taxi market, and a more centralised and regulated passenger rail market. In Bristol, with the exception of promotion, subsidising services, and the Metrobus, the local authorities have a limited role in governance and regulation of the passenger transport network. Local authorities do have the power to more closely regulate passenger transport services, but it is a legal option that has yet to be exercised.

#### Policy gaps

One of the most significant policy gaps in current plans is providing a comprehensive and accessible offer. Current policy generally supports commercially operated public transport services which provide a frequent service on radial routes, with little emphasis on improving accessibility across the city. It should be noted that this does not mean providing any orbital bus services, but about ensuring that a frequent network that minimises journey and interchange times. This makes the city more accessible by public transport.

For multi-operator ticketing, it is a mixed picture across the city. There are a number of multi-operator tickets offered in the city, including the Freedom Pass, AvonRider, PlusBus, and Bristol Zone. Many of these can be loaded onto the Travelwest Travelcard. But engagement through the Advisory Group indicates that what is required is multi-operator ticketing. What instead this indicates is that there is a requirement to provide a single, simplified fare structure across the city. There is no policy commitment locally to such a concept.

The integration of land use planning and transport was also noted as an issue by several stakeholders. At a policy level, the Local Transport Plan and Local Plan seek to achieve the same sustainable travel objectives. However, what is uncertain is to what degree that is driving decision making. For example, if a new development reduces contributions to public transport, but constructs a new road based on the issue of development viability, then would such a development be permitted? This is uncertain from our understanding of the operations of the current framework.



### The transport network does not put the needs of users first, especially the most vulnerable

#### Summary

There is little evidence of a comprehensive understanding of the needs of users of the transport network across Bristol. General satisfaction is measured, and the development of some profiles has been undertaken as part of behaviour change work, but otherwise there is little evidence that user need is driving transport decision making. Any such evidence is at a political level, and is limited in scope. All policies, including TfGB's, make mention of a need to be user-centred, but without defining who the key users are, what their needs are, and how understanding them is driving decision making.

#### The current baseline

The Bristol Quality of Life Survey tracks satisfaction with a number of transport issues locally. 48.1% of local residents are satisfied with local buses, reducing to 42.5% in the most deprived wards. 77% of residents consider traffic congestion to be an issue locally. A similar percentage consider poor air quality to be a significant local issue, reducing to 66.7% in the most deprived wards in the city.

The annual Travelwest survey indicates a wide variation in satisfaction with journeys to work based on mode of transport used. 46% of public bus users were satisfied with their journey, compared to 87% who walk and 77% who cycle.

The UK Traveller Needs Study identified 5 user personas of current travellers on the UK transport network, and the opportunity for new technologies to serve them. Progressive Metropolites are technology-savvy young professionals living in the heart of the city who need the latest technologies to live. Default motorists are high mileage drivers who do so out of necessity and choice. Dependent passengers rely on others to help them get around, without whom they are excluded. Urban riders use public transport most of the time. Local drivers make a lot of local trips by car, and are generally retired. There is no data on the relative proportions of the local population of Bristol are within each group.





**Policy Analysis** 



#### Recommended policies

Putting the needs of transport users has become an increasing policy priority on its own in recent years. However, a number of policies can enable a usercentred approach to transport delivery to be realised:

- The adoption of the principle of universal design to the development and delivery of new transport infrastructure and services
- Taking account of the needs of future generations when assessing transport priorities and investment plans
- The development of a variety of user personas with which to prioritise investment, and judge the suitability of individual transport projects at meeting a variety of user needs
- The delivery or targeting marketing and promotions to specific user personas and types
- The establishment of a clear set of service principles against which new technologies and services can be assessed for their suitability in meeting user needs, and against which funding priorities can be delivered
- The delivery of a meaningful programme of public engagement and consultation into transport priorities, where decision making is devolved to users as much as is feasible.

#### Current policies

Current policies generally do not focus specifically on identifying user needs and having user needs as a specific policy priority.

All local policy documents contain detailed analysis of the local population and local trips. In addition to this, the Local Transport Plan contains evidence of the different trip patterns of different populations, such as those in deprived neighbourhoods. There is also a substantial evidence base in 'Essential Transport Evidence' that summarises the needs of some users.

More widely, user-centricity is seen not as a policy goal, but as an approach and process. Service design has been adopted as an approach to the delivery of Bristol's digital infrastructure, and has been adopted by policy makers in central government.

All local policy documents state that they have been publicly consulted upon, and that a variety of engagement methods were adopted through this process. The results have been several thousand responses being submitted to major consultations such as the Local Transport Plan.

#### Commentary

User-centricity is often spoken about locally by different providers and operators. Many of them are likely to have their own customer service metrics and processes that are not publicly available. Only Travelwest makes mention of the fact that the results of its annual survey are shared widely with all operators.



#### Policy gaps

In our engagement with stakeholders, especially through the Advisory Group, there is a general message that the users of transport are not considered or listened to in operational delivery. But this indicates not a failure of policy, but a failure of delivery. Evidence from the National Bus Passenger Survey and National Rail Passenger Survey shows that people are the most dissastisifed with how operators deal with issues as they arise. While 14.6% of local residents agree that they can influence the decisions of the Council.

This is also reflected in the fact that user-centricity is considered as an approach, and not as a policy goal in itself. Approaches such as service design and open policy making have become increasingly popular as methods of delivering public services since the adoption of the Government Digital Service in 2011. There is currently no evidence on the extent to which this has been adopted as an approach to delivering transport services in the city.

There is no public evidence on the effectiveness of public engagement in transport in the city, with the exception of the evidence on influencing the decisions of the Council presented previously. However, the local authorities have adopted new technologies as approaches to delivering public engagement. This is notably the use of the Commonplace platform to seek ideas for improvements to infrastructure and services.



#### **Detailed neighbourhood analysis**

This review considered the following policy documents as published by Transport for Greater Bristol:

- A Rapid Transit Plan for Bristol and Bath<sup>10</sup>
- Bristol Traffic Management Plan
- Bristol Parking Plan
- Bus Plan (Draft)

This review utilises the same method as was used for assessing the current policy and evidence baseline. Additionally, the TfGB plans were assessed in comparison to the existing policy position in each of the challenge areas identified previously. This analysis is based upon the plans as written currently, and is based upon the professional view of the author. Where there were difficulties in performing a direct comparison between the TfGB plans and the current policy position these have been noted.

One significant challenge was comparing the scale and types of documents and plans. For the current policy position, this constitutes a comprehensive suite of documentation from government at all levels, as well as planning, local authority, and economic development statutory documents. This compares against the TfGB plans which are necessarily focussed on transport operational matters. Where possible, when making direct comparisons between policy documents and the transport evidence base, this focussed on transport policy – notably the Joint Local Transport Plan and the Local Cycling and Walking Investment Strategy. Where there were variations in this, this is noted in the analysis.

<sup>&</sup>lt;sup>10</sup> This document is currently being reviewed



# Achieving net zero emissions from transport and reducing air pollution in the city

Policy area	TfGB plans assessment	Comparison to existing policies
Reducing travel demand overall, especially for longer distance trips and from the most affluent in society (who take more trips per annum compared to other sectors of the population)	No mention is made in any of the strategy documents of the need to reduce overall travel in the city. However, there is a commitment in all of the documents to reduce the amount of car travel in the city.	There is no explicit commitment to reducing overall travel demand. The assumptions in the transport strategy, and in the local plan, assume that there is an overall growth in trips arising from planned development in the city. There is also commitment to increasing the total number of trips by bicycle, on foot, and on public transport.
Effective use of pricing mechanisms to influence travel market behaviours. This is not only road user charging or parking charges, but also covers direct subsidies for purchasing decisions that reflects the needs of users	The Parking Plan has a commitment to the introduction of controlled parking zones and workplace parking levies. The plan also proposes the introduction of parking charges at retail centres.	No specific mention is made of the benefits or otherwise of a pricing-based approach. There is policy support for the introduction of electric vehicle charging points, supported by government subsidies.
The development of a variety of user personas with which to prioritise investment, and judge the suitability of individual transport projects at meeting a variety of user needs	There is no evidence that this has been undertaken in the development of these plans.	There is no direct evidence that this work has been undertaken in the development of these plans. Though the plans do provide an evidence base of the key demographics of the city and their typical transport behaviours.



Policy area	TfGB plans assessment	Comparison to existing policies
The rapid deployment of enabling infrastructure for low carbon transport. This includes better cycle link, public transport priority, and roll out of electric vehicle charging technologies	Each plan contains a detailed assessment and plans for creating an improved public transport service offering. This ranges from bus priority measures to new tram infrastructure. The plans also mention the need to identify and improve walking and cycling links to and from bus stops and tram stops.	The strategies contain a comprehensive programme of infrastructure upgrades across all modes of transport. This includes delivering walking and cycling infrastructure, delivering strategic bus priority measures, improving Metrowest, and the roll out of electric vehicle charging points. This also includes upgrading key highways and junctions to boost road traffic capacity.
Behaviour change policies that enable influential rapid adopters of low carbon forms of transport to act as champions for behaviour change.	Little mention is made of developing and delivering a comprehensive behaviour change programme to support key infrastructure improvements. The plans do commit to improving the quality of local public transport information.	The Local Transport Plan and the Local Cycling and Walking Investment Plan has a commitment to delivering travel behaviour changes initiatives under the Travelwest branding. But there is no commitment to a specific method of engagement or commitment to the development of champions outside of specific initiatives, e.g. school travel.



Policy area	TfGB plans assessment	Comparison to existing policies
The adoption of the principle of universal design to the development and delivery of new transport infrastructure and services	The plans do make mention of the need for new and existing transport infrastructure and services to be accessible to all. Particularly in terms of 'returning to place' that is a common theme within all the plans. But there is no explicit commitment to the principle of universal design.	There is no explicit commitment to the principle of universal design anywhere in the transport strategies. But there is a commitment to designing transport schemes for all, and to tackling issues such as social exclusion.
Support provided for public transport services to provide convenient access between major employment areas and public services and the most deprived areas of the city	The Bus Plan contains plans to establish orbital bus networks to provide linkages across the city	Planned Metrowest extensions are intended to improve accessibility to employment areas across Bristol. There are also policies that generally support the provision of supported bus services where feasible.
Reducing the cost of public transport for those with the most significant mobility issues	The Bus Plan and Rapid Transit Plan place an emphasis on providing integrated ticketing, but this is not worked up in detail. The plans also state that their proposals will improve the 'economics' of running public transport services, without further explanation.	There is no specific plan to reduce fares. However, there is a proposal to develop a Mobility as a Service-style offering to compliment existing integrated ticketing.
The delivery of subsidised tailored transport solutions where 'traditional' transport cannot be adapted to serve specific mobility needs	The Bus Plan makes mention of the potential role of Community Transport in filling some gaps in the trunk and orbital routes identified in the plan. Otherwise, no mention is made of specific mobility needs.	The Local Transport Plan supports the provision of tailored and demand responsive public transport services. More specific policies on Home to School Transport and Social Care transport are referenced.



Policy area	TfGB plans assessment	Comparison to existing policies
Delivery of policies that reduce the negative externalities of car- dominated road transport, notably poor air quality, severance, and road traffic collisions	All of the policy documents presented seek to reduce car dominance in the city. Though this is primarily focussed on improving public transport, better highway management, and improving parking.	A significant number of policies are identified that, if delivered, could reduce the impact of car dominance in the city. However, the Local Transport Plan and Local Plan contain plans to expand highway capacity.

# Operating public transport in an integrated manner, that makes public transport the default choice

Policy area	TfGB plans assessment	Comparison to existing policies
Focussing the delivery of passenger transport services on user expectations	The development of all of the policy documents states that it has the needs of current and potential public transport users at heart. But this is not translated into a delivery approach for services.	There is a commitment in several strategies to designing transport schemes for all, and to tackling issues such as social exclusion.



Policy area	TfGB plans assessment	Comparison to existing policies
Aligning the objectives of different transport providers	The Bus and Rapid Transit Plans make reference to the commercial priorities of public transport operators compared to the general 'public good' of local authorities. But this is noting this matter as an issue, as opposed to making a specific commitment to aligning objectives.	All policies and strategies have a commitment to work in partnership with a variety of organisations to deliver transport improvements. In the Local Transport Plan, some external organisations are identified as collaborators or leading on specific projects.
Making public transport interchanges easy to navigate, and as seamless to use as possible	The development of bus hubs identifies a number of key service and design principles by which they should operate. This also includes a variety of transport modes with which they should integrate.	The Local Transport Plan has a commitment to the development of mobility hubs across the city, to improve transport interchanges between modes. This mainly focusses on the physical design of the interchanges and the services offered.
Reducing vehicle delays for public transport through priority measures and efficient dwell times at stops	The Bus and Rapid Transit Plans identify a number of key corridors on which priority measures for public transport should be delivered. This is supported by measures in the Traffic Management Plan to reduce the amount of car traffic overall.	Plans are identified for a number of bus priority corridors, and the expansion of Metrowest.
Creating multi-operator ticketing that is simple to use and understand, including simplification of fare structures	The Bus and Rapid Transit Plans identify a general need for integrated ticketing as a means to improve bus operations, specifically reducing dwell times at stops. Otherwise, there is little detail.	The Future Transport Zone commits to trialling a new Mobility-as-a-Service style solution to provide integrated ticketing. Existing integrated ticketing arrangements will also be supported.



Policy area	TfGB plans assessment	Comparison to existing policies
Committing operators to operating services in a manner that maximises accessibility and coverage with frequent services, even if it means regular interchanges	The Bus and Rapid Transit Plans identify a potential route network for trams and buses, including the addition of orbital bus routes. This includes some operational details such as the routes themselves and desired frequency of service.	There is no specific vision for the future shape of the bus network in the city, outside of the expansion of Metrowest.
A commitment to comprehensive and legible multi-modal travel information, especially using technology based on transport open data	The Bus Plan states a commitment to providing clear bus information that is based on user needs. But these needs are currently defined as the times of buses, frequencies, and fares.	The Future Transport Zone seeks to provide an open data store, so that public transport and other transport information is provided to a consistent standard. There is also support among all policy documents for the work of Travelwest as a single brand for promoting public transport in the city.
Establishing a clear vision for comprehensive integrated planning and transport within a city	The plans themselves seek to provide a clear vision for integrated public transport in the city.	The Local Transport Plan commits to providing an integrated transport system, and proposes a suite of transport measures that aims to deliver this vision.
The effective integration of transport and land use planning decision making	All of the plans mention a general requirement to integrate with planning. This is most notable in the Parking Plan, which proposes stricter limits on parking provision in new developments.	The Local Transport and Local Plans contain mutually-beneficial aims and objectives. The Local Transport Plan also factors in planned growth in the city in establishing its baseline and future investment plans.



## The transport network does not put the needs of users first, especially the most vulnerable

Policy area	TfGB plans assessment	Comparison to existing policies
The adoption of the principle of universal design to the development and delivery of new transport infrastructure and services	The plans do make mention of the need for new and existing transport infrastructure and services to be accessible to all. Particularly in terms of 'returning to place' that is a common theme within all the plans. But there is no explicit commitment to the principle of universal design.	There is no explicit commitment to the principle of universal design anywhere in the transport strategies. But there is a commitment to designing transport schemes for all, and to tackling issues such as social exclusion.
Taking account of the needs of future generations when assessing transport priorities and investment plans	The plans do not make this explicit connection outside of a general direction of better transport planning for the future. However, there is mention in the Bus Plan of the need for improved bus services to better serve younger people.	Existing transport policies have explicit transport policies that seek to better serve the needs of young people, notably the Home to School Transport policy and the Sustainable Modes of Travel to School strategy. But these are focussed on their current needs, and not anticipating their future needs.
The development of a variety of user personas with which to prioritise investment, and judge the suitability of individual transport projects at meeting a variety of user needs	There is no evidence that this has been undertaken in the development of these plans.	There is no direct evidence that this work has been undertaken in the development of these plans. Though the plans do provide an evidence base of the key demographics of the city and their typical transport behaviours.



Policy area	TfGB plans assessment	Comparison to existing policies
The delivery or targeting marketing and promotions to specific user personas and types	The plans are largely operational. The Bus Plan and Rapid Transit Plan contains a priority of providing user-friendly public transport information.	Local policies contain a commitment to providing high quality information both offline and online. There is also a general commitment in the Local Transport Plan to supporting behaviour change initiatives, and supporting the continuation of the Travelwest branding and campaign.
The establishment of a clear set of service principles against which new technologies and services can be assessed for their suitability in meeting user needs, and against which funding priorities can be delivered	The use of new technologies are briefly mentioned in the Bus Plan and Rapid Transit Plan as part of improving the customer experience. Notably in terms of providing better quality information to passengers. In the Traffic Management and Parking Plans, mention is made of the potential of traffic management technologies to improve bus journey times and economics.	Current plans include the delivery of the Future Transport Zone. This £24 million investment commits to improving accessibility of employment for people on low incomes. Otherwise, no other service design principles are specifically mentioned.
The delivery of a meaningful programme of public engagement and consultation into transport priorities, where decision making is devolved to users as much as is feasible.	All plans make mention of the fact that the plans have been developed with engagement of volunteers and local people. The documents claim to be a "citizen-centred" approach to the delivery of transport strategy in the city.	There is evidence of extensive engagement, but to what degree this has influenced policy making is uncertain. All of the transport policy documents state that there has been extensive community engagement as part of the development of the policies. The Local Transport Plan mentions that over 6000 responses were received.



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