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TRANSPORT



› REPORT

# TRANSPORT AUTHORITIES FOR METROPOLITAN AREAS: THE BENEFITS AND OPTIONS IN TIMES OF CHANGE

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## FOREWORDS

UITP works to enhance quality of life and economic well-being by supporting and promoting sustainable transport in urban areas worldwide. We are convinced that a comprehensive, integrated and environmentally friendly way of moving around will contribute to the appeal of the metropolitan areas. As the International Association of Public Transport, UITP is excited to participate in this valuable report.

Along with the ongoing issue of climate change that our sector has played a key role in combatting, public **transports** involvement will also be vital in the recovery of the economy and society in a post-COVID 19 world and in a Volatile, Uncertain, Complex, and Ambiguous environment known as VUCA. In order to reach these objectives, **combined efforts will need to be concentrated on promoting the sector and ensuring that trust is regained among the general public.** However, this will not be possible without the planning and organisation of strong transport and mobility authorities. It is in the interest of all citizens and cities to create and empower such organisations.

**The role of an Authority is central in that context.** It is key in ensuring the public transport service is provided with public policy goals in mind and considering the citizens' expectations. The Authority's role varies from being a market facilitator - in the case of a deregulated environment - to the governing body with clear responsibilities in terms of transport strategy, planning and organising operations by contracting operators for the provision of public transport services.

Authorities should be positioned so that transport evolves from a fully market-oriented to an integrated approach, having in mind that a middle ground will certainly be needed during the transition. In such a context, **Authorities will ensure – thanks to clear goals and optimal means/funds effectively available – that the best transport supply is provided,** that a stronger and more resilient supply sector than ever before is in place and that climate change remains at the top of the agenda.

UITP will continue its work to support the improvement of the governance of urban mobility by promoting the benefits of Authorities, as a way to **ensure a thriving, sustainable, and resilient industry.**



**MOHAMED MEZGHANI**  
UITP SECRETARY GENERAL

In an uncertain and warming world, the challenges faced by metropolitan areas are more daunting and complex than ever. Ensuring transport systems can respond effectively to the challenges ahead is leading to more metropolitan areas around the world looking at the governance of their transport networks.

The aim of this report is to provide the reader (including those who do not work in the transport sector but who have a wider interest in city region governance) with a **clear and well evidenced guide to the benefits of having transport authorities for metropolitan areas**. It also seeks to provide guidance on the options for the formats that transport authorities can take and how best to address the challenges of transition.

I would like to thank colleagues at the Organising Authorities Committee of UITP (in particular the chair, Tom Page) for their support and input on this project as well as their patience (given how the COVID response took my time away from completing this project).

Particular thanks are due to Emmanuel Dommergues, Head of the Mobility Governance Unit at UITP, for his commitment and support. The report was strongly influenced by earlier work by Måns Lönnroth as well as by the World Bank (see section 'Further reading and sources') which provided inspiration on how to frame what is potentially a sprawling topic and for which I owe a debt of gratitude.

Finally, I hope this report can play a **helpful role in the ongoing task of improving the governance of urban transport around the world** – a process that more widely I and the Urban Transport Group also hope that we can continue to make our contribution to.



**JONATHAN BRAY**

DIRECTOR OF THE URBAN  
TRANSPORT GROUP

Author of the Report

## INTRODUCTION AND BACKGROUND

*Given the huge and complex transport challenges that metropolitan areas around the world are facing, many are looking at how they can plan and operate transport in the future in a more coordinated way.*

*The aim of this report is to provide an accessible and non-technical guide to the benefits of establishing metro area transport authorities, issues to be aware of in doing so and the options for the different forms they can take.*

*The report also examines four key contemporary challenges for both new and existing transport authorities: the climate imperative; new business models and mobility formats; fairness and social justice; and the triumph of place.*

*Finally the report provides advice on how to meet the challenges of transitioning to more empowered transport authorities as well as further reading.*

## CITIES AND METROPOLITAN AREAS IN THE TWENTY-FIRST CENTURY<sup>1</sup>

Some 55% of the world's population (4.2 billion people) live in cities. This trend is expected to continue so that by 2050 the urban population will have more than doubled, with nearly seven out of ten people in the world living in cities. Cities are also the drivers of the global economy generating 80% of its GDP.

However, this rapid urbanisation brings with it considerable challenges including housing need (nearly one billion people live in informal settlements in urban areas); environmental pressures (such as the supply of water and food); and sprawl.

Urban sprawl is outpacing population growth by as much as 50%, and is expected to add 1.2 million km<sup>2</sup> of urban development over 30 years. Such expansion puts pressure on land and natural resources with cities now accounting for two thirds of global energy consumption and more than 70% of greenhouse gas emissions.

At the same time, almost half a billion urban residents live in coastal areas, increasing their vulnerability to storm surges and sea level rises associated with climate change. In the 136 biggest coastal cities, there are 100 million people – or 20% of their population – exposed to coastal floods. Around 90% of urban expansion in developing countries is near hazard-prone areas and built through informal and unplanned settlements.



<sup>1</sup> <https://www.worldbank.org/en/topic/urbandevelopment/overview#1>

## TRANSPORT'S ROLE IN SUPPORTING METROPOLITAN AREA ECONOMIES

If cities and metropolitan areas are the engines of national economies, then transport is the wheels for that engine. Urban economies cannot function without transport. Public transport and active travel can also help address the wider challenges that cities and metropolitan areas face including:

- Addressing social exclusion by providing affordable, acceptable, accessible and available access to opportunity
- Reducing carbon emissions and air pollution
- Contributing to wider urban climate resilience
- Supporting urban economies by reducing congestion and making better places that people want to spend time in

### THE NEW URBAN AGENDA HABITAT III <sup>2</sup>

In October 2016, governments agreed on 'The New Urban Agenda' as the outcome document of the Habitat III cities conference in Quito, Ecuador. It provides a bold vision on urban development and covers, among many issues, the role of sustainable mobility.

It includes the following commitments:

'We will promote access for all to safe, age and gender-responsive, affordable, accessible and sustainable urban mobility and land and sea transport systems, enabling meaningful participation in social and economic activities in cities and human settlements, by integrating transport and mobility plans into overall urban and territorial plans and promoting a wide range of transport and mobility options, in particular through supporting:

- A** A significant increase in accessible, safe, efficient, affordable and sustainable infrastructure for public transport, as well as non-motorised options such as walking and cycling, prioritising them over private motorised transportation;
- B** Equitable "transit-oriented development" that minimises the displacement, in particular, of the poor, and features affordable, mixed-income housing and a mix of jobs and services;

- C** Better and coordinated transport and landuse planning, which would lead to a reduction of travel and transport needs, enhancing connectivity between urban, peri-urban and rural areas, including waterways; and transport and mobility planning, particularly for small island developing States and coastal cities;
- D** Urban freight planning and logistics concepts that enable efficient access to products and services, minimising their impact on the environment and on the liveability of the city, and maximising their contribution to sustained, inclusive and sustainable economic growth.

## THE CHALLENGES OF URBAN TRANSPORT

The challenges of urban transport are many and varied (and are covered in more detail in the rest of the report) but they include getting the balance right between:

- spending available resources on maintaining existing infrastructure and expanding that infrastructure
- facilitating different types of journeys made by different types of people
- funding raised from the users of public transport networks and funding raised from taxation and other sources
- Competition and regulation in the public interest

In essence all these challenges are about addressing complex questions and making trade-offs with finite resources and in the context of serving urban areas which are constantly dynamic and evolving.



<sup>2</sup> United Nations (2017) New Urban Agenda, available: <https://habitat3.org/wp-content/uploads/NUA-English.pdf>

## HOW IS TRANSPORT BEST ORGANISED TO MEET THE NEEDS OF METROPOLITAN AREAS?

If cities are key to the future of the nations in which they sit, and transport is key to the effective functioning of those cities, then the urgent question which this report focuses on is how is transport best organised to achieve this?

The report explores this through examining the issues and options open to those who are considering next steps on the governance of transport in their metropolitan area.

It does this by setting out the benefits of having a transport authority for a metropolitan area (and sets out practical examples of how these benefits have been realised in different contexts around the world). Having established the range of benefits it goes on to explore different formats for transport authorities and their advantages and disadvantages. It then examines four contemporary challenges in urban transport governance – the climate imperative, social justice, transformative technological change, and ‘the triumph of place’. Finally, it discusses some key considerations in establishing a transport authority.

## CONTEXT AND COMPLEXITY

### No ‘one size fits all’

This report does not seek to promote a single ‘one size fits all’ recommendation on the best format for transport governance in metropolitan areas because to do so would be to ignore the reality of the distinctive historical, cultural, political and geographical context in which transport governance sits in each metropolitan area.

The deeper you dive into the governance of transport in different metropolitan areas the more complexities are uncovered and the more difficult it is to establish simple taxonomies. So, some authorities which may appear to be at the ‘maximalist’ end of the spectrum can, on closer examination, share characteristics which are more commonly associated with those authorities which may appear to be at the ‘minimalist’ end.

Furthermore, just as city region economies are fluid and dynamic, so are the governance arrangements for their transport networks.

### Historical context (politics, power, history)

The governance of urban transport systems necessarily is a product of wider arrangements for the governance of metropolitan areas.

These in turn are embedded in far wider commonly held national conceptions and legacies which can vary significantly between nations. These include:

- the relationship between the role of the state and the private sector (for example the US view of the role of the state and the private sector in the economy is very different from that held in China or Germany)
- the relationship between the roles of national and sub-national Government (strong nation state verses strong states within nations)
- powerful legacies, such as communism or colonialism, which can exert a strong influence over present day views of the role of Government (both national and sub-national).
- the strength of, and degree of trust in, public institutions.

Transport may also have played a key role in wider social or political change within a nation (from civil unrest triggered by public transport fares rises in South America, to transit’s role in civil rights protests in the United States) which continues to influence the governance of urban transport today.

It is not therefore possible to treat cities and nations as blank canvasses on which a format for governance can easily be imposed which is implicitly based on that of places with very different histories or shared conceptions.



### Geographic and spatial complexity

Cities can be stand-alone and be made up of concentric rings (city centre, inner suburb, outer suburb, rural hinterland) – as they are often portrayed in geography textbooks for school children. Alternatively, they can be part of complex polycentric conurbations where one city may be dominant (such as the Yangtze River Delta) or where no city is dominant (such as the Rhine-Ruhr conurbation in Germany).

Cities can be sprawling with no single, central, dominant urban core (such as Los Angeles) or they can be dense and contained by their physical geography (such as Hong Kong). Cities can have an economic pull which extends far beyond their built-up area or their pull can be limited

by geography or by other urban centres. For polycentric conurbations the patterns of economic gravitational pull on the hinterlands can be more complex.

Cities can occupy a tiny proportion of the land mass of the nations within which they sit (in Russia or Canada for example) or they can be the country (for example in the case of city states like Singapore).

Furthermore, cities can be major population and economic centres but not be national or regional capitals (such as New York).

Adding to this complexity, metropolitan areas themselves are also in constant flux. Their populations rise and fall, their economic bases wax and wane, their built-up area expands or is shaped by policy instruments like land use planning or by physical geography like seas and mountains. Their wider economic pull is also constantly changing. In short, Metro areas are 'fluid and they are open'.<sup>3</sup>

### Wider metropolitan area governance

As we observed earlier, governance of transport in metropolitan areas does not occur in isolation from wider governance in those areas. Governance of metropolitan areas around the world is characterised by both a diversity of formats and by the complexity of those arrangements (and the more you dig into the detail the more complexity can be uncovered).

Here we explore key dimensions to the diversity and complexity of governance arrangements for city regions.

**The degree of devolution and autonomy a metropolitan area has in relation to its national government.** This is often a reflection of national historical context and strongly embedded common conceptions. There can also be different levels of independence from national government in different areas of competence – such as on taxation, financing and decision making.

**The extent to which a city region can raise its own income.** Some metropolitan areas can raise funding from one or more of a range of sources which can include local taxes; land ownership and development; bridge and tunnel tolls; and revenue generating assets like airports. Whereas other metropolitan areas are more dependent on revenue funding from their national governments.

**The relationship between city region governance and constituent local area governance / wider state governance.** There are many different permutations of the relationship between local, city, city region, regional and national government. And, in some nations, some of these tiers may not exist. The relative responsibilities and powers of these different tiers of governance can also vary considerably as can the powers which each tier exercises over another tier.

**Role of regulatory bodies.** Regulatory bodies (with different degrees of independence from national or sub-national government) may also play a role. This includes in relation to the regulation of safety and of competitive markets.

**Potential for strong leadership by a Mayor or other forms of political leadership.** Some metropolitan areas may have forms of governance which enable an individual (usually a Mayor) to exercise considerable power and influence to drive forward rapid change – including on transport.

**Fluidity.** Just as cities and metropolitan areas have fluid and dynamic economies and roles, their governance can also evolve including in response to changes in politics and popular demand or in response to new economic, environmental or social challenges.

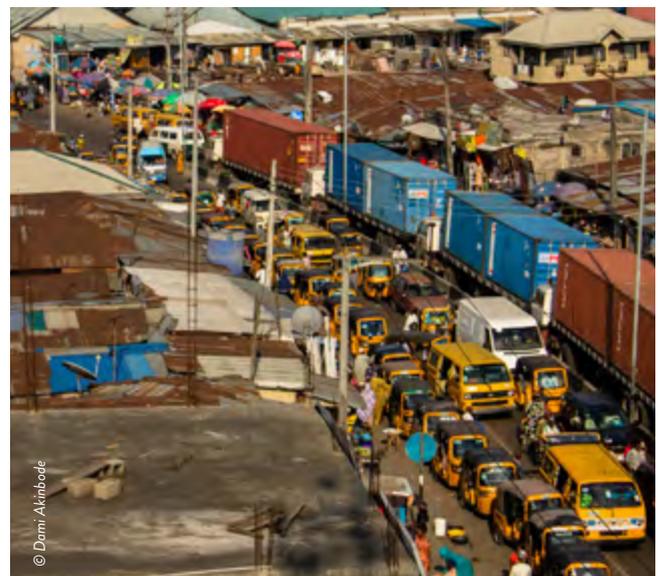
In some ways, current formats for governance will always be works in progress (or 'yesterday's solution to yesterday's problems') given the pace of change.

### Same issue, different challenges

The same issue can play out completely differently in different parts of the world.

So, for example in Latin America, a key challenge is determining the policy response to the major role that shared, demand responsive transport (like minibuses) currently plays. Whilst in Western Europe a key challenge is determining the policy response to the potential to expand the very minor role that shared, demand responsive transport (like minibuses) currently plays.

Or, a further example, in rapidly expanding cities like Lagos, the challenge is dealing with ever growing demand for public transport - whilst in many US cities the challenge has been dealing with declining demand.



<sup>3</sup> Volvo Research and Education Foundations Governance of Metropolitan Transport, a synthesis by Måns Lönnroth (vref.se)

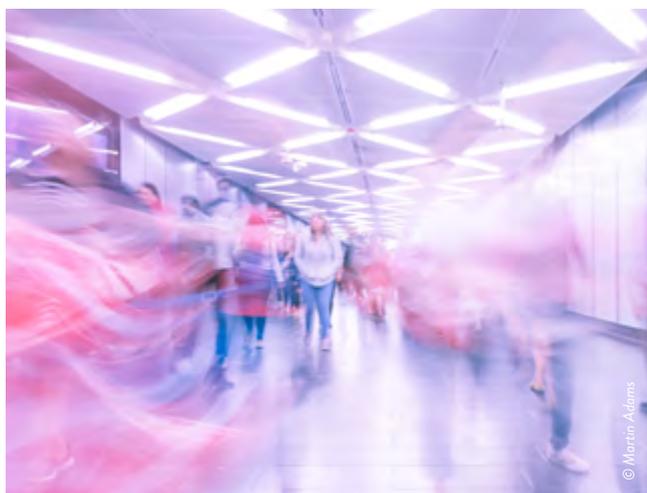
## THE BENEFITS OF A METROPOLITAN AREA TRANSPORT AUTHORITY

We have demonstrated above that there is no ‘one size fits all’ for the governance of transport in metropolitan areas given all the historic, geographic and wider city region governance factors at play. However, there are generic benefits from having some form of metropolitan transport authority that apply to a greater or lesser extent anywhere. In this section we set out these benefits.

### URBAN TRANSPORT SYSTEMS THAT WORK

#### Mapping on to travel demand

Where a metropolitan transport authority broadly maps onto the journey to work area of a metropolitan area, it offers the opportunity to plan transport provision in a way that best matches travel patterns as well as functional economic, social and cultural geographies. Within the area it serves it can provide a mechanism for reconciling sometimes competing priorities for finite resources. It can then rapidly follow up on those decisions and implement them. This can include the prioritisation of improvements to provision as well as the nature and extent of existing provision. It can also mitigate the danger that can be observed in many cities historically of spending on infrastructure occurring in isolation from wider and complementary policies on the use of that infrastructure.



#### Creating sustainable ways of funding urban transport

Transport authorities at a metropolitan area level can be a mechanism for bringing together different funding streams in a way which can create a long term and sustainable way of funding public transport.

They can do this because they are of a scale to gain the reputation and institutional capacity to:

- develop and retain the expertise necessary to manage and administer funding mechanisms in a way that both politicians and the public have confidence in
- innovate
- blend a variety of funding streams which may be generated in different ways across the area they cover
- understand what works in their own local circumstances politically and which can gain public consent
- find ways of diversifying their income streams (which also creates greater overall financial resilience)
- earn and retain the trust of national government and taxpayers to ensure that the funding raised is demonstrably bringing benefits and being spent wisely
- make decisions across a metropolitan area which ensure the funding raised is concentrated where it will have the most benefits whilst at the same time ensuring that all parts of a conurbation benefit in a way that acknowledges the funding they contribute
- find ways of ensuring that the beneficiaries of better public transport contribute to the cost of those improvements

In some countries (like the Netherlands) national government (and national taxation) is the main form of non-fares revenue and capital support (including through one off grants for particular types of services or for capital projects or programmes). However, in other countries transport authorities may be less dependent on support from national government and able to draw on a wide range of potential sources of income that can be blended together to provide a sustainable financial basis for public transport in metropolitan areas.

In the section below we explore some of the most significant sources of income generation that transport authorities may draw upon.

#### Charges from private vehicle use

**Parking.** This can be from off-street or on-street parking and include either charges to park or fines for non-payment of charges, or both. The extent to which parking is an available source of income for a transport authority can depend on whether it has any influence or responsibilities over highways in general, or parking in particular. It also depends on whether parking is the responsibility of other parts of local government and is seen as a general income source rather than something ring-fenced to fund transport improvements.

Although much attention has been paid to road user charging in recent years as an income generator, for



some areas re-routing income from existing parking charges into transport could be a more straightforward way of restricting road traffic whilst generating income for public transport.

In Sydney, Australia, for example, a Parking Space Levy is applied to parking in the central business district and other business districts and has been used to fund public transport improvements. The levy applies to all privately owned, non-residential, off-street parking<sup>4</sup>.

In Nottingham, England, a workplace parking levy was introduced in 2011 which is a charge on employers who provide workplace parking (which accounts for around 40% of the total number of parking spaces in the city). Funding from the charge has supported the extension of the city's tram network as well as wider public transport improvements. The scheme also acts as an incentive for employers to manage their workplace parking provision in a way which helps promote modal shift to public transport<sup>5</sup>.



**Tunnels and bridges.** Depending on their topography, charges for use of tunnels and bridges can be a significant source of income for some cities. In New York for

example, in 2021, MTA Bridges & Tunnel vehicle toll revenue was \$2.170 billion (€2.060 billion) which was 41.6% of the MTA's total revenue.<sup>6</sup>

**Road user charging.** An example of an urban road user charging scheme which has raised significant funding for improvements to public transport can be found in Gothenburg. Gothenburg introduced a time-of-day dependent cordon-based congestion charging scheme in January 2013. The primary purpose of the scheme was to generate funding for public transport projects (principally a new 'WestLink' cross city 8km rail link including a 6km-long tunnel under central Gothenburg), as well as cutting congestion (car traffic decreased by 10% in the first year) and improving the urban environment. This was part of a wider transformative vision for the city aimed at increasing the modal share of public transport by doubling ridership.<sup>7</sup>

**Fuel taxes.** Twenty states in the USA use a proportion of state fuel tax revenue to fund public transport and active travel (for example, a third of fuel tax revenue in New York and New Jersey is used in this way)<sup>8</sup>. Meanwhile, the transport authority in Vancouver, Canada, anticipates CA\$3.88 billion (€2.87 billion) in motor fuel sales tax revenue between 2018 and 2027<sup>9</sup>.



**Traffic offences.** Fines can be made for various road traffic violations (including failure to observe the rules on use of bus lanes, loading and unloading, pavement parking, junctions and lights, speeding).

### Local taxes

Nations, states and metropolitan areas have also introduced non-transport taxes which are nevertheless designed to raise funding for transport.

4 <https://www.revenue.nsw.gov.au/taxes-duties-levies-royalties/parking-space-levy>

5 <https://www.nottinghamcity.gov.uk/wpl>

6 Information supplied by MTA

7 West, J. and Börjesson, M. (2018) 'The Gothenburg congestion charges: cost-benefit analysis and distribution effects' Transportation 47, 145-174 and information supplied by Västtrafik

8 Feigenbaum, B. and Hillman, J. (2020) How much gas tax money states divert away from roads, available from

<https://reason.org/policy-brief/how-much-gas-tax-money-states-divert-away-from-roads/>

9 Translink (2018) 2018-2027 Investment Plan: Phase Two of the 10-Year Vision, available from

[https://www.translink.ca/-/media/translink/documents/plans-and-projects/ten-year-investment-plan/vision/10-year\\_vision\\_phase\\_2\\_investment\\_plan.pdf](https://www.translink.ca/-/media/translink/documents/plans-and-projects/ten-year-investment-plan/vision/10-year_vision_phase_2_investment_plan.pdf)

In 2016, 71.5% of Los Angeles County voters approved 'Measure M'<sup>10</sup> - a half-cent sales tax generating US\$860 million (€817 million) a year for projects which included repairing local streets and sidewalks, greenways and better active travel provision, new rail and metropolitan lines and fares subsidies for students, seniors and persons with disabilities.

## THE FRENCH VERSEMENT MOBILITÉ<sup>11</sup>

In the early 1970s the negative effects of the growth in car use in France led to the creation of the versement transport tax. This was later replaced by the Versement Mobilité (VM). The VM is a local payroll tax payable by public and private-sector employers with more than eleven employees. It can be levied by municipalities and inter-municipal associations with more than 10,000 inhabitants as well as tourist resorts. The VM has now become the largest component of urban public transportation funding in France accounting for almost half of total revenues (€8.2 billion per year) for mobility authorities.

For example the VM in Nantes generated €176m in 2021 having increased by €45m since 2012 thanks to employment growth in a dynamic local economy territory. Revenues from VM are used to cover both operational costs and for infrastructure investment including around €50m a year before 2018 for major developments and innovations like an e-busway (using articulated electric buses). Since 2018 investment has been progressively increased to €100-120m a year including €700m for the period 2021-2026 for renewal of the existing tram network as well as for extensions.



© Nantes Métropole

<sup>10</sup> <https://www.metro.net/project-funder/measure-m/>

<sup>11</sup> Combe, C. (2020) Funding mobility in a post-carbon world, available from: [https://www.lafabriquedelacite.com/wp-content/uploads/2020/07/REPORT\\_FINMOB\\_EN\\_VDEF.pdf](https://www.lafabriquedelacite.com/wp-content/uploads/2020/07/REPORT_FINMOB_EN_VDEF.pdf)  
Information supplied by Nantes Métropole, France

<sup>12</sup> Information provided by ARTM

<sup>13</sup> Combe, C. (2020) Funding mobility in a post-carbon world, available from: [https://www.lafabriquedelacite.com/wp-content/uploads/2020/07/REPORT\\_FINMOB\\_EN\\_VDEF.pdf](https://www.lafabriquedelacite.com/wp-content/uploads/2020/07/REPORT_FINMOB_EN_VDEF.pdf)

## LAND VALUE CAPTURE IN MONTRÉAL

The Réseau Express Métropolitain (REM) is a new automated light metropolitan network under construction in the Greater Montreal area, Canada. It will include 26 stations and span the area with 67km of tracks (nearly doubling the size of the metro network). It is the largest public transport project undertaken in Quebec in the last fifty years. Some CA\$600 million (€443.49 million) out of a total budget of CA\$6.9 billion (€5.11 billion) of the funding is expected to come from a value capture scheme based on development charges. These charges are paid by developers for new constructions within a radius of 1km around the REM stations.<sup>12</sup>



© CDFQ Infra

**Mansion Tax in New York<sup>13</sup>.** To finance an upgrading of its public transportation system, the MTA, New York's transport authority, introduced a Progressive Mansion Tax on 1 July 2019. This tax starts at 1% for properties with a value between US\$1 million (€950 million) and US\$2 million (€1.89 million) and up to 4.5% of the sale price for properties with a value exceeding US\$25 million (€23 million). Over the 2019-2024 period, this mechanism will generate US\$10 billion (€9.5 billion) for public transport investment.

Alongside charges, fares revenue, taxes and funding from Government, transport authorities can also get income from **advertising, retail, digital services and naming rights.**



© Ono Kosuki

## INTEGRATING PUBLIC TRANSPORT NETWORKS

One of the major benefits of a transport authority is that it can be a mechanism by which fragmented public transport networks can be integrated in a way which brings benefits to users and makes them more cost effective to provide and develop.

### Integrated ticketing

Transport authorities can play a key role on integrating ticketing across public transport networks (by operator or mode or both) in a way which makes public transport use simple and easy and therefore more attractive. Ways in which this can be done include:

- zonal fares
- period ticketing (daily, weekly, monthly, annual)
- transfer tickets
- concessionary tickets available across all modes
- capped ticketing

Transport authorities can also:

- invest in new formats and systems for ticketing (such as smartcards and bankcards) and implement these upgrades across public transport networks as a whole
- provide the back office and the mechanism by which revenues and costs from multi-modal ticketing schemes are allocated and apportioned.

## PUBLIC TRANSPORT FOR €1 A DAY IN VIENNA

Vienna's dense network of buses, trains, trams and underground lines bring passengers quickly and conveniently to almost any destination in and around the city<sup>14</sup>.

In 2012, the city introduced the 'Vienna model' to further increase the use of public transport in the Austrian capital. The price of an annual season ticket was lowered from €449 to €365 (€1 per day) for unlimited public transport mobility, with a discounted version for senior citizens costing €235. Companies can buy the ticket for their employees and claim a tax deduction. After the move to €1 a day, the number of annual season ticket holders went up significantly, from 363,000 in 2011 to 852,000 people in 2019. As a result, pre-pandemic, about half of Vienna's adult population uses the annual season ticket and public transport's modal share has increased to 38%. A similar low cost annual 'KlimaTicket' (climate ticket) is now being rolled out across Austria.



© Aneap Powlik

<sup>14</sup> <https://www.climateactionstories.com/mobility/the-vienna-model-365-days-of-unlimited-public-mobility>

## Integrated services and interchanges

Transport authorities can ensure that public transport services coordinate, rather than duplicate, each other and that each mode plays to its strengths. Ways in which they can do this include:

- regular interval timetables, which are easier for passengers to remember and provide a greater consistency of service (e.g. services every 10 minutes)
- timetables where services connect with each other where possible
- local stopping services which act as feeders for faster longer distance services
- interchanges which are designed to make changing between services easy and convenient (and where signage is consistent) and where the facilities available are appropriate to the scale and importance of the interchange

## Consistent quality standards

Transport authorities can ensure greater consistency of the quality of public transport networks either via direct operation of services, the standards they set in contracts or through regulation of service providers. This can give greater confidence and reassurance to users and potential users.

This can include standards for:

- cleanliness and maintenance
- complaints handling
- accessibility
- punctuality and reliability
- passenger safety and security
- interchange facilities

## Making an impression through common branding and marketing

Transport authorities can specify that public transport vehicles have common branding and signage to make the network as a whole easier to understand and use. They can run marketing and information campaigns across and about the entire public transport network. They can promote the use of public transport in general or in support of particular initiatives (such as new services or fares promotions). Through this consistent branding and critical mass of marketing and promotion (when combined with providing a service that lives up to the marketing) they can establish their wider reputation and role as a symbol for the metropolitan area they serve.

## CHANGING PEOPLE'S TRAVEL HABITS IN GOTHENBURG

The COVID-19 pandemic has changed people's habits with an increase in walking trips (with 30% of pedestrians saying they walk more now than before COVID-19). To reinforce this trend, and ease overcrowding on some tram routes, Västtrafik (the public transport authority for Gothenburg and the wider county of Västra Götaland region in Sweden) created a walking map showing the number of steps between tram stops. The map can be seen in print ads and on billboards across the city. It is a reminder that distances are quite short in the centre of Gothenburg, where most trips take less than 20 minutes by foot. Among public transport passengers, more people choose to drive or bike.<sup>15</sup>



## Informing passengers

Transport authorities can invest in systems to keep passengers informed about how services are running and to support them in how best to respond to significant disruption (for example, suggesting other services and modes they could use). This can be done through:

- real time information displays on stations and vehicles
- online information routed to smart devices
- public address systems on vehicles and at stations
- printed information
- ensuring staff are well informed

Transport authorities with multi-modal responsibilities can ensure that this information is also consistent across all modes.

<sup>15</sup> Information supplied by Västtrafik

## Coordinated response to service disruption

Where one mode or service is disrupted, a transport authority with responsibilities across the modes can more easily direct users to another mode or service without additional charge. They can also seek to enhance the service on that alternative mode or service to substitute for the capacity lost on the disrupted mode. This enhances the overall resilience and robustness of the service that users experience.

Consolidated control centres for public transport services (and for highways) can also contribute by ensuring that there is an overall 'guiding mind' for the system which is informed and responsive and is able to adjust services and make sure users are updated on any service problems or changes.

## Integrated decision making

A transport authority can establish the market research and transport planning capacity which enables it to make informed and rational decisions about how best to target available revenue and capital funding across its territory and across the modes.

This can include:

- monitoring and analysing travel patterns and service patronage
- market research into user and non-user opinions, views and attitudes
- modelling future demand at an aggregate, scheme or service specific level

Where a transport authority has this capacity and multi-modal responsibilities it can choose to invest in the most appropriate mode rather than be swayed by the relative power of different modal operators or by vested interests. It can also put in place a long-term plan for the development of public transport which gives greater certainty and allows for more cost-effective planning and delivery of individual policies and projects.

## Provide a framework for the way in which new mobility formats, or existing informal mobility formats, operate

In many parts of the world, the informal transport sector already plays a major role in transport provision (in particular, demand responsive mini-buses). Meanwhile, technological innovation and new app-based business models have raised the prospect of an expansion of the role of demand responsive services in countries where they are currently less prevalent.

Taking the existing informal transport sector first, there are different policy responses that metropolitan areas may want to take to these sectors which include:

- laissez faire – in other words, 'let it be' or a 'hands-off' approach
- adaptation
- integration and regulation

This is a topic that could take up a report in itself so here we restrict ourselves to a high level and partial summary of some of the factors which metropolitan areas often consider when thinking about the future of the existing informal mobility sector. This includes:

- safety
- congestion
- the political and social challenge of seeking to make changes
- the costs that could arise, and the expertise necessary, to make changes to the sector

Different cities around the world are taking different approaches.

It is not the purpose of this report to make a judgement as to what is the right policy approach on informal transport but rather to make the case that having a metropolitan area transport authority makes more of these policy options potentially viable.

Reasons for this include that:

- it maps on far better than a more local unit of governance would to the totality of routes and journeys being made on informal transport networks
- it can accumulate and retain the level of expertise and administrative capacity necessary to undertake reform and give confidence to politicians, those involved in the informal transport sector and the public
- if it has responsibilities for wider formal urban public transport networks then it can align policies and decisions on formal and informal transport in a more integrated way to achieve better overall outcomes

Similar arguments apply to the role that metropolitan area transport authorities can play in relation to new formats for mobility which have been triggered by technological change and by new business models. We explore this further in the 'A time of change' section of the report.

## TRANSFORMING INFORMAL TRANSPORT IN FREETOWN AND MEXICO CITY

In Freetown, Sierra Leone,<sup>16</sup> the focus has been on two key routes that are the backbone of the urban transport network. For these routes contracts and tenders with private operators have been defined. New modern buses with a specific graphic identity have been introduced. Alongside this there has been investment in upgrading infrastructure for buses such as interchanges, accessible bus stops and dedicated bus lanes. This new Bus Rapid Transit (BRT) network has also offered the opportunity to reposition the informal transport service, as providers are key stakeholders in the mobility system and, among other functions, provide feeder services to the BRT. This approach has been supported by a steering committee involving all the key stakeholders including public authorities, public transport users and service providers.

In Mexico City the transport authority is engaged in a long process of transformation of informal transport services to reduce pollution, congestion and to raise the quality of the transport system. It is a process that first started in 2005 and which has included support for operators on service quality and on contracting skills for officials. The new model for Mexico City is one of licensing for routes rather than vehicles and a centralized system for fares and payments to operators. Today, a strong and integrated transport authority is in place and has contributed to a better structure for the bus network, with several BRT lines, modern, comfortable and clean buses and feeder routes provided in a flexible way by minibuses<sup>16</sup>.



## ALIGNING PUBLIC TRANSPORT PROVISION WITH PROVISION FOR OTHER MODES

Public transport does not operate in isolation from other forms of urban transport. For example, public transport patronage is affected by the relative cost of private motoring. The speed, reliability and competitiveness of buses is affected by the extent to which road space is taken up by other road vehicles (including private cars, vans and taxis). Nor can public transport address on its own the wider challenges around poor air quality or carbon emissions from urban transport given that cars, vans, motorcycles and taxis usually play a more significant role.

Transport authorities can therefore play a role that goes beyond the provision of public transport and can extend into other modes allowing for more integrated approaches and outcomes including on allocation of road space, information provision and relative costs and charges for use of different modes. All of which in turn can be used to promote modal shift and, in some cases, generate income for public transport.

**Active travel (cycling and walking).** Walking and cycling have public health, social, environmental and congestion benefits when compared with making similar journeys by car. Some transport authorities have been given responsibility for the promotion and development of active travel, including investing in infrastructure (such as better lighting, cycle lanes and parking, pedestrianised areas) and encouraging greater levels of active travel (for example through training, walking groups, bike hire schemes or through subsidising bicycle purchase or maintenance). They can also better integrate active travel and public transport through providing safe routes to cycle and walk to public transport hubs, policies around the carriage of bicycles on public transport and the provision of cycle parking at public transport hubs. In doing so, they may also be able to replace combined car and public transport trips with combined active travel and public transport trips. At times, or in places, where public transport is congested or for journeys or areas that are difficult to serve by public transport then switching trips to active travel can also reduce the cost, and take the pressure off, public transport.

**Taxis and private hire vehicles.** Taxis and private hire vehicles (PHVs) are a significant element in urban transport provision allowing for personalised transport which can substitute for the use of a private car. At the same time there can be issues around congestion, public safety and the environment.

Some transport authorities have been given responsibilities, to a greater or lesser extent, on taxi and PHV licenc-

<sup>16</sup> UITP (2021). Key insights into transforming the informal transport sector, available: <https://www.uitp.org/publications/key-insights-into-transforming-the-informal-transport-sector/>



ing which can incorporate, for example, safety standards; pricing; driver vetting; vehicle specifications; overall levels of provision; the regulation of competition; and the definition of different types of services.

Transport authorities can also provide financial support for taxi and private hire drivers and providers to invest in more modern vehicles with higher safety and environmental standards. Where a transport authority has responsibilities in this area there is the potential for greater integration with public transport including in relation to drop off/pick up provision at public transport hubs and the relative cost and availability of taxis and PHVs compared with public transport.

**Freight and logistics.** City regions cannot function without the lorries, vans, other motorised vehicles and bicycles that get goods and supplies to where they need to be. At the same time, these movements can generate issues around public safety, the environment, public realm and congestion.

The roles that transport authorities can take on freight and logistics can include:

- licensing and enforcement (which in turn could incorporate the safety of vehicles and drivers, vehicle numbers and the regulation of competition)
- road space allocation (including restricted access to streets by type and time of day)
- vehicle parking and pick up / drop off points
- logistics and consolidation hubs (including direct provision or regulation via the planning regime)
- supporting modal shift of freight through investing in facilities or supporting providers (including modal shift from motorised road vehicles to rail, water or cycle logistics)

- supporting drivers or providers of freight services to upgrade their vehicles or the training of their workforce

The potential for better integration with public transport includes the relative prioritisation of public transport on the road network compared with freight and the potential to use extra capacity on passenger rail services and at stations for the carriage and consolidation of goods.

**Highways network.** There is interplay between the responsibilities that metropolitan areas may have for modes beyond public transport and responsibilities for the highways network (in particular in relation to relative priorities for road space allocation).

Potential metropolitan area transport authority responsibilities for the highways network could take a number of forms, for example, whether this covered just the strategic highways within a conurbation (which is where it is likely that the majority of the busiest public transport routes would be concentrated) or all the highways within a conurbation (which would be a far bigger network, much of which would only be for local purposes). A metropolitan area transport authority might also have a high level strategic role on the highways network (for example in relation to the provision of consistent bus priority measures across a conurbation) whilst leaving the day-to-day maintenance of that network to the local authorities within the conurbation.

If a transport authority has highways responsibilities, then there could be the potential for better integration with public transport, including a consistent approach to the prioritisation of road space for different modes and to the relative cost of travelling on that road space between private cars and public transport users. However, at the same time there could be costs attached to having greater responsibilities for highways (including the cost of maintaining them).

Even if the transport authority does not have direct powers over the highway network, it can still provide a single point of contact with the bodies that do, which should ensure better dialogue and more cohesive outcomes.

Among the transport authorities around the world that have both transit and highways responsibilities are Translink in Vancouver; Transport for London; the Singapore Land Transport Authority; and the San Francisco Metropolitan Transport Authority.<sup>17</sup>

<sup>17</sup> Lönnroth, M. (2019) Governance of metropolitan transport in Canada, the US and a note on Australia, available from: <http://www.vref.se/download/18.45182a5f16a84e-95fac6750d/1560236439198/Governance%20of%20metropolitan%20transport%20in%20Canada,%20the%20US%20and%20a%20note%20on%20Australia.pdf>



## LONDON – BRINGING IT ALL TOGETHER.<sup>18 19</sup>

Transport for London (TfL) is the latest incarnation of London’s overarching public transport provider (which was first established in 1933). Like many metropolitan area transport authorities, TfL is responsible for bus and mass transit networks (in London’s case, the London Underground) but its transport role also extends more widely than that.

It has gained control of some (but not all) of the national rail network which provides local rail services in London, which has been rebranded ‘London Overground’. For years, London’s orbital railways had been outside of the transport authority’s control and had become one of the capital’s most neglected transport assets with poor and unreliable services serving run down stations.

All that changed following devolution to TfL, with a 32% increase in patronage in the first year alone. This dramatic increase in use was due to TfL’s year one programme to rebrand the network as London Overground operating to much more demanding standards. The template included combining the first roll out of smart ticketing on the UK rail network with the integration of fares on TfL’s bus and

Tube services, saving passengers time and money. Poor perceptions of security and customer service were addressed by deep cleaning stations and staffing them from first train to last.

Some major improvements needed no investment at all. Industry leading contractual measures focused TfL’s new train operator on running services to precise schedules. The number of delayed trains fell by 11%. Two years later, patronage had grown by 51%, stimulated by improvements in punctuality, further station renovations and a new train fleet which saw services lengthened from three to four carriages. However, demand was still a long way from being met. In 2011, a major infrastructure upgrade raised frequencies and a further surge in use followed. In less than four years, the Overground’s patronage had doubled. This model of improving existing rail lines has continued with expansion of London Overground in 2015, and the opening of the Elizabeth line in 2022.

TfL also has responsibility for key major roads in London and for traffic control (motorways remain nationally controlled and the local road network is the responsibility of London’s 33 local districts)<sup>18</sup>.

This has allowed TfL to reallocate road space to give priority to buses and active travel. Alongside wider investment and promotion of buses and active travel this has led to a significant increase in walking (up 23%), cycling (up 144%) and bus use (up 54%) between 2000 and 2018<sup>19</sup>.

To provide an additional funding stream to support public transport investment, a road user charging scheme was introduced for central London in 2003 (one of the largest such schemes in the world). Since then, charging schemes to support Low Emission Zones have been introduced and the current Mayor, Sadiq Khan has asked TfL to explore pricing that would vary by distance travelled, time and location, while in the near-term consulting on expansion of the current Ultra Low Emission Zone to cover all of London. TfL has also been generating income from developing the land that it owns through housing developments in particular (including converting station car parks into sites for new homes). This is also helping to tackle high demand for housing in the capital.

TfL is also the taxi and PHV licensing authority for London – a role it has used to drive up safety and

<sup>18</sup> Urban Transport Group (2017) ‘Rail Devolution Works’

<sup>19</sup> Transport for London (2021) ‘Travel in London, Report 14 – Overview’

environmental standards. It also plays an active role on freight and logistics – including promoting and enforcing vehicle standards and operations in order to reduce the number of deaths and injuries that vans and lorries are responsible for.

Everything that TfL does is driven by the Mayor's transport strategy with its central target of 80% of all trips in London to be made on foot, by cycle or using public transport by 2041.<sup>20</sup>

Overall TfL's wide remit has enabled it to:

- Change the way that London travels for the better through significant modal shift
- Take a multi-dimensional approach (for example through coordinating how road space is allocated with the provision of the public transport that uses that road space so that investment in bus fleets and services is complemented)
- Find new ways of funding public transport in ways which also deter private motoring
- Consolidate its reputation in a way which attracts and retains skills and talent
- Align its policies and programmes in the wider environmental, economic and social goals that London's elected Mayor has for the city (including the spatial plan for the city, "The London Plan"), and other local and national government policies.



## MAKING BETTER PLACES

### Improving the quality of place

Transport gets people from A to B but it also helps determine the quality of place at both A and B. And metropolitan areas are increasingly focussed on becoming places where people want to spend time rather than unpleasant places which are blighted by traffic, an ugly urban realm and air pollution.

Public transport, walking and cycling can contribute to improving the quality of place through:

- reducing traffic congestion by promoting modal shift from the private car
- using decarbonised vehicle fleets which emit little or no pollution from the tailpipe
- vehicles and infrastructure that reflect good design principles so that they complement the streetscape rather than detract from it.

Transport authorities with broader responsibilities than public transport can also redesign road space in a way that improves the urban realm and favours public transport and active travel over cars. Where they do not have those responsibilities, they can provide a single point of contact to represent the interests of public transport with those bodies that do have responsibility for street-space. We explore these issues in more detail in the 'A time of change' section of the report.

### Aligning public transport provision with land use planning

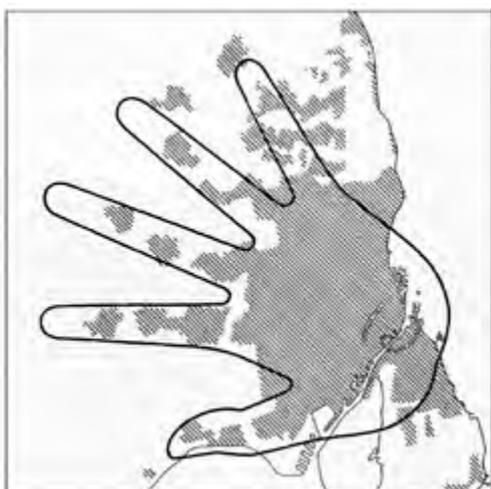
Travel patterns are determined by how different activities are distributed across a city. A city can change and grow in a way which is dependent on the private car or it can be planned around active travel and public transport. The extent to which this happens depends on the relative strengths of the planning regime for urban development and how aligned it is with wider objectives for the promotion of active travel and public transport use.

20 <https://tfl.gov.uk/corporate/about-tfl/the-mayors-transport-strategy>

## COORDINATING LAND-USE AND TRANSPORT PLANNING IN HELSINKI AND IN COPENHAGEN

The Helsinki Region defines how to develop land use, housing, and transport in the coming decade: it presents the desired future, setting out goals and concrete measures to get there. The fifteen municipalities in the region and state organisations are involved in developing the plan. Helsinki Region Transport (HSL) is responsible for transport system planning, whilst municipalities are responsible for land use and housing planning. Together, they draw up a plan every four years. The plan sets out how housing will be built in the future; how the transport system will be developed to best serve the needs of the entire region; how sufficient housing is provided while ensuring the quality of both housing and the living environment. The agreement is signed by all municipalities, HSL and the government.<sup>21</sup>

The strategic ‘finger plan’ for Copenhagen, Denmark was first developed in 1947 and visualises the core of the city as the palm of a hand with the city developing along the five fingers, which are all served by good public transport links and separated by green areas. Later a sixth finger was added which now includes the corridor to Malmö, Sweden over the Öresund bridge. Although now over 70 years old, the finger plan has proved to be a robust basis for sustainable development in the city. New employment opportunities have to be located within 500m of a tram or metro stop along the fingers.<sup>22</sup>



The relationship between the transport authority and the planning authorities in a metropolitan area can also play a critical role. In some metropolitan areas, the transport authority may be integrated within the same organisation responsible for land use planning (or economic development) or it can be responsible to the same overall city region leadership.

Coordination of overall metropolitan area transport plans with those for land use, housing and economic development can also be beneficial. In some city regions the transport authority is also involved directly in transit-orientated developments (mixed use residential and commercial areas designed to maximize access to public transport). This has the added benefit of generating income for the transport authority.



### Contributing to the cultural life of the metropolitan area

Transport authorities can contribute to the cultural life, opportunities and identity of the areas they serve in a range of ways including:

- Promoting and funding public art at stations, interchanges and on vehicles
- Sponsoring or hosting cultural events

This can bring wide-ranging benefits including contributing to the local economy (including the visitor economy) and improving perceptions of the attractiveness of public transport.

Ways in which transport authorities can do this include:

- Being part of the wider ‘one percent for arts’ movement (where one percent of the cost of an infrastructure project, like a new station, is used to fund public art)
- Having dedicated resource within the authority for culture and arts (this could be an individual or a larger team)

21 UITP (2021) Better urban mobility playbook, available from: <https://www.uitp.org/publications/better-urban-mobility-playbook/>

22 URBACT city cases – The Copenhagen Finger Plan, available from: [https://urbact.eu/sites/default/files/example\\_copenhagen.pdf](https://urbact.eu/sites/default/files/example_copenhagen.pdf)

## PUBLIC ART IN LYON<sup>23</sup>

SYTRAL Mobilités, the transport authority for Rhone County and the Lyon Urban Area in France has been working for years to promote art and culture in public transport, viewing the network as a real shared living space. It has a rich and eclectic artistic heritage on its transport network, including works of art that have been installed in the Lyon metro throughout its stations since 1978.

Every year, SYTRAL Mobilités supports a wide range of cultural events, festivals and associations. Recently, for example, it joined forces with the Bron Book Festival and the Quais du Polar International Festival to promote the art of literature on the local public transport network. Books were placed on trams, inviting everyone to leaf through, read or (re)discover them before taking them away, exchanging them or passing them on. In addition, reading boxes were installed in the Bellecour, Grange Blanche and Gare d'Oullins metro stations.

Pursuing its proactive approach and its ambition to bring culture within everyone's reach, the authority has been deploying a large-scale artistic project on the TCL network since December 2021, as part of a public contract, which aims to dress trolleybuses and trams with street art created by artists from the ZOO Art Show collective.

The aim is to dress 5 to 10 vehicles per year.

Through this mobile exhibition, which travels the streets of the city, SYTRAL hopes to enliven the TCL network and the public space, while offering an original showcase for the artists involved in the project.



## FAIRER, GREENER AND HEALTHIER

### Fairer

Transport authorities will have duties to act in fiscally responsible ways but are not primarily driven by the need to make a commercial return or to the exclusion of their wider role in serving the public interest and supporting broader social goals. These social goals can include:

- seeking to ensure that their workforce reflects the diversity of the areas they serve
- providing good jobs with good pay and conditions
- seeking to ensure that the public transport networks they provide seek to meet the needs of all communities in the territory the authority covers in a way that is fair and appropriate
- providing services which meet the needs of communities even when those services are uncommercial
- making public transport more accessible to people with disabilities and to people of all ages
- having fares which are affordable (this can include concessions for low income groups or in support of other wider social policy objectives)

Because they are primarily responsible to the people they serve rather than to private interests they can also find ways to improve public participation in decision making.

## PUBLIC PARTICIPATION IN BOGOTÁ

In Bogotá, Colombia, transport accounts for nearly half of all greenhouse gas emissions in the city. To combat climate change, Bogotá aims to cut its greenhouse gas emissions by at least 15% by 2024, compared to 2020 levels, and by half by 2030, with the aim of becoming carbon-neutral by 2050.

As part of this plan, the city is expanding bike lanes and pedestrian paths, using more electric buses and extending the reach of electric cable cars - some partly driven by renewable solar power - that serve poor areas in the city's south. This process also includes extensive public participation.

*'When Colombian community leader Veronica Fonseca raised her hand to speak at a meeting hosted by Bogotá's mayor, she never expected her ideas on improving transport in the capital would be included in the city's plans. Fonseca, 52, told a forum convened*

23 Information supplied by SYTRAL Mobilités, Lyon, France

by city hall last year that her hilltop neighbourhood, sitting nearly 10,000 feet (3,000 metres) above downtown Bogotá, needed better transport links. She suggested a cable car system to ferry residents from her neighbourhood downtown. “I’d seen cable car lines working in other areas of the city and I told the mayor that’s what our community needs too,” said Fonseca, outside her single-storey home in the steep San Dionisio neighbourhood surrounded by forested mountains.<sup>24</sup>

Fonseca is one of 50,000 residents who participated in the \$620 million (€588 million) “Green Corridor Séptima” initiative which aims to redesign a 23km congested corridor through the city. This ‘co-creation’ approach included door-to-door engagement, public meetings and an open-source online platform, Streetmix, that was custom built for the project. The platform allowed people to submit their ideas by editing and adding to draft plans and resulted in 7,000 proposals from citizens, some as young as 10 years old.

When asked for their views, residents opted to take away space from car users and allocate more room to cyclists and pedestrians. They also asked that more streets and squares be planted with trees and greenery to make them more scenic as well as supporting the 12km cable car line that Fonseca proposed.



## Greener

Transport authorities can ensure that public transport provision (or broader urban transport policy) plays its full part in the achievement of wider environmental goals – such as in relation to air quality and carbon reduction.

Ways they can do this include:

- taking responsibility for determining and delivering on the carbon reductions and air quality improvements required from transport as part of the wider metropolitan area carbon reduction and air quality targets (as well as the goals and targets that national governments may have)
- investing in low and zero emission vehicle fleets and the supporting infrastructure required to get the green energy where it needs to be to power those fleets
- generating or purchasing green energy to power public transport fleets
- promoting modal shift from the most polluting and carbon intensive modes to the least
- improving the resilience of cities to the more extreme weather conditions that climate change is bringing through the way it manages its estate (including its transport infrastructure and buildings)

We explore these issues in more detail in the ‘A time of change’ section of the report.

## Healthier

Transport authorities can make a key contribution to the wider public health goals that city regions have including:

- reducing death and injury on the roads, for example, by investing in safer road layouts; the regulation and enforcement of rules relating to the safety of road vehicles and traffic; and through the safety of the vehicle fleets they are responsible for
- improving air quality through the measures set out in the ‘greener’ section, above
- providing good jobs which enable people (and their families) to live healthier and happier lives and to be able to afford healthcare
- providing access to healthcare facilities
- improving physical and mental health through the physical activity associated with active travel and public transport use

## MORE RESILIENT

### Responding effectively to wider natural or manmade crises or disasters

Metropolitan areas can be affected by a wide range of unexpected crises, threats or disasters. These can include:

- natural disasters (such as earthquakes)
- extreme weather
- terrorism
- pandemics
- civil disorder

With climate change we can expect extreme weather conditions to become more frequent and, for some areas, rising sea levels also pose a threat.

In the event of a crisis, a transport authority can act quickly across all modes of public transport to keep staff and passengers informed, to change levels of service provision and to cover the additional costs of keeping the wheels turning. It can also provide a single point of contact for the emergency services and for local, metropolitan area, regional and national government

Transport authorities are also of a scale and capacity to plan for future emergencies and to learn the lessons of previous crises.

## RESPONDING EFFECTIVELY TO COVID-19 IN SEOUL

South Korea's organised and comprehensive response to the COVID-19 pandemic has received international praise for its relative effectiveness whilst at the same time avoiding the more drastic lockdowns that have occurred elsewhere.<sup>25 26</sup> South Korea's capital, Seoul is a dense city with a population of 10 million people which is reliant on a public transport system with a daily ridership of eight million on the metro and four million on its buses. Peak-time congestion is 154% on the metro and 138% on the buses. Seoul had to keep the wheels turning of its public transport system but without risking becoming a nexus for infection. Seoul therefore adopted what it termed a 'SMART' response to the pandemic consisting of:

Screening and separation

Meticulous Disinfection

Assuring public interest

Rigorous and Scientific Infection Control

Through Mask-wearing.

It also worked on the principle that an 'excessive response is better than a sluggish response'. Alongside intensive cleaning of the public transport system, distinctive elements of the Seoul approach included a big data-based response to infection management (including the use of transport card transaction records as part of contact tracing and promoting the use of QR code readers on public transport). Big data was also used to manage congestion on the system through provision of information and alerts on congestion levels (including at individual subway carriage level). There was also a strong emphasis on mask wearing from the beginning of the crisis (including vending machines at stations and free masks for the socially marginalised). This was backed up by subway security officer patrols to enforce take up as well as an app allowing passengers to report passengers who are not wearing masks.



25 What's behind Seoul's response to COVID-19? SMART Approach for Safe and Sustainable Public Transportation, presentation, available from: [https://mylibrary.uitp.org/GED\\_V14/181952490913/1.1\\_SMG\\_Seouls\\_response\\_to\\_Covid-19\\_SMART\\_Approach.pdf](https://mylibrary.uitp.org/GED_V14/181952490913/1.1_SMG_Seouls_response_to_Covid-19_SMART_Approach.pdf)

26 Seoul's fight against COVID-19 for sustainable public transportation, presentation by Boyoun Hwang, Seoul Metropolitan Government, 4th June 2020, available from: [https://mylibrary.uitp.org/GED\\_V14/170934699811/CAC\\_Global\\_Summit\\_2020\\_public\\_transportation\\_Hwang\\_Bo\\_Youn.pdf](https://mylibrary.uitp.org/GED_V14/170934699811/CAC_Global_Summit_2020_public_transportation_Hwang_Bo_Youn.pdf)

## GOING UP A LEVEL

### Can capitalise on the moment by responding quickly to deliver on big ambitions

In the life of metropolitan areas there are moments where it becomes possible to make big changes for the better - and quickly. This could be when an ambitious Mayor with a strong mandate for change is elected, it could be in the aftermath of a wider crisis (such as the collapse of a key industry or a manmade or natural disaster) or a significant change in the policies of a national Government.

These changes might open a window for the reorientation of policy around public transport and active travel; radical reform of pricing and charging for transport; or an uplift in expenditure to turn longstanding aspirations for major public transport schemes (such as a new Metro scheme) into reality.

If a city region transport authority is in place, or is put in place, then there is a body with the capability, reputation and expertise to move rapidly to seize the moment and realise the opportunity. If there is not, the moment may pass or the opportunity may be squandered due to poor execution.

London is a good example of this as incoming Mayor Ken Livingstone was able to utilise Transport for London to successfully introduce road user pricing and transform the city's bus network in his first term (2000 to 2004).

### Reflect and enhance the identity of the place they serve

Public transport enables the functioning of city regions and in doing so it becomes part of the identity of those places. Especially where that public transport has unique characteristics or where it has consistently prioritised good design; the quality of its service, vehicles and infrastructure; and maintained a strong and consistent corporate identity. Indeed, many cities around the world are strongly associated with features of its transport network - from the cable cars of San Francisco to London's red double decker buses. These positive associations add to the allure of those cities for visitors, investors and residents.

Metropolitan area transport authorities are well placed to consistently maintain, develop and act as the long term custodians of the design values and corporate identity of a city region's public transport network.

## PERFECTION IN MOTION IN MONTRÉAL <sup>27</sup>

Fifty-five years from its opening in 1966, the Montréal Métro remains perfection in motion. The system works because it was brilliantly designed. It is simple to use, easy to access, safe and fast. Canada's perfect subway is an engineering marvel that moves people efficiently whilst providing an environment of good design, art and architecture.

Montréal had been dreaming of a subway for decades, but it finally happened under the determined and visionary leadership of Mayor Jean Drapeau in the 1960s. It also tied in with the city hosting Expo 67, often cited as the most successful World Fair of the 20th Century. The coming together in Montréal of the right people at the right time, from many disciplines, led to the creation of a subway system of enduring character, which in turn has shaped the city's character. In the Montréal Métro, art, architecture and engineering seem to flow together seamlessly, each element complementing the other, all forming an organic whole greater than the sum of its parts.

The simple blue and white arrow in the circle logo, unveiled in 1963, is still in use today. Designed and built in Canada, the original Métro cars lasted 52 years in service, making them amongst the longer service subway cars in the world and one of Canada's most important industrial design objects. Art integrated into architecture as a public policy was almost completely unheard of in Canada, and the Montréal Métro pioneered the commissioning of artworks for individual stations.

A sign of how successful the design of the Montreal Métro is, it has its own authorised merchandise and boutique (Boutique STM).



27 Martins-Manteiga, J. (2011) Metro: Design in Motion

## Can drive innovation and act entrepreneurially

It is a myth that entrepreneurship and innovation are unique to the private sector. Public sector transport authorities of scale and capacity can innovate directly, encourage innovation in the private sector and act entrepreneurially. Whilst the private sector can be motivated by monopolising markets, transport authorities are motivated by solving difficult transport, social and environmental challenges with finite resources. This motivates them to innovate and act entrepreneurially. They can do this through:

- procurement policies which drive up environmental, accessibility or customer service standards in a way that stimulates innovation in the private sector (for example on low floor public transport vehicles, on zero emission vehicles and on information services for passengers). They can also do this in areas which the private sector might not see a commercial return in, and therefore may not have invested in (for example features which benefit those with specific disabilities or those on low incomes)
- their own in-house research and development capabilities
- development of products and services which have wider commercial application (such as smartcards) or through selling their expertise (through consultancy arms)
- pump-priming and supporting business start-ups and innovators through competitions, trials and testbeds for new services, products, applications and vehicles. They can also devise contracts in a way which ensures that new entrants and ideas are not squeezed out.

## INCENTIVISING ACTIVE TRAVEL AND PUBLIC TRANSPORT USE IN SOUTH KOREA<sup>28</sup>

The Addeul transport card in South Korea incentivises active travel and public transport use through discounts which relate to the regularity of making trips by bike, on foot and by public transport. There are further benefits for users if they use public transport on days where fine dust levels are high or on Earth Day and other days where environmental issues are being highlighted.

The scheme enjoys high satisfaction levels from users and has led to ₩78.3 billion (€58.57 million) in public health, economic, social and en-

vironmental benefits. The number of users is expected to increase from 20,000 in 2019 to 355,000 in 2023 and the number of participating cities, districts and counties is expected to increase from 43 in 2019 to 158 in 2023. The aim is also to move to full contactless ticketing (with no need for passengers to pass a card over a reader) and to introduce Mobility as a Service across both public transport, bike rental and personal mobility devices across the country.

## Expertise, knowledge, institutional capacity and corporate memory

Transport authorities can enter a virtuous circle where they attract and retain the best staff with the best expertise because they provide rewarding careers which can include delivering major projects, managing large workforces, or being responsible for the day-to-day delivery of complex operations. And all within a wider public service ethos. The prestige and reputation of the transport authority can also play a part in recruiting and retaining expertise and excellence.

Transport authorities can be of a scale where they have the institutional capacity to horizon scan and look ahead to how best to meet new opportunities and challenges rather than being constantly swamped by waves of social, technological and environmental change. In this way they can shape the future in a positive way rather than being shaped by it for good or ill.

Transport authorities can also be of a scale where they can develop a corporate memory which can survive staff turnover. They can develop specialist corporate capabilities and competencies in specific areas such as finance, legal and project management rather than having to hire this in or being overly reliant on a single, or small numbers, of staff for a particular area of expertise.

## Generate momentum and provide leadership

Success breeds success and transport authorities which have earned respect for their competence and capabilities are more likely to attract further investment and to exert a wider progressive influence over the development of the metropolitan areas they serve.

<sup>28</sup> South Korea: example of smart ticketing in Korea, presentation by Park Jeongho, Metropolitan Transport Economy Division to UITP OAC meeting April 2022

## DIFFERENT FORMATS FOR METROPOLITAN AREA TRANSPORT AUTHORITIES

We have established the benefits that a transport authority can bring in principle but how are transport authorities set up in practice to achieve these objectives? As we set out earlier, if the wider governance of metropolitan areas is derived from their unique history and geography and is characterised by diversity, fluidity and complexity, then so is the governance of transport in metropolitan areas.

In Figure One (see page 41), we set out a broad typology of transport authorities - from a 'minimalist' to a 'maximalist' approach. However, a typology of this nature is a relatively crude device given that it is possible for a metropolitan area to share key characteristics with that of a transport authority in a very different position on the typology. The complexity and fluidity of different governance arrangements in individual areas also does not lend itself to simple typologies. In this section we look at the key dimensions to transport authorities which are: the geographical area they cover; their range of transport responsibilities; their legal status and accountability; and their access to funding.

In a report of this nature, we can only provide a high level overview but in the 'Further reading and sources' section of the report lists further reports and materials which go into greater detail.

### AREA COVERED – THE DIFFERENT OPTIONS

- **City level.** A transport authority might serve a single, stand-alone city and its immediate commuting hinterland.
- **Metropolitan area level.** A transport authority might serve a much more extensive commuter hinterland for a single large city or it might serve a more complex conurbation which might contain more than one city as well as other significant urban centres.
- **Regional level.** A transport authority might serve an entire region which could consist of multiple cities and significant urban centres as well as a substantial rural hinterland.
- **Overlaps.** In some areas there may be transport authorities which overlap (and have arrangements for this) or whereby there are different tiers of transport authorities with different or overlapping responsibilities.

The pros and cons of different geographies for transport authorities are likely to be highly specific to each

individual area. However, in general, the larger the area covered the more likely a transport authority is to reflect travel patterns as well as wider social and economic geographies. A larger area also gives a larger potential base for raising revenue from the farebox, taxation or by other means. The downside of a maximalist approach to the area covered is that it can make achieving consensus and consent more difficult as the interests of a larger number of different areas covered become more diffuse.

Examples of this challenge include:

- low density suburban and rural districts tend to be less pre-disposed to providing funding support for urban public transport than high density urban districts
- outer areas can become concerned that they are being 'taken over' by the urban centre

In much of the literature on cities there is an implicit assumption that all cities are stand alone with concentric circles of city centre, inner suburbs, outer suburbs and rural hinterland. This is far from always being the case in practice with cities often part of more complex polycentric regions or sub-regions. There can also be a tendency within national Governments to seek a one-size fits all approach to sub-national governance which does not take into account the complex ways in which different urban centres, sub-regions and regions interrelate.

The most effective transport governance solutions are likely to be those that reflect these complexities and overlaps if and where they exist.

This can include:

- individual areas making joint arrangements with other areas on service levels, branding and ticketing which reflect overlaps between their travel patterns and economic pull.
- a degree of co-decision making across different tiers (which could include city, metropolitan area and regional transport authorities) in order to provide passengers with a public transport system across a large area that finds the right balance on fares, integration and branding between what is common across a region (eg inter-availability of ticketing) with what is specific and appropriate for different parts of that region (eg fares and service levels).



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## INTEGRATING ACROSS COMPLEX URBAN AND REGIONAL GEOGRAPHIES IN GERMANY <sup>29 30</sup>

Germany's Verkehrsverbunds (transport associations) have proved to be an effective means of planning and providing public transport systems in a way that serves complex and overlapping urban and regional geographies whilst allowing for both overall integration as well as the ability to specify local detail.

The first Verkehrsverbund was established in Hamburg in 1965, following five years of planning. It was founded as an association of three operators: the municipal HHA (operating the light metro, trams and urban bus service); S-Bahn Hamburg, (the metropolitan heavy rail division of the German federal railway), and VHH (operator of suburban bus services).

The original intention was only to establish a joint ticketing system, but it was then decided to pool other functions like network planning and marketing in a joint organisation. In the beginning, it mainly covered services within the city limits. Over the years, neighbouring communities applied for membership and the territory covered has since tripled.

One ticket, one pricing system and one integrated network of public transport services is the motto of the Hamburg Verkehrsverbund which now manages all local public transport on behalf of three federal states, eight administrative districts and almost 30 public transport operators.

The system has proved very successful and because of increased ridership (up 29% between

1990 and 2015) and farebox revenue it has been used as blueprint for many other public transport organisations in Europe spreading to thirteen German, Austrian, and Swiss metropolitan areas from 1967 to 1990, and to 58 additional metropolitan areas from 1991 to 2017, serving 85% of Germany's and 100% of Austria's population.



## TRANSPORT AUTHORITIES INTEGRATING TRANSPORT PROVISION IN SWITZERLAND AND MOROCCO <sup>31</sup>

The Office for Mobility for the Basel-Stadt canton, Switzerland, serves a densely populated area of 37 square miles and integrates all transport modes into one body to ensure that the canton is easily accessible and that people and goods reach their destinations in a climate-friendly and reliable manner.

It collects data on travel and traffic patterns and trends; operates the region's transport planning model; plans, contracts and approves public transport services; supports vehicle sharing schemes; develops and implements infrastructure projects; and manages parking, traffic control and signage. It also represents the canton's transport interests at the national level as well as coordinating with neighbouring authorities and the wider tri-national agglomeration of Basel.

Since 2009, the role of Casa Transports<sup>32</sup> has been to implement the recommendations of Casablanca, Morocco's urban mobility plan. The plan's objective is to foster sustainable urban development by favouring mass public transport through an ambitious transformation of the mobility system and its infrastructure.

29 Federal Ministry for Economic Cooperation and Development (2018) Public Transport Integration and Transit Alliances

30 Buehler, R., Pucher, J. and Dümmler, O. (2019) Verkehrsverbund: The evolution and spread of fully integrated regional public transport in Germany, Austria, and Switzerland, *International Journal of Sustainable Transportation*, 13:1, 36-50

31 The Office for Mobility for the Basel-Stadt canton

32 UITP (2021) Better urban mobility playbook, available from: <https://cms.uitp.org/wp/wp-content/uploads/2022/02/Report-BETTER-URBAN-MOBILITY-PLAYBOOK.pdf>

Considered an innovative governance tool, Casa Transport is a private limited company financed and managed by different public stakeholders, ensuring vertical intergovernmental coordination and a stable financial commitment to mobility projects. A fund was also created to cover investments in public transport projects and to support the operating deficit for the first years.

The structure ensures a true interface between the city and the various local and international partners in the implementation of new and extended tram and BRT routes, as well as the wider restructuring of the bus network.

Implementing the multimodal strategy of the city, Casa Transport also plans to support better integration between different sustainable transport modes with a contactless ticketing system and mobility hubs by 2024.



## THEIR RANGE OF TRANSPORT RESPONSIBILITIES

### Common core elements

#### *Strategy and development*

A transport authority can have responsibilities for drawing up an overall strategy for the development of the public transport network (or wider urban transport plan). This is often most effective when it is coordinated with plans for land use and for economic development.

#### *Services and fares*

A transport authority can determine the public transport services which are to be provided and the fares that are to be charged (including concessions).

### *Public transport operator, specifier or coordinator?*

A transport authority can:

- be the operator of public transport itself (or have responsibility to a lesser or greater degree for a local owned public transport provider)
- be the specifier of public transport (which is contracted out for provision by private companies).
- have a coordinating role whereby it works with, and seeks to influence, private and public sector providers of public transport

### Wider options on public transport

#### *National rail services in the metropolitan area*

In many city regions, heavy rail services (which are part of wider national rail networks) could, or do, play a key role in the overall local public transport network. Sometimes the potential of these heavy rail networks within urban areas is under exploited as most countries which retain significant passenger rail networks have done so on the basis of the nation state taking responsibility for them.

These national rail providers often prefer to concentrate on longer distance passenger services, do not prioritise investment in local urban services and do not operate them as part of the city region branding or fares structure.

Options for the role of transport authorities on heavy rail networks include:

- playing no role (with the heavy rail system sitting outside of the rest of the public transport network)
- incremental and opportunist approaches to working with the national rail provider to improve services within the city region, to invest directly in stations, services or trains, or to enter into city region ticketing or branding arrangements
- taking over individual former heavy rail lines and integrating them into the wider local public transport network (this can include converting their operations to light rail or more high intensity urban rail formats)
- taking on (to a lesser or greater degree) responsibility for the contracting of provision of those services

#### *Other modes*

We explored earlier the role that transport authorities could take on in relation to other modes including active travel; freight and logistics; informal transport; new mobility; highways; and taxis and PHVs.

## TRANSFORMING HEAVY RAIL SERVICES IN LIVERPOOL<sup>33</sup>

The Liverpool City Region transport authority (Merseytravel) took over responsibility from national government for its local suburban electric rail network in 2003. Before this occurred, these local rail services were known as 'Miseryrail' because the service was so bad.

However, little more than a year after responsibilities had been devolved to Merseytravel, passenger satisfaction leapt from 82% to 90%. Patronage growth has also been consistently above target (growing 30% between 2002/3 and 2016/17).

This rapid improvement was based on a more demanding contract with the operator, caps on fares rises and investment in both stations and the train fleet. Merseytravel's new fleet which will be the first of its kind in the UK to offer level boarding between platform and train using a sliding step, making the Merseyrail network more accessible to more people with reduced mobility.



### THEIR LEGAL BASIS AND ACCOUNTABILITY

A key dimension to the legal and accountability basis of transport authorities is the degree of integration with, or independence from, wider city region governance.

A transport authority could:

- have powers in its own right and be a distinct legal entity with sole legal responsibility for certain functions
- be part of wider city region governance
- have powers which are limited or constrained and accountability which is diffuse or unclear

In practice this can play out in many ways, but typical formats include bodies which:

- are concerned entirely with the provision and operation of the local public transport network and although, ultimately, it is owned by the wider governing body(ies) for the area it has a relatively high degree of autonomy and operates to a greater or lesser degree as a business would
- are concerned with the provision of public transport (and in some cases has wider transport responsibilities) but operates as a public body which is responsible to, or part of, the wider governing body(ies) of the city region. London is an example of this format, where Transport for London is responsible to the Mayor of London
- have overarching responsibilities for elements of the planning of public transport (or wider urban transport) but other public or private bodies are responsible for provision of different elements of public transport and urban transport planning, provision and oversight

There are pros and cons of these different formats but the advantage of the public transport operator model is that it is less likely to be subjected to short term political interventions and therefore can be more stable and attract and retain skills and expertise on that basis. However, it can lead to a separation between wider transport policy and the operation of public transport (for example on the allocation of road space).

Transport authorities which are part of a diffuse system of bodies responsible for transport may find it easier to avoid conflict within the local political and administrative eco-system but they may also struggle to deliver. The whole becomes less than the sum of the parts.

Transport authorities which have a wider role can ensure the sum is more than the parts with concerted strategies across transport which also link in with wider planning and economic goals. However, they may therefore also be operating in a more overtly political context which in turn can lead to instability. It can also be difficult to establish such authorities in the first place given resistance from existing bodies to the creation of a more powerful body (see also the conclusions section).

### THEIR ACCESS TO FUNDING

We explored some of the issues around access to funding in the section on the benefits of a metropolitan area transport authority (including the range of funding sources that might be open to a transport authority). The key question is to what extent a transport authority can propose, develop and administer income streams. This in turn will relate to its legal status and its accountability.

<sup>33</sup> Urban Transport Group (2017) Rail Devolution Works

## A TIME OF CHANGE: FOUR CONTEMPORARY CHALLENGES FOR URBAN TRANSPORT GOVERNANCE IN THE 2020S

In this section we examine four contemporary challenges for both existing transport authorities and for those metropolitan areas that are contemplating establishing one. A common feature of these challenges is that they all require greater cross-working across different disciplines and professions which in turn makes the case for transport authorities with the scale, capacity and remit to address these complex challenges in ways which reflect the wider public interest.

### THE CLIMATE IMPERATIVE

Nations, metropolitan areas and cities are setting ambitious targets for carbon reduction which, to be achieved, imply rapid decarbonisation of vehicle fleets (and the availability at the point of use of the green energy to power those vehicles); better utilisation and occupancy rates for private vehicles; and significant modal shift from private cars to public transport and active travel.

This in turn implies significant and coordinated investment in transport and energy networks, as well as reorganisation of street space to support modal shift.

These changes will not only have to occur in city centres but also in the secondary centres, suburbs and edge-lands which make up metropolitan areas as a whole and where public transport's mode share tends to be lower and car dependency higher.

This in turn has significant implications for the way the governance of transport is organised and coordinated including the need to:

- build teams, and sustainable financial models, capable of delivering significant investment in more and greener public transport
- get green energy where it needs to be to power urban fleets, requiring greater cross-working and more breaking down of professional barriers between transport and energy both within metropolitan area governance structures and more widely
- bring new thinking and new approaches to the tough challenges of decarbonising transport provision outside of public transport's comfort zone (which is serving dense urban cores). Greener transport strategies for suburbs and secondary centres will also require greater coordination within wider metropolitan area governance between transport and planning, housing

and the wider built environment. For example, new and refurbished suburban housing stock will need to be fitted with charging points and/or have good access by active travel or public transport.

Climate change is also bringing with it more extreme weather conditions which in turn will require a transport network which is more resilient to greater temperature extremes and more intense rainfall. This could require significant expenditure in retrofitting and renewing existing infrastructure as well as raise the cost of new infrastructure. There may also be more short-term and long-term issues around the loss of infrastructure due to rising sea levels or weather related disasters such as fires or floods which have implications for the future planning and development of transport networks as well as for disaster management capabilities.

The twin challenges of decarbonisation and improving climate resilience also have implications for the estate that transport authorities own or have influence over. This includes decarbonisation of the buildings that the transport authority owns or has a say over (including offices, property developments, public transport hubs, depots and so on). Transport authorities may also have responsibilities for a significant surface area of the city regions they serve – which can include roads, roofs of buildings, mass transit lines and supporting infrastructure. This surface area has the potential to be adapted:

- for green energy generation (solar, wind, heat pumps and so on)
- by reducing the urban heat island effect through the provision of more tree cover and 'green-blue' surface cover (plants and water). This can also have the benefit of reducing the flood risk from intense rainfall as run-off is slowed, improving the resilience of the wider transport network. It also brings bio-diversity benefits as well as making cities more attractive and healthier places to be
- by providing more shade from high temperatures. This could be through more tree cover or more shelters and awnings
- by providing charging and energy supply infrastructure
- by combining work on transport infrastructure with wider environmental infrastructure upgrades (such as installing water drainage and storage systems and combined heat and power networks)

As with decarbonisation, climate adaptation also requires the breaking down of professional and administrative silos given the interplay between transport, energy and the built environment.



## MAKING THE CONNECTIONS ON CLIMATE<sup>34</sup>

Management of rainwater will become a greater challenge in many parts of the world as a result of climate change. Water storage and slow-release facilities, for example, in public squares and plazas; beneath buildings; in car parks; or on roof tops can help to manage extreme rainfall. The Netherlands is ahead of the curve on developing these kinds of facilities, in part due to their vulnerability to sea level rise and flooding. Water squares or plazas are being incorporated into the Dutch urban realm to temporarily collect storm water runoff.

In Rotterdam, for example, a water square has been incorporated into Bellamy park in the Spangen district (near to the central station) an area with a large proportion of paved surfaces and no open water. The green park has a lowered paved area designed for temporary storage of rainwater which flows beneath the green play area and porous lava stones. Several car parks in Rotterdam have also been adapted for this use, including Kruisplein car park beneath Rotterdam Central Station, which has the ability to store 2,300m<sup>2</sup> of water.

In the Islington district of London, United Kingdom, a local energy centre has generated combined heat and power since 2012 and the heat is piped into 800 homes via a district heating network. Phase two of the project delivers a new energy centre which will harness waste heat from the London Underground and feed this into the district heat network, expanding capacity for a further 1,000 homes. A 1MW heat pump draws the waste heat from a ventilation shaft of London Underground's Northern Line and transfers the

heat to homes as hot water. During the summer, the system can be reversed to draw cool air into the Tube. The Greater London Authority estimates that waste heat in London could meet as much as 38% of the city's heating demand.

## FAIRNESS AND SOCIAL JUSTICE

Public transport can provide access to opportunity for everybody. Access to education, to work, to healthcare, to friends and family, to leisure.

It can do this regardless of gender, age, ethnicity, sexual orientation or disability.

But for this to be realised in practice it needs to be available, accessible, affordable and acceptable for everyone (known as the '4 As').

**Available** – transport services should be within easy reach of where people live and take them to and from the places they want to go at times and frequencies that correspond to patterns of family, social and working life. Services should take account of differing levels of digital literacy and access to devices. People also need to be kept informed of the services that are available.

**Accessible** – as far as it is safe and possible to do so, everyone regardless of ability, age or dexterity, should be able to use and understand the service, vehicles or infrastructure without unreasonable difficulty.

**Affordable** – people should not be 'priced out' of using transport services and see their mobility restricted as a result. It should also be easy for people to find and access a range of transport options that meet their needs and offer the best value.

**Acceptable** – people should feel that transport services and infrastructure are equipped to meet their needs as well as being welcoming, comfortable, safe and convenient. It should ensure that all users are treated with dignity and respect.



A lack of transport services that fulfil these four criteria can leave people stranded and cut off from opportunities and therefore vulnerable to social exclusion.

Groups of people at particular risk of being excluded in this way include:

- people without access to a car or other means of transport who rely primarily on public transport to get around
- people on a low income
- people with physical or sensory impairments, chronic health conditions, mental health support needs or learning disabilities who may need extra support or design features to be able to use public transport effectively
- older people who may no longer be fit, or feel able, to drive or be able to afford to run a car
- children and young people for whom public transport is a prime means of getting around independently, particularly where the journey is not suitable for walking or cycling
- people living in remote, less densely populated parts of a metropolitan area without access to a car or other means of transport

Public transport has a particularly important social role given that in general it is relied upon by people on the lowest incomes and those without access to a car. It can also be the form of transport most relied upon, or used, by women and by ethnic minorities. Those who can't drive for reasons of age or disability are also particularly reliant on public transport.

Urban public transport systems also often draw their workforce from low income areas and are significant employers of women and ethnic minorities. The COVID-19 crisis has brought home to many how reliant we are all on essential workers who keep cities functioning, many of whom (such as cleaners) are on relatively low incomes and rely on public transport to get to work.

Given all this, policies on public transport can become a trigger for wider movements for social change such as civil unrest in South America over public transport fares increases through to bus boycotts over racist practices in the southern states of the USA in the mid-twentieth century. Or, more widely, public transport can find itself a symbol and target for wider unrest or protests which are not about public transport per se (for example the hijacking and burning of buses in Northern Ireland).

Given its visibility, its key social role and that it is a public service, there is often an expectation that public trans-

port shows wider leadership for society as a whole in its policies and practices both as an employer and as a service provider.

Each of the 4 As of socially inclusive transport will now be explored in more detail.

### Availability

Transport authorities can have a key role in ensuring that public transport is available to all its communities through the pattern of services it operates or facilitates. Depending on local circumstances how this is done might be through:

- a criteria based approach which seeks to ensure fairness of provision across a metropolitan area on the basis of factors such as population density, demand, levels of car ownership and so on
- in less regulated public transport systems it may be about providing services where commercial operators (formal or informal) are not providing services
- supplementing the regular public transport network with services targeted at specific needs (such as demand responsive, semi-demand responsive, services linking areas of high unemployment with employment areas, or services matched to shift patterns at major employment hubs)
- working with planning authorities to ensure new developments are well connected to the public transport network as well as to walking and cycling routes
- planning networks that go beyond serving commuters going in and out of city centres and seeking to serve other journey patterns (for example, within and between suburbs)
- providing information that indicates how to reach key destinations (e.g. hospitals) using public transport.



## AN INCLUSIVE TRANSPORT SYSTEM FOR ALL IN OSLO

The Public Transport Authority of Oslo and former Akershus (now part of Viken County), Ruter, has set out a long-term ambition to provide “sustainable freedom of movement for all” in line with the UN Sustainable Development Goals. Ruter will strive to ensure freedom of choice, equal opportunities, independence and respect for all travelling on public transport – regardless of disability, gender, age, ethnicity, religion or economic status.

The aim of the project is to identify the barriers people meet when using public transport, and to change the mindset of the entire organisation (including through new Key Performance Indicators) to make it a matter of course to consider and include all customer groups in every new venture. By providing services adapted to wider range of customers Ruter expects to increase modal share for sustainable transport modes<sup>35</sup>.



### Accessibility

Transport authorities can play a key role in making public transport vehicles and infrastructure more accessible to people including people with disabilities, older people and young children and their parents or carers. This can include:

- considering accessibility of the door-to-door journey as a whole (e.g. key routes to and from bus stops and interchanges, the stops and interchanges as well as the vehicles themselves)
- level access to vehicles, stations, stops and interchanges

- specific space on board vehicles for wheelchair users, prams and buggies
- audio announcements and visual information displays at vehicles, stations, stops and interchanges
- choice of signage, surfaces, materials, colours and lighting within interchanges – decisions here may affect the extent of accessibility for different groups
- availability of toilets, including those which are accessible for people with a range of different needs, for example, wheelchair users, people who need assistance from a carer to use facilities and provision for baby changing
- providing a central, trusted and coordinated source of transport information that is, as far as possible, clear and easily understood by all types of passengers, including, for example, people with learning disabilities and people with dementia
- providing tools to help people with additional needs to use the network or to indicate (discreetly if desired) that they may need additional support, patience or understanding when travelling
- ensuring staff are available and trained to appropriately assist those who may need it, including disability awareness training
- expert input and meaningful consultation with users and non-users on their needs to inform design of services and infrastructure

### Greater Manchester’s disability design reference group

Transport for Greater Manchester (TfGM), United Kingdom, has a Disability Design Reference Group<sup>36</sup> – established in 2008 and coordinated by Breakthrough UK, a disabled people’s organization .

It meets once a month with project managers, designers, architects, planners and transport professionals and aims to embed accessibility into every aspect of TfGM’s work. For example, it has been actively involved in the expansion of the city region’s tram network and helped ensure that all stops have ramps or lifts, tactile paving, hi-vis handrails, disabled boarding points and help points. The group also directly test each new tram stop to ensure suitability before it opens to the public.

### Affordability

Fares are a key source of income for many transport authorities but they are also clearly pivotal to the affordability of public transport for low income households. In relation to social inclusion, approaches to fares that can be taken include:

35 UITP (2021) Better urban mobility playbook, available from: <https://cms.uitp.org/wp/wp-content/uploads/2022/02/Report-BETTER-URBAN-MOBILITY-PLAYBOOK.pdf>

36 <https://tfgm.com/accessibility/accessibility-groups>

- **Provision of free or discounted concessions for different social groups** (such as retirees, children and young people, unemployed people, people with disabilities, those who work in, or have worked in, particular professions, or low income households). There can be complex questions here about which groups receive support and why, what level of concession should be offered and how these concessions are funded, administered and validated. These concessions can also be linked to wider civic smartcards or documentation which provide access to other services (such as discounted or free access to leisure facilities) or they can require the purchase of some form of entitlement document or smartcard. Leipzig, Germany, is an example of a city which has recently introduced a scheme by which those on low incomes can purchase an annual pass for public transport for a euro a day.
- **Free or very low fares for all residents of a metropolitan area.** There are many wider arguments about the merits or otherwise of free fares in particular (an in-depth discussion of this is beyond the scope of this report). However free or very low fares in a sense moves public transport into the category of universal free access to civic provision of the kind associated with public parks and libraries. Tallinn, Estonia, is one of the most well-known examples of a major city which has made its public transport free to residents.
- **Setting fare zones in a way which reflect socio-economic geographies and social priorities.** For example, there is a danger that some fare zoning policies mean that those from poorer areas pay disproportionately more than those from wealthier areas. Affordable ticketing products can also be offered which target low income trip chainer, shift workers and part time workers.

### Acceptability

Public transport should be a place where everyone feels safe, comfortable and respected. This can be achieved through:

- training and support for staff to ensure people using services feel welcome and safe
- designing, managing and policing networks in a way which is non-discriminatory but which also deters, detects and acts on harassment and abuse
- keeping vehicles, interchanges and infrastructure clean and well maintained, offering dignity for users and increasing the appeal of public transport to non-users
- gathering, and where appropriate, acting upon feed-

back from users and non-users to improve services and facilities

- communication of the public transport offer which highlights its benefits and conveys a welcoming messages to all kinds of potential passengers
- seeking to ensure that the make-up of the management and staff of a transport authority reflect the diversity of the areas they serve

The latter point is also something that can contribute more widely to ensuring that the services that the authority provides and prioritises are not skewed towards certain sectors of society over others.

### Supporting minority and women owned businesses in New York

New York's Metropolitan Transport Authority currently has the best minority- and women-owned business enterprise (MWBEs) programme in the US. The Department of Diversity and Civil Rights of New York's Metropolitan Transportation Authority reaches out via events and forums to promote the availability of contracting opportunities to suppliers and contractors which are minority or women owned. Last year, the MTA celebrated 10 years of its Small Business Development Program, which has provided MWBEs with mentoring and capacity building opportunities. The program has awarded 455 contracts amounting to \$480 million with more than 11,520 jobs created or maintained.

The program is organised into two integrated parts: Construction Management Mentoring Services and Business Development Technical Assistance. The program works closely with each mentoring contractor through four-year Tier 1 and four-year Tier 2 state and locally funded MTA projects. Once the training is completed, contractors graduate into the MTA Small Business Federal Program, a three-year program that was approved in 2012 enabling participating contractors to bid on and win larger projects and grow their businesses. The approach was maintained during the pandemic. For specialty work, such as disinfection, MTA secured the services of a record number of MWBEs totaling over \$100 million in contract awards during the pandemic.<sup>37 38 39</sup>

37 Garner, M. (2020) Opinion: At the MTA, we take minority- and women-owned businesses seriously, available from:

<https://nyc.streetsblog.org/2020/07/26/opinion-at-the-mta-we-take-minority-and-women-owned-businesses-seriously/>

38 'MTA Chief Diversity Officer Michael Garner wins Crain's New York Business' "Top Diversity and Inclusion Officer" Award' MTA Press release 15/07/21

<https://new.mta.info/press-release/mta-chief-diversity-officer-michael-garner-wins-crains-new-york-business-top>

39 Information supplied by MTA

## ENSURING A FEMINIST PERSPECTIVE ON PUBLIC TRANSPORT IN BARCELONA

In July 2020, the Barcelona transport authority (Àrea Metropolitana de Barcelona) in Spain set up a 'feminist view group', with a team of seven, with the specific remit of improving mobility and transport from a feminist perspective<sup>40</sup>. This recognises that women use public transport more than men in the city but are less satisfied with it and also that women contribute less to climate change.

The work carried out by the unit so far includes supporting the reorganisation of the city's bus network in a way that improves its inclusivity; combatting 'manspreading' on public transport (sitting positions where legs are far apart, encroaching on adjacent seats); introducing a demand responsive night bus service; ensuring there are toilets for bus drivers at the end of routes; and working on more comprehensive data, analysis and engagement around the current use of public transport by women and how to better meet women's priorities in the future.



## THE TRIUMPH OF PLACE AND THE FUTURE OF STREETS

Cities used to prioritise facilitating movement (often by private car) over quality of place, hence wave after wave of road building in urban areas all designed to move more traffic more quickly into and through urban centres.

This road building transformed the neighbourhoods it passed through, often in a very negative way – severing communities, disproportionately impacting poorer neighbourhoods and resulting in significant noise, air pollution and visual intrusion.

Such schemes were often self-defeating as more road capacity has a tendency to generate more traffic mean-



ing that promised improvements in journey times and congestion reduction were not necessarily achieved in the longer-term.

As traffic levels (and the demand for parking) increased in urban centres, active travel became less attractive and more dangerous and buses became less competitive as congestion slowed journey times and disrupted reliability. The urban realm too became degraded as air pollution, noise, severance and visual intrusion worsened.

However, in recent decades a backlash has occurred in many cities around the world, with more priority being given to the quality of place in decision making rather than prioritising getting as much traffic as possible through that place. This has led to measures to ban, or significantly reduce, traffic in urban centres as more space is given over to people and less space is reserved for vehicles.

Indeed, in many city centres the place makers are driving transport policy rather than the traffic engineers. Transport planning now has to fit around an overriding objective of creating an urban realm where people want to live, work and play, which tourists want to visit and which investors want to put money into. This translates into more pedestrianised and low traffic neighbourhoods where there is more space for walking and cycling but also for outdoor hospitality and events.

This is positive for active travel and can make public transport more competitive where private car access has been restricted. However, at the same time there is the danger that public transport is pushed to the margins of urban centres. This in turn emphasises the need to ensure that the quality of public transport vehicle design, the way it is presented and marketed, and the environmental standards it operates to, complements rather than detracts from the high-quality urban realm that the place makers are seeking to create. It also has implications for governance in terms of how the governance of public transport relates to the governance of urban space more widely. If a transport authority is not in the room, or influential, over

40 A Feminist Approach to Transport Planning: the example of Barcelona, presentation by Maria Conill de Azpiazu, Àrea Metropolitana de Barcelona to UITP OAC meeting April 2022

decisions being taken about the future of a city's major squares and avenues then the greater the danger is of it being side-lined.

More widely, there are challenges around the many legitimate calls on what street space (or the space between the buildings) should be used for. A non-exhaustive list includes: buses; trams; motorbikes; bikes; pick up and drop for taxis; cars; car hire; delivery of goods and services; climate resilience (including trees and street beautification); anti-terror measures; emergency vehicle access; street cafes; access for people with different kinds of disabilities; signboards and outdoor sales areas for shops; anti-crime measures; utilities; street furniture and signage; bins and waste removal; occasional events (such as festivals, funeral corteges, building works, house moves); charging infrastructure; sensors and other smart street tech; docked and dockless bikes, scooters and other personal mobility devices; infrastructure and charging for electric vehicles.

It is very difficult to reconcile all these changing demands on 'future streets' but in the absence of some kind of coordinated approach then there is a danger of conflict, sub-optimal outcomes and public transport losing out. Again, this raises questions around the role that transport authorities play directly or indirectly on street space (particularly on major public transport routes).

## RECLAIMING THE STREETS IN PARIS

In France, the Mayor of Paris, Anne Hidalgo, has set out to make the city 'more ecological, social and humanist'.<sup>41,42</sup> During her first term she banned cars from large stretches of roads alongside the banks of the river Seine. During the pandemic, 50 km of cycle lanes were introduced which will be made permanent with the busy throughfare Rue de Rivoli made predominantly for cyclists with increased space for buses and taxis. The speed limit on the Paris ring road will be limited to 30kmh by 2024 with priority lanes for buses, 'clean cars' and carpooling.

A low traffic zone is also planned for the heart of the capital – under the proposal most vehicles would be banned from an area covering the city's four central arrondissements, including the two islands on the river Seine, the winding streets of the Marais and major landmarks such as Notre-Dame cathedral and the Louvre museum. The

zone would also extend across a large part of the historic left bank and its Saint-Germain-des-Prés neighbourhood. Alongside this, a major reduction in on-street parking is planned as well as a big expansion in investment in cycle priority and improved bike parking facilities and new urban parks and 'forests'.

Mayor Hidalgo is also a supporter of the '15 minute' city concept:

"There is an appetite for more liveable, people-oriented cities that has been reinforced by the COVID-19 crisis, driving a surge of interest in the '15-minute city'. A green and thriving neighbourhood should enable residents of all ages, backgrounds and abilities to meet their daily needs close to home. It should support the local economy and green jobs, provides opportunities to walk, cycle and take public transport, offer better waste management solutions and cleaner energy systems and incorporate green infrastructure – all of which contribute to accelerating climate action, while benefiting other critical urban agendas, such as promoting equity, prosperity, resilience and quality of life."



## NEW MOBILITY, NEW TECHNOLOGIES AND NEW BUSINESS MODELS

New technologies and business models are having a transformative impact on urban transport. A proliferation of new vehicle technologies opens up the potential for urban vehicle fleets that are greener, smarter and more connected. This includes the potential for semi and fully automated vehicles. The means by which people pay for, and access, public transport is rapidly moving from paper tickets to smart media (including smartcards, bankcards, watches and smart devices). Beyond that 'Mobility as a Service' options are opening up whereby travellers

41 C40 Cities Climate Leadership Group, Arup (2021) Green and thriving neighbourhoods: A pathway to net zero, featuring the '15-minute city', available from: [https://www.c40knowledgehub.org/s/article/Green-and-Thriving-Neighbourhoods-A-pathway-to-net-zero-featuring-the-15-minute-city?language=en\\_US](https://www.c40knowledgehub.org/s/article/Green-and-Thriving-Neighbourhoods-A-pathway-to-net-zero-featuring-the-15-minute-city?language=en_US)

42 Urban forests, bikes and Airbnb: Paris mayor Hidalgo sets out six-year plan, The Local.fr, 23/07/20, available from: <https://www.thelocal.fr/20200723/urban-forests-bikes-and-airbnb-paris-mayor-hidalgo-sets-out-six-year-plan/>



can buy packages of mobility which could include the full range of available travel modes. A single app on a smart device could provide information about all the options for making a journey as well as facilitate payment to make those journeys, be it by public transport, private car, car hire, bike hire, ride share or taxis. Meanwhile the profusion of data enabled by new technology, and the ability to rapidly process that data, means that transport planners are better able to analyse and present the implications of choices that can be made about transport systems and schemes. There is also the potential of open data to stimulate new products and services for travellers, helping to make joined up travel information easy to access.

Technological change is also combining with social change and new business models in a way that has wider significant implications for transport. In particular, the shift from ownership models to sharing or rental models is one reason why attitudes to car ownership are changing – particularly among younger people. Meanwhile, new players (from Californian tech giants to local start ups) are offering new services which capitalise on wider transformative technological and social change. These include companies which provide information about transport services and payment via apps, as well as app-based taxi and private hire operators. Vast amounts of venture capital is being deployed to pump prime and sustain new private sector transport offers which do not cover their costs in the short term and which may prove to be durable in the long term or which may disappear overnight.

Technological change can contribute to many of the goals that transport authorities have. Better information and payment mechanisms for travel can help people make better journeys, automatically obtain the best fare and avoid congested times and places. Improved vehicle design can better accommodate the needs of an ageing society and more flexible formats for transport provision can help connect unemployed people to work. New vehicle technologies can radically reduce vehicle emissions and information technology can make the most efficient use of vehicle fleets.

At the same time, these new mobility formats and business models can bring challenges. Challenges like below cost taxi services abstracting passengers from public transport and increasing congestion or the over-provision of dockless hire bikes.

Much of this comes down to seeking to balance the consumer interest with the wider public interest.

There are arguably two principal dimensions to how best transport authorities might respond to these waves of change.

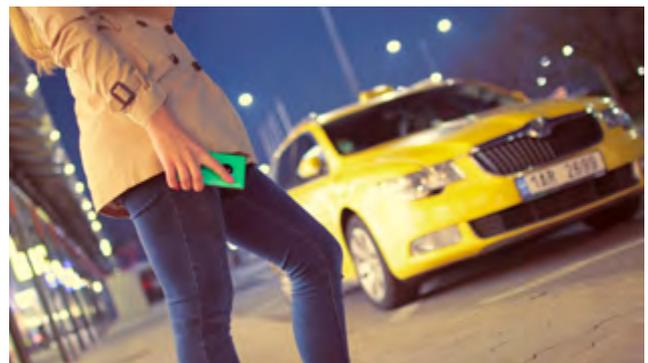
The first is their overarching position or attitude, the second is around capacity.

### Overall approach

Underpinning these questions is the wider approach a transport authority might take to new mobility and new business models. At the broadest level this can range from ‘laissez faire’ at one end of the spectrum to ‘command and control’ at the other.

However, there is also the potential for:

- authorities to take different positions on the spectrum in relation to different new mobility formats or business models
- authorities to seek to provide a service directly (such as an overarching MaaS product which could include both new and traditional mobility options – from hire bikes to mass transit)
- utilising ‘sandbox’ powers to open up parts of a city to trial or experiment with new mobility formats or business models
- using licenses or other means to raise revenue from new mobility providers to support non-commercial services which provide social benefits (for example for low income neighbourhoods) which the private sector is unlikely to concentrate on
- having a culture of innovation themselves, or a part of their organisation which focusses on innovation (or both), so that the authority is also providing new mobility services directly



There are also issues for authorities in relation to the overall role they may want to play...

#### ...on data:

- Do they wish to make the data they hold freely available to new entrants or do they wish to withhold it, charge for it, licence it or exchange it? And is this on a case-by-case basis or in line with broader criteria?
- Do they wish to set requirements for new entrants for the sharing of their data?

...on new mobility formats (such as dockless or docked two wheelers for rental):

- Do they wish to have any form of licencing or regulatory role (which could include in relation to safety, overall numbers, user and operator behaviour)?
- Do they wish to ensure information, pricing and promotion is under the wider transport authority umbrella, alongside public transport?

Similar considerations apply to app-based formats for existing mobility services such as taxis and private hire vehicles.

#### ...on connected and automated vehicles

- Do they wish to play a role on the regulatory regime on safety?
- Do they want to play a role in trials and testing – from facilitating to investing directly?
- How will they assess the implications for the highways network?

#### ...on MaaS

- Do they want to provide financial support for MaaS offer(s) to make the pricing more attractive and competitive than those provided commercially?
- Do they want to be part of wider private sector-led MaaS offer(s) or do they want to be the provider?

## Capacity

These shifts create significant challenges for both the capacity and ways of working of transport authorities. For example:

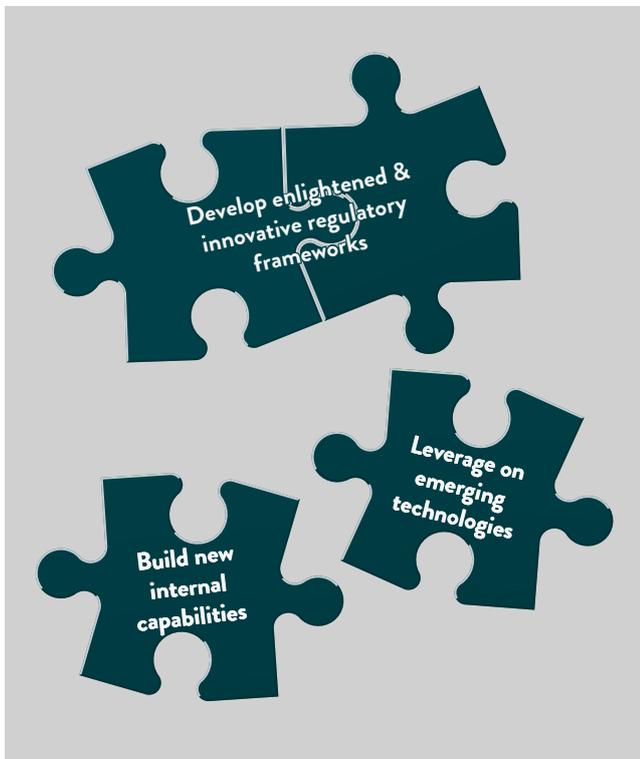
- New technology is generating an exponential increase in data but do transport authorities have a strategy, and the data scientists and analysts, able to take advantage of this data in order to generate useful information on which the authority can act? Transport authorities have tended to be dominated by traditional engineering but will there be a need for a shift towards digital and data scientists and engineers?

- Having, and maintaining, the systems able to generate and take advantage of this data has costs attached. How is this to be paid for?
- New business models and mobility formats can sit outside a legal and regulatory framework which pre-dates them. What role does the authority play in amending, interpreting or enforcing the existing legal and regulatory framework to take account of these new models and formats?
- A vast number of companies regularly approach transport authorities to make the case for the benefits of different technologies and systems for the staff, customers and cost base of the authority, many of which by the nature of cutting-edge technology and innovation will be unproven. How does a transport authority recruit and retain the skills necessary to be an informed client?
- How does a transport authority ensure that it is able to liaise and engage effectively with all the various key actors in the new mobility landscape?
- Some highly capitalised new mobility entrants can bring with them considerable legal, public relations and financial resources. How does a transport authority respond to this where there is a difference of views, and how is this resourced?
- How does a transport authority retain the capability to horizon scan and look ahead to what's next so it can shape change rather than be swamped by it?



## TURNING DISRUPTION INTO OPPORTUNITIES IN SINGAPORE

The Singapore Land Transport Authority's (LTA) approach to new forms of mobility and business models is to 'turn disruptions into opportunities'. This is underpinned by creating a regulatory framework which is flexible and facilitative to allow businesses to thrive whilst safeguarding the public interest and meeting wider transport objectives. It also rests on the LTA being innovative in the policies and regulations it adopts for different forms of new mobility and business models as well as enhancing its own capacity. To this end, the LTA established a data science and analytics division, an economics unit, a planning analytics unit, as well as operations research capabilities for automotive and software engineers.



**Data** is key to effective transport planning and provision which is why Singapore has established the LTA Data-Mall, a data repository of land transport-related datasets (such as bus arrival times), for enterprises, third-party developers, researchers, and other members of the public to utilise, to promote collaboration and co-creation of innovative and inclusive transport solutions.

On **bike-sharing services**, the LTA initially adopted an approach of embracing innovation and working with bike-sharing operators to allow the market to develop and evolve on its own. However, it quickly implemented a licensing regime to manage rampant indiscriminate parking arising from proliferation of shared bikes and clamp down on existing operators' poor practices in ensuring



proper bicycle parking. The regime also encourages innovation via a regulatory 'Sandbox' Licence to allow new players with little or no local experience to enter the market with less stringent requirements.

On **Private Hire Vehicles** the LTA embraced the opportunities that came with the arrival of new ride-hailing platform players (such as Grab), which disrupted the traditional taxi industry, to reshape the point-to-point (P2P) transport sector. LTA initially adopted a light-touch regulatory approach for private hire vehicles in 2017. As the sector matured, a new regulatory framework was introduced in October 2020 to license P2P operators with 800 or more vehicles on their platforms based on the type of services they provide i.e. street-hail, ride-hail or car-pool services. All licensed street-hail operators are required to charge metered fares and publish the rates for the various fare components for street-hail trips. For ride-hail service operators which were previously not regulated, they are now required to make clear to commuters, at the point of booking, the fare that will be charged for the trip, and publish the quantum for any additional charges that may be levied (e.g. fee for unplanned additional stops). The new framework provides LTA and the Public Transport Council (PTC) with greater regulatory oversight over the P2P sector, and allows LTA to impose safety requirements on P2P operators and requirements to ensure fare transparency. At the same time, there are safeguards to ensure that the P2P market remains innovative through an open and contestable market. To facilitate an open market, LTA prohibits licensed operators from offering exclusive arrangements that prevent drivers from driving for other operators as such arrangements make it difficult for new operators to enter the market.

On **automated vehicles (AVs)**, Singapore is taking a proactive, 'guiding hand' approach to the deployment of AVs, (topping the 'policy and legislation' category in KPMG's Autonomous Vehicle Readiness Index)<sup>43</sup>. The densely populated city-state already has strong disincentives to

43 Available here: <https://assets.kpmg/content/dam/kpmg/tw/pdf/2018/03/KPMG-Autonomous-Vehicle-Readiness-Index.pdf>

private car ownership and is keen to actively shape AVs as an opportunity to transform public transport and further reduce reliance on private cars<sup>44</sup>. As far back as 2014, Singapore's Ministry of Transport set up the Committee on Autonomous Road Transport for Singapore together with the public sector, academia and industry to provide thought leadership and guidance for the development of AVs. LTA has a three-phase road map for deployment of the technology.

➤ Phase One involves trials in testbeds and controlled environments, expanding to more complex environments as and when ready, including extensive testing at the AV Test Centre which emulates real world road environments at its 2-hectare site. Phase Two involves limited town deployment of mass transit/shared AVs on selected commuter services.

➤ The final phase will see island-wide deployment – new towns will be designed for the operations of AVs and existing towns will be retrofitted.

The progress of the road map is highly dependent on the state and maturity of AV technologies and the available standards to qualify the safe, wide-scale use of such vehicles on public roads. Public acceptability for this new form of driverless mobility will also be key.

In terms of regulations, a key development was the amendment of Singapore's Road Traffic Act in 2017 to provide the Minister for Transport with the power to make subsidiary legislations to regulate the use of AVs via a sandbox arrangement. This provides the flexibility needed to respond to new AV technologies. The AV Sandbox is currently valid till 2027.<sup>45</sup>



<sup>44</sup> 'Singapore's Strategy on Autonomous Vehicles and Public Transport' presentation by Jeremy Yap, Land Transport Authority, Singapore at the UITP Organising Authorities Committee meeting, Lyon 2018.

<sup>45</sup> 'Singapore's Land Transport Master Plan 2040' presentation by Jeremy Yap, Land Transport Authority, Singapore at the UITP Organising Authorities Committee meeting, Bologna, March 2019.

## CONCLUSIONS

Metropolitan areas are the drivers of national economies and the places where the battle to limit damaging climate change will need to be fought and won. If they are to play that role in a way which is also equitable then they will need public transport systems (given resources will always be finite) where the right choices and trade-offs have been made on where services run and on how those services are developed.

The report has provided examples of how transport authorities have been able to skilfully respond to these challenges through policy innovation, attracting and retaining talent and skills and developing corporate capacity and memory. Through this they have been able to earn trust, blend funding sources and be in a position to move quickly when wider politics or circumstances open up to expand sustainable transport provision at pace and scale. At their best they have also become a respected symbol for the places they serve, enhancing the metropolitan area's allure and providing wider civic and commercial leadership.

This report has also shown that the historical, cultural and geographic contexts for decisions around the governance of metropolitan area transport provision varies significantly around the world and that no one size fits all. However, in acknowledging this, the report has sought to set out the advantages of transport authorities for metropolitan areas, their benefits in principle, and their achievements in practice.

If the argument is accepted on the benefits of establishing a metropolitan area transport authority where one does not exist, the report makes the case that the core issues to be determined are:

- the area it will cover (and how any overlap or boundary issues with neighbouring areas will be managed)
- its legal status, powers, responsibilities, governance structures and accountability
- how it will be funded and what responsibilities it will have for its own funding

In practice there are many ways in which these key issues have been worked through in different places and even transport authorities which may appear similar at first glance turn out on closer examination to have significant differences in their format and powers which in turn can evolve over time.

In its 2013 report (*Institutional Labyrinth: Designing a way out for improving urban transport services*)<sup>46</sup> the World Bank made the case for a maximalist approach to the powers that a transport authority should have, arguing that:

'It is important to provide a financial structure through which a lead institution can carry its own weight vis-à-vis other ministries and agencies. It should be able to pay for what it needs, and it should be the only channel for funds needed for urban transport. Its sources of funding must be clearly identified and secured.'

And that:

'Lead institutions tend to succeed when they have strong external support, are provided the required manpower and internal financial capacity to live up to their mandate, and prove themselves able to deliver public value.'

If the logic of this argument is accepted (and is consistent with the local context) there may be both political and organisational objections and resistance around what is an effect a transfer of power away from existing institutions.

In contemplating a transition to a more fully empowered metropolitan area transport authority, issues to consider include:

- without the highest level of political commitment a rapid transition is unlikely
- where such high-level political commitment is not in place, achieving consent for such a transition across a metropolitan area can take time and might require a patient stepping stone approach over a period of time. This can include taking responsibility for roles which no existing institution was responsible for or roles which other institutions in practice are willing to shed

46 [UrbanTransportInstitutionalLabyrinth.pdf \(worldbank.org\)](#)

- ▶ playing a wider and key role in establishing interlinked long term strategic plans for transport, land use, carbon reduction and economic development can also be a sound foundation
- ▶ existing institutions can be resistant to giving up their own powers, positions and roles so thought needs to be given to how different cultures, pay scales and practices are harmonized and transitioned
- ▶ at the same time, to succeed a transport authority will need to attract and retain the talent that can get things done on the ground in a way that creates confidence in the new institution

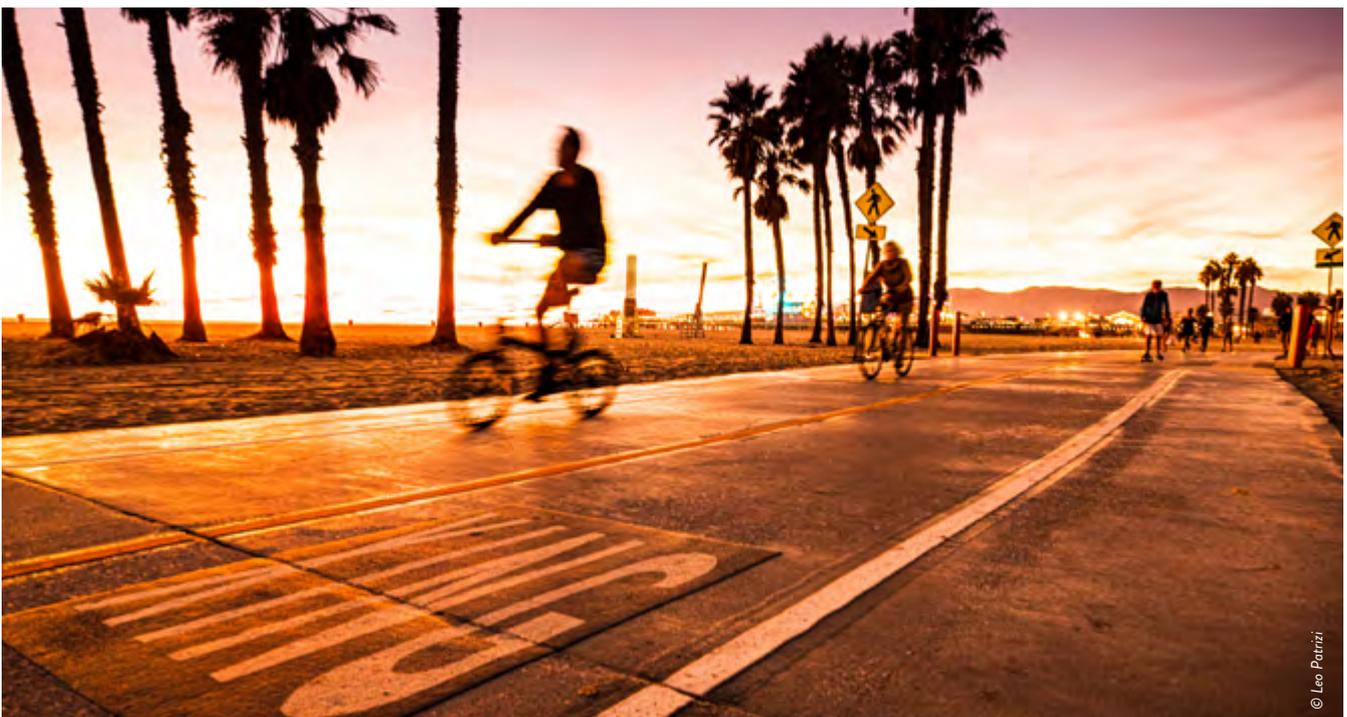
Round the world transport authorities in all their different guises have kept metropolitan areas moving day-in and day-out whilst at the same time always looking to the future as to how they can improve the service they provide and how they can manage the constant churn of social, economic and environmental change. In doing this they seek to serve the wider public interest whilst making difficult choices as to what priorities to pursue and how they are to be funded. They have been there for the places they serve in the most difficult of circumstances (from pandemics to natural disasters), they have kept public transport going when mass private

vehicle use has been politically favoured and when the tide has turned they have been ready to grow and expand public transport.

But metropolitan areas are constantly in flux and we now live in an era where the wider challenges that they face are becoming increasingly complex and cross-sectoral in nature. Challenges like:

- ▶ making timely decisions on how best to reduce carbon emissions whilst improving climate resilience
- ▶ realising the consumer benefits of new technologies, new mobility formats and business models whilst at the same time protecting the wider public interest
- ▶ balancing the need to improve the quality of places whilst still providing transport to those places
- ▶ ensuring that governance reflects the full diversity of the places it serves in the way it works and the decisions it takes

Based on their achievements already and the complex challenges that twenty-first century metropolitan areas face, the case for transport authorities for metropolitan areas is stronger than ever.



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**TRANSPORT  
AUTHORITIES**

**Maximalist  
transport  
authority**

- Solely responsible for public transport provision
- Responsibilities for other modes eg active travel,taxis and so on
- Responsibilities for highways
- Regulatory capabilities for new mobility / business models
- Strong linkage with wider economic / land use planning
- Able to raise funds direct from variety of sources
- Extensive capabilities and capacities across range of disciplines / able to recruit and retain talent

**Empowered  
public transport  
authority**

- Responsibilities for public transport provision
- Ways of working with bodies responsible for other modes / highways / land use planning / economic development
- Robust funding arrangements
- Strong technical and professional capabilities in public transport sphere

**Minimalist  
transport  
authority**

- Sets out broad strategies and investment priorities
- A degree of influence and oversight over public transport provision
- Part of a complex landscape of public and private governance for public transport provision, highways, other modes, land use and economic development
- Limited capabilities and capacities

## FURTHER READING AND SOURCE DOCUMENTS

UITP publish many invaluable briefings and reports in relation to effective urban transport governance. The Better Urban Mobility playbook ref || [Better urban mobility playbook | UITP](#) || provides a highly accessible overview. It is complemented by many other topic-specific publications on everything from new mobility to decarbonising vehicle fleets, and from integrating transport and land use planning to organisational diversity.

UITP members can also access the transport organising Authorities toolbox here:

[UITP MyLibrary - Transport Organising Authorities Toolbox](#)

The website of the Sustainable Urban Transport Project provides a rich source of reports, briefings and materials on good urban transport policy practice and governance

[Startseite - SUTP](#)

Particularly useful on urban transport governance is SUTP module 3f – public transport integration and transit alliances

[SUTP Module 3f – Public Transport Integration and Transit Alliances - SUTP](#)

This paper by Måns Lönnroth on the Governance of Metropolitan Transport provides an excellent, highly recommended and incisive big picture overview of why metropolitan transport authorities are shaped as they are and how they can be improved

[Governance of metropolitan transport\\_Synthesis 190528.pdf \(vref.se\)](#)

The paper draws on further regional-specific papers which are also very illuminating

[Volvo Research and Education Foundations Governance of Metropolitan Transport, a synthesis by Måns Lönnroth \(vref.se\)](#)

This 2013 report from the World Bank (Institutional Labyrinth: Designing a way out for improving urban transport services – lessons from current practice) provides a lucid and accessible analysis of different formats for transport authorities and ways of overcoming the challenges of establishing them

[Institutional Labyrinth : Designing a Way Out for Improving Urban Transport Services--Lessons from Current Practice \(worldbank.org\)](#)

This is a good analysis of the issues and challenges (with case studies) of financing future urban mobility

[REPORT\\_FINMOB\\_EN\\_VDEF.pdf \(lafabriquedelacite.com\)](#)

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This is an official Report of UITP, the International Association of Public Transport. UITP has more than 1,600 member companies in 99 countries throughout the world and represents the interests of key players in this sector. Its membership includes transport authorities, operators, both private and public, in all modes of collective passenger transport, and the industry. UITP addresses the economic, technical, organisation and management aspects of passenger transport, as well as the development of policy for mobility and public transport worldwide.

The Urban Transport Group represents the transport authorities for the largest metropolitan areas in England (Greater Manchester, Liverpool City Region, London, Tyne and Wear, South Yorkshire, West Midlands and West Yorkshire). Our wider associate membership brings together the transport authorities serving Cambridgeshire and Peterborough, Nottingham, Strathclyde, Tees Valley, Wales, West of England and Translink in Northern Ireland.



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