

European Policy Guidelines on Shared Micro-Mobility



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1. Introduction

Vianova has prepared this report on the key issues that need to be considered by city authorities, micro-mobility operators, civic partners and local residents. Based on our extensive experience considering, developing, delivering and providing management insights on shared micro-mobility to cities, we have the deep understanding to provide these recommendations.

The shared micro-mobility industry is still very new in cities across Europe, and the world. The 2020 Covid19 crisis and the resulting needs for social distancing has reset the transport sector in cities globally. Public transport systems, while they remain essential, are having to deal with reduced capacity due to customer spacing as well as concerns about travelling in confined spaces. Thus, this is a critical time to provide the insights provided in these guidelines.

The note is divided into recommendations on the broad areas below, with more specific comments on relevant topics:

- Broad-based civic policies;
- Managing issues of the public environment;
- Managing interactions with other transport modes;
- The efficient operation of micro-mobility services.

2. Civic Policies

2.1. Policies

- There are a number of issues to be considered in the development of a city micro-mobility plan including:
 - the level of protected micro-mobility space within streets;
 - the role of micro-mobility in meeting carbon reduction targets and air quality ambitions;
 - the role and linkages to classic public transport and the design of multi-modal hubs.

However, it is suggested that in almost all cases there is a strong role for shared micro-mobility, but without a clear set of policy statements from the city, it is difficult for micro-mobility and particularly, the operators, to define local investment plans.

- Recommendation:
 - **The city mobility policy should align with the City's Sustainable Urban Mobility Plan (SUMP).**
- The city mobility policy should provide a context for the size of a potential (shared) micro-mobility fleet in the city and the geographical coverage. This will also enable an

operator commercial model to be defined and set a context for any discussion about service subsidies or exclusivity and licensing models. It is important for the image, usefulness and attractiveness of shared micro-mobility services that the size of potential markets is related to the size of provided fleets. Thus, the operator(s) can adequately evaluate — often in discussion with city authorities, and depending on service scheme growth over time — peaks in demand, as well as seasonal declines. This will also prevent unnecessary street clutter as the inherent demand will tend to move devices onwards over time.

- City authorities will need to decide, based on the overall planning and procurement context, how to enable deployment of shared micro-mobility services. A number of models are available:
 - ❖ City monopoly based on in-house operation or via a supplier (operator);
 - ❖ One single tendered franchise;
 - ❖ A number of tendered franchises — perhaps between 2 and 4 for similar devices. These may overlap across contiguous areas, or relate to locations within a city or for types of shared micro-mobility vehicles;
 - ❖ A licencing model based on meeting minimum requirements, but then enabling as many operators as meet these requirements to freely operate;
 - ❖ A completely open market where any locally legally acceptable shared micro-mobility business is able to operate any number of vehicles in any area.

These models are listed from most market restrictive to most commercially open.

The extremes of the list are not recommended as they can stifle innovation, user choice and lead to higher user costs. An exception may be in small cities — less than 50'000 inhabitants — where a single operator may be most appropriate. A fully open market in a commercially attractive city can lead to the on-street chaos seen in cities like Brussels and Paris a few years ago. The fully open model will also lead to market instability as operators will find it challenging to defend their investment and this will eventually lead to user dissatisfaction.

- **Recommendations:**
 - **it is recommended that city authorities consider the most appropriate local model of a single or multiple tendered franchise based on meeting very specific business and operational criteria and performance. Varying models may be selected based on the type of micro-mobility vehicle.**

- **we believe that during the deployment of initial shared micro-mobility services a city authority should simultaneously establish the ability to monitor operations and enforce regulations across all of the local micro-mobility operators. This could be via a third party software service.**

These types of management systems are already common in terms of managing classic public transport, road vehicles, urban parking, etc. This is for shared micro-mobility to be an effective part of the overall mobility system, to be data led in its development, for the creation of relevant local mobility policies and for effective regulation development and enforcement. This will also enable effective street level management of these services from initial deployment and significantly improve the public image of the services, their operators and the city authorities.

2.2. Sustainability

- Micro-mobility is inherently more sustainable than car based transport, however, a number of sustainability issues still need to be considered.
 - **Recommendations:**
 - **e-scooters must have multi-year lifecycle and be based on an easily repairable design;**
 - **The batteries in the devices should be swappable for charging – thus minimising device transport and increasing device life cycle;**
 - **Maintenance including device relocation should be delivered via vehicles that are zero emission;**
 - **Micro-mobility services should make commitments to hire local workers and in particular workers from excluded communities;**
 - **Micro-mobility hubs should be seen as multi-functional centres which are a local opportunity for a sustainable intervention.**

2.3. Equity

- The needs of an “equitable” public transport service across demographics and areas in European cities is well understood. Micro-mobility may be considered more affordable means of transport for many city residents. Purchasing a basic bicycle as a means of mobility is probably one of the most cost efficient means. Shared micro-mobility services may appear to be low cost. But some operator business models may lead to short distance trip costs well in excess of classic public transport. If operators are only incentivised to

consider commercial issues, they will also naturally target the most lucrative local areas and trip needs to build commercially viable business.

- The equity in the deployment of shared micro-mobility services is also key in order to build a robust long term business case for the city and operators as well as develop long term community support.

The mission of shared micro-mobility in city centres should be seen as useful and exciting, for civic persona and innovation as well as a means of connecting inner city and peripheral communities where classic public transport is not usually able to provide the depth of viable mobility options. Accessibility should also be considered in suburban areas where employment and residential opportunities are dispersed while public transport may be limited.

- Female travellers, older and certain social groups are typically not using cycling and shared mobility options as much as young, wealthier males. While research is ongoing on these trends, as well as measures to deal with them, the deployment of shared micro-mobility in any city should directly challenge these issues with relevant deployment designs.

- **Recommendations:**

- **Shared micro-mobility should consider equity at the programme specification and design level (or tender). The system should be designed to cover a wide segment of the local community. Cities should consider a mix of techniques, which should be monitored after contract award, to encourage social equity including:**

- **reduced fees or public subsidies in certain areas, at certain time;**
- **minimum fleet sizes in certain areas;**
- **the location of mobility hubs;**
- **service promotion that challenges user stereotypes;**
- **direct community engagement during design phase.**

→ **Best practice in “City Policies” across European cities include:**

- ◆ Paris regarding the engagement with multiple operators in a complex ecosystem as well as the deployment of mobility hubs;
- ◆ Marseille has been implementing the first European tenders for micro-mobility services;
- ◆ Zurich in incorporating heavy rail and micro-mobility services together.



3. Public Environment

3.1. Public space / Parking

- Public space in cities is highly limited and there are a number of valid competing users for this space - deliveries, pavement retail, on street service devices such as litter bins and utility access, vehicle parking, etc. The design of public spaces is also a key part of placemaking and urban regeneration in contemporary European cities.

Any contemporary European city that is attempting to meet its environmental targets for carbon reduction, air quality, noise limits, accessibility, safety and currently social-distancing will need to provide substantial public street space for public transport as well as micro-mobility. Thus, (private) car parking should be limited, and if possible eliminated in the most environmentally sustainable and ambitious schemes.

- Traditional on-street car parking spaces provide the opportunity for transitioning this space from environmentally unfriendly vehicles to personally owned as well as shared micro-mobility. Urban space utilization can be increased via dedication to personal and shared micro-mobility. This space can also be used to create connected sustainable transport device lanes, public relaxation spaces such as “pop-up mini parks or galleries”,

as well as create safe and dedicated space for vehicle deliveries. Cities should not shy away from this innovative space reallocation.

Commercial delivery and parking creates congestion in the use of public space in cities. This necessary urban use should also be regulated through the use of controlled zones and/or permits to enable efficient operation of the city.

- **Recommendations:**
 - **Space for shared micro-mobility is incorporated into consideration of urban design. This includes safe and dedicated parking (regarding users, other pedestrians and drivers).**
 - **Micro-mobility travel lanes and parking should be shared across e-scooters and bicycles including e-bicycles, while shared e-cars and (higher powered) e-mopeds should use traditional traffic lanes. Designs and locations should be openly discussed with local operators. Usage of these facilities should be regularly monitored and adjustments to capacity implemented over time.**
 - **It is expected that the most dense network of micro-mobility parking hubs will be in city centres and adjacent to major public transport hubs.**
 - **Outside of these city centres/ transport hubs, micro-mobility parking is also still needed at key intersections, train stations, activity hubs, employment centres and should be via dedicated hubs with active management/ enforcement.**
 - **Suburban areas may be serviced via fully floating shared micro-mobility devices which can be parked more informally. These devices will be located by users principally using smartphone devices, In these cases it is critical that these users are given clear information about how to park the devices and geo-zones can be understood and respected.**
 - **Pricing can be used to nudge users to redistribute devices to meet demand. This may include dealing with tidal flows from rail hubs in city centres as well as concentrating devices at key demand locations in suburbs.**
 - **Commercial parking and deliveries should also be controlled in urban areas.**

→ **Best practices in “Public Environment” include:**

- ◆ Micro-mobility hubs that have been created in cities, for example, in Germany and Switzerland. Excellent examples are in Bremen, Germany as well as the MobiPunt scheme in Flanders, Belgium;
- ◆ Micro-mobility hubs have been developed in Bordeaux, as well as other European cities (Paris, Brussels, Lisbon)
- ◆ Micro-mobility travel lanes are well developed in Dutch cities. These designs create extensive, connected, and clearly visible travel routes, and should be expanded more widely.



4. **Interactions with other Modes**

4.1. **Transport Hubs**

- Major transport hubs are expected to be key locations for micro-mobility parking hubs and should be connected to dedicated lanes for the use of the devices. These lanes should create separation from general car and truck traffic as well as high density pedestrian traffic and thus, increase safety for all users.

The design of these micro-mobility hubs should be used as an opportunity to engage rail operators in encouraging micro-mobility as a local transportation mode for their users. It is also an opportunity to provide ancillary services such as showers and lockers, device support facilities such as membership walk-in offices and maintenance facilities.

4.2. Intermodality

- Micro-mobility offers the ability to significantly enhance the last mile offering of classic public transport, particularly regarding heavy rail services. Micro-mobility provides an opportunity for resource efficient service to a much more diffuse network of locations than classic buses. Micro-mobility services are also usually less expensive than taxis. E-bikes also may be well suited to this market. Innovative rail operators such as SBB in Switzerland are particularly exploring these types of models. These use cases are particularly relevant in city centres, but as well be in suburban or rural areas.

Micro-mobility can also take the form of a personally owned device which can be transported on a rail service for use at either end of the journey. This could be an e-scooter or folding bicycle — as well as full sized bicycle — in some counter peak or off-peak journeys. The appropriateness and level of encouragement or support for these types of services should be discussed with rail operators and be discussed within the city SUMP.

4.3. Day to Day Management

- Shared micro-mobility has a key role in managing traveller dispersion during delays on the classic public transport network. For example, during rail delays, travelers may postpone journeys, walk or use available shared micro-mobility devices to complete local journeys or reposition themselves to use alternative routes.

This is hugely beneficial as it relieves crowding as well as safety issues at constrained stations. This cross-modal thinking should be considered in the local SUMP as well as in selection of an operating model for local shared micro-mobility services. Classic public transport services, as well as road services will typically be managed using real time data and this will be provided to users via a range of means. Cross-operator real time availability data should also be collected from shared micro-mobility operators — there are a range of technical approaches and standards — and used for system management as well as provided to local travellers to ensure a fully transparent and integrated transport system.

- **Recommendations:**
 - **Micro-mobility hubs should be created for personal as well as shared micro-mobility devices at key transport hubs.**
 - **Micro-mobility (shared and personal) offer significant opportunities to develop an improved range of multi-modal trip opportunities. These modes should be included in the city SUMP.**
 - **Real time data on shared micro-mobility systems should be collected and used, along with data from classic public transport in urban mobility management.**

→ **Best practice in” Interaction with other Modes” include:**

- ◆ SBB in Switzerland has been proactive in implementing micro-mobility management processes around its main rail hubs — particularly in Zurich — as well as considering how these types of services can complement its rail network;
- ◆ The Netherlands shows numerous excellent examples of extensive and dedicated micro-mobility lanes for access/ egress from rail stations as well as parking. While these facilities are usually for personal devices, they offer the ability to service growing numbers of shared vehicles.
- ◆ Voi has implemented a trial of using e-scooters in suburban Hamburg as a means of providing local mobility across dispersed employment zones



5. **The efficient operation of micro-mobility services**

5.1. **Quality of service**

- Shared micro-mobility services, like other means of transport, should be measured by its ability to provide high quality, reliable day to day services to meet travel demand.

Transparent and available key performance indicators (KPIs) that track the performance of the system should be collected by the operator and city authorities. These KPI's allow for data led conversations with operators about ongoing performance and needed remedial actions.

Shared micro-mobility data should be collected using data standards that enable specific devices to be identified in real time and remedial action monitored.

- A particular concern for shared micro-mobility services in crowded European cities will be avoidance of blocking of the roadway or pavements, and thus “correct” parking. A data led approach will address some of these challenges, but it will remain difficult for GPS technology to identify whether a device is vertical, or has fallen over, and whether is precisely on or off the pavement. It is, however, essential that specific devices can be identified in real time, marked for action and note taken whether the issue has been resolved. This may be by local enforcement officers or the general public. This will have implications for the data standards used in scheme management and will be discussed later in this note.

- **Recommendations:**

- **Shared micro-mobility services should be measured and monitored by agreed KPIs by the operator and city authorities;**
- **Data standards need to be appropriate for the management of a mobility system and thus, device specific and real time.**

5.2. Safety

- Micro-mobility offers users a level of personal movement freedom which is different from classic public transport — this is an attraction of this transport mode. However, safety for users and other road users is of great importance to city authorities. Many of these issues will be dealt with by national regulations.

- **Recommendations:**

- **Cities and operators should develop best practice guidelines to be used in public communication and promotion as well as key statements on critical behavioural issues such as maximum speed limits and use of pavements versus roadways. This will provide a base for understanding “proper” use of these services as well as for enforcement action by local authorities and operators.**

- Key issues will include:

- ❑ Promotion of the recommended (but non-mandatory) use of helmets while riding some devices (scooter/ bicycle). Helmets are already mandatory on powered mopeds. Note, that operators are continuing research on new lightweight helmets and means of storing helmets on shared e-scooters and bikes;
- ❑ The roll-out of protected lane spaces for micro-mobility. While this may be considered complicated, micro-mobility needs to have space where users can feel comfortable that they have some minimum safety on the public right of way. Shared spaces and obligations for common respect across modal users will be

expected in certain locations — such as adjacent to stations and mobility hubs — but clear, consistent and segregated facilities need to be developed over time;

- ❑ Car speeds should be reduced in areas where micro-mobility and traffic could come into conflict;
- ❑ Operators should, as part of the proposed licencing model, have obligations on standards of vehicle maintenance including lighting, brakes, battery power, etc;
- ❑ Other travelers such as pedestrians and road users should also receive communication about the rights and responsibilities of micro-mobility travellers as well as how to report infractions;
- ❑ The GPS abilities in shared micro-mobility devices will enable “geo-fencing” to be implemented to restrict shared micro-mobility devices to certain areas as well as the speed within these areas. The capabilities of GPS in Europe are also increasing and we should see some of these improvements in the coming months to take device location accuracy to within 1m;
- ❑ All of these measures should be monitored via the licensing agreement as well as the micro-mobility management system.

- **Recommendations:**

- **In addition, cities should work with their locally licensed operators to develop micro-mobility device designs and features that enhance the overall safety of the journey.**

- Such features could include:

- ❑ tires with enhanced surface grip
- ❑ greater device stability on rough surfaces
- ❑ enhanced front and rear lights as well as turn indicators
- ❑ bells to alert other road users
- ❑ choice of device colours and reflectors to encourage visibility by other road and sidewalk users.

Operators and cities should also work cooperatively to collect smart device data on roadway surface quality and obstructions that may be leading to micro-mobility user safety issues. Work is also being done with international policy bodies such as the International Transport Forum, and supported by leading operators, to provide city guidance on micro-mobility safety.

5.3. Fees and subsidies

- As outlined, cities have a number of ways of engaging shared micro-mobility operators.
 - **Recommendations:**
 - **A licensing model is adopted with a set of 2 to 4 operators and specific terms of engagement that lay out responsibilities for both the city and operators over a period of time.**
- As part of this licence, a discussion is necessary of whether the operator should be expected to pay a fee to the city to operate within its territory, or receive some form of subsidy to operate. Fundamentally, shared micro-mobility operators are commercial businesses, but up to now not hugely profitable and they face a number of financial issues. They should not be seen as a lucrative source of revenue for the city. In addition, with a few exceptions such as in Hong Kong or the day to day operations of London Underground, classic public transport does not make a profit. Thus, to expect shared micro-mobility operators to immediately make large profits is unrealistic.

And, has been stated throughout this note, shared micro-mobility should be seen as an integral part of the overall mobility system in a city and this should be the focus for operator engagement. How can a quality service be developed and supported by an operator that delivers for the needs of the city, as outlined in its SUMP, at a contained cost to the public purse and that allows for a reasonable return on investment for that operator?

Thus, in exceptional cities, it may be reasonable to seek a fee, such as in Paris or London or New York City, where demand may be expected to be exceptionally large and robust — but costs, service expectations and operational complexity may also be very high. If fees are introduced, they should be specific, targeted and realistic. That is:

- for the number of devices actually being used on the street on a daily basis;
- for the use of specific street infrastructure;
- reflect specific instances of on street device non-performance;
- or a percentage of device income.

Micro-mobility operators are making use of public space to deliver their business objectives and cities should consider a commercial model for the use of this space. Fees should not be large and generic irrespective of the actual service being provided, the income generated or the abilities of specific local operators.

- Similarly, it is not unreasonable to expect that it may be more appropriate for the city to consider some sort of operator “subsidy”. A subsidy in certain circumstances could be a direct payment for operation. More tactically, it may be marketing support to the scheme or integration with other sustainable transport messages. It may entail direct promotion from civic leaders, or preferential access to public space for parking, etc. These ideas are not direct costs to the city, but may entail foregone revenue by city authorities, which can however be hugely useful for the establishment of robust and sustainable operators.

- **Recommendations:**

- **Shared micro-mobility services should not be seen as a lucrative revenue source for the vast majority of cities;**
- **Targeted fees may be appropriate, but they should be specific and output led;**
- **Cities should consider how they can support micro-mobility operators via marketing and promotional services.**

5.4. Enforcement

- Enforcement of rules agreed between operators and cities and included in licences is just and fair. This will create trust across the industry as well as with citizens and local stakeholders. Enforcement should be supported via a data-led approach. But, GPS accuracy is averaging 3 to 5 meters. This is specifically problematic to enforce parking within mobility hubs. Telemetry based enforcement is useful for managing inclusion/exclusion/ low-speed zones.

- **Recommendations:**

- **Cities should use enforcement to create trust and fairness across the micro-mobility ecosystem. Improvements in device tracking will make this enforcement more effective over time;**
- **Certain data standards, such as MDS, have better capabilities to manage enforcement;**
- **Data limitations and local legal requirements will likely necessitate some on-street human interface to support the enforcement process.**

5.5. Data

- Data should be at the core of the planning, development, implementation and monitoring of a successful micro-mobility system in any city. Real-time and static data should be

collected about city assets, across operators and more broadly on anonymous customer and citizen expectations and satisfaction. Micro-mobility data should be related to data from classic public transport as well as road traffic. Selected sets of Open Data should also be provided.

- There are several data standards in use for micro-mobility management. Others are being proposed and developed. It is important to choose a standard that allows granular historical and real-time data.
- Data collection and management needs to comply with GDPR by following best practice for security and organisational measures: data retention policy, data minimisation, etc.

- **Recommendations:**

- **Cities should agree and sign a licence agreement with operators that includes commitments to data provision;**
- **The internationally recognised MDS standard currently provides a robust and reasonable (for operators and cities) standard upon which to base micro-mobility management. This standard is managed in an open and collaborative way by an international open source foundation and is evolving along with the industry.**

→ **Best practice in “the efficient operation of micro-mobility services” include:**

- ◆ Brussels Metropolitan Region is using a micro-mobility management system to review compliance of key local metrics including vehicle rotation as well as levels of daily trips and fleet size per operator;
- ◆ Voi has been working with the International Transport Forum to review and define best practice in e-scooter safety across a range of countries;
- ◆ Cities such as Paris and Zurich have now adopted fees for micro-mobility operators which charge per device per year (e.g. Paris) or per month (e.g. Zürich);
- ◆ Helsinki has embarked on work to use micro-mobility data based on the MDS data standard to improve the accuracy of management of the local service operators.

Voi calls for safer streets: International Transport Forum concludes e-scooters are as safe as bikes

FEBRUARY 19, 2020



6. Conclusions and recommendations

The recommendations in this note will also always need to be considered in the context of local mobility, social and political concerns. However, they form a strong basis upon which to implement a robust shared micro-mobility programme.

Vianova intends to continue to consult the industry with this guide and use it to promote dialogue on the development of best practice and innovative thinking for the micro-mobility industry. Inevitably there are several issues that we have not yet explored in this note, or covered in sufficient depth.

The industry is also still evolving and reacting to the “reset” of the public transport industry following the Covid-19 lockdown in the early spring of 2020. We welcome comments from city authorities, micro-mobility operators, public transport operators, thought leadership groups, landowners as well as complementary users of the public realm including urban logistics, and parking operators.

7. About the authors

As an emerging thought leader in the area of mobility and urban space management, [Vianova](#) is keen to work with cities that are eager to promote new transport modes such as micro-mobility, enforce reasonable and fair rules of deployment on territories, better integrate these new modes into the wider transport system, as well as better manage public space to meet the broader needs for efficient and sustainable mobility. We are working with a range of cities as well as private landowners and mobility operators to deploy this vision.



Giles Bailey

As the Head of Policy & Partnerships at Vianova, Giles leads the development of Vianova's policy agenda and relationships with cities as well as mobility operators. Previously in his career, Giles was the Head of Strategy at Transport for London (TfL) from where he brings +20 years of experience, primordial in helping cities shaping their urban mobility future. Giles holds a Master's degree in Transportation Systems from the University of Toronto.



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8. Contact

For additional resources on urban mobility best practices and policy guidelines, please visit:

www.vianova.io

If you have further questions and/or feedback, members of our team may also be reached via:

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9. **About this document**

These guidelines are intended to share a current overview of collaboration between cities and private mobility operators. It does not constitute legal advice, nor should it be a substitute for legal advice. Practitioners should always consider existing laws in their local jurisdiction.

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