How to guarantee public transport inclusiveness considering aging, gender, disabilities and reduced mobility

Public Transport and Shared Mobility EGUM Subgroup

Topic 4A

Register of Commission Expert Groups and Other Similar Entities, code number E03863

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1. Executive Summary

a. Summary

One of the most important issues of public transport nowadays is how to make it inclusive and accessible for people with all levels of abilities. A more user-oriented and practical approach would be to focus on the accessibility issues in each phase of a journey; from planning to arriving at one's destination. Any measure of transport accessibility should then consider reducing all barriers hindering access to related transport services or making them difficult to use. It is also critical to improve coordination, building knowledge and evidence, integrating the social dimension, and providing resources to meet the EU's goals for transport inclusiveness and accessibility. The recommendations of the chapter highlights accessibility of the transport systems means that:

- **Affordable fares for all**
- **Physical accessibility of the network** caters for people with reduced mobility with ramps, lifts, low floor access vehicles, seats, clear signage that can be understood by people with visibility and illiteracy issues and visitors; access routes to stops and stations; access to pick-up and drop-off stations
- **Ticketing and information** are provided through digital tools, on-site ticketing machines, signage and information, vocal announcements, visual aids. Many mobility services today are offered to customers through digital channels only or not all customers are able to use them, which means they are not accessible to all.
- **A corporate culture focusing on service excellence** that ensure that every journey matters and investments are made to ensure high quality and efficient infrastructure and operations that cater to all.

b. Recommendations

A list of detailed recommendations is included in section 7 in the fields of:

- Accessibility Planning
- Infrastructure and Vehicle Design
- Public Awareness and Engagement
- Fare Systems and Affordability

Moreover, section 8 provides policy recommendations for improving coordination, building knowledge and evidence, integrating the social dimension, and providing resources to meet the EU's goals for transport inclusiveness and accessibility.

2. Introduction

This report is produced by the Subgroup on Public Transport and shared mobility of the Expert Group on Urban Mobility setup by the European Commission. It corresponds to the fourth topic focus of the subgroup: **Guaranteeing Public Transport Inclusiveness**.

Accessibility to transport is a pre-condition for a good social cohesion and economic dynamism of a city. Public transport systems complemented by shared and on-demand mobility solutions have an important role to play to ensure that all citizens can move smoothly from A to B, and access for all to participate in economic, social and cultural activities. Addressing the imperative of ensuring inclusive transport involves a closer look at existing legislation, both at the EU and national levels. The EU has already implemented directives and initiatives that address and emphasize the importance of accessibility in transportation for diverse demographics. This report highlights such existing obligations and delves into the practical aspects of achieving inclusivity in public transport, considering factors such as aging, gender, disabilities, reduced mobility, and income. **Our focus is on understanding the concrete measures outlined in EU legislation to establish an accessible public transport system and, to provide further recommendations on how this can be achieved.**

As cities strive to decarbonize transport, transformative opportunities abound, spanning from fleet electrification to integrated systems and various mobility solutions. However, the comprehensive benefits to the environment, economy, and public health may be unrealized if some users do not feel able, safe and willing to be a part of transport's decarbonised future or if individuals experiencing 'transport poverty' are not adequately considered. Transport poverty, a term not yet formally defined in academic or policy literature, generally refers to situations where people lack access to essential services or employment due to a lack of available, affordable, or adequate transport options.

The **"Mobility as a Right" (MaaR) concept** must be one of the pillars of future transport systems. A strategic vision aiming to ensure inclusive mobility where all citizens are taken into consideration, regardless of their physical and mental capabilities or social and economic background. **We firmly believe in Mobility + Inclusiveness = Freedom**. As such, MaaR must also be embedded in the core of communication strategy. The representation of all segments of society is extremely important for the execution of the new vision of public transport as a mode of transport for everyone, ensuring public transport opens up economic, social and political opportunities for citizens, and therefore increasing their quality of life.

The Sustainable and Smart Mobility Strategy has highlighted important areas for making the EU's transport vision a reality. One aspect of this focuses on **ensuring equality of access for all passengers as part of new mobility systems.** Within the EU, there are many positive examples and initiatives being deployed by the public transport sector. Cities and transport networks have been focusing their efforts on certain aspects of improving accessibility, such as vehicle fleets with low floors. However, other elements remain largely unaddressed, making the end-to-end journey inaccessible. Only by working with users can the transport solutions providers truly identify the key barriers, prioritise innovation opportunities and design the systems that can provide mobility for all.

a. Definition & scope

The comprehensive definition of public transportation reflects a paradigm shift towards shared mobility, encompassing a diverse range of accessible transport modes available to the public. This inclusive concept embraces traditional forms like buses, trains, metros, tramways, and cable cars, alongside innovative solutions such as bike-sharing, car-sharing, micro-mobility

services, taxis, car-pooling, ride-hailing, and ride-pooling. Central to this broad definition is the principle of access without ownership, acknowledging the variety of transport services accessible to the general public, thereby enabling mobility without the requirement of privately owning a transport asset, be it a car or a bike.

In the context of this report, we adhere to this all-encompassing definition when referring to public transport, making no distinctions between modes or providers. The issues and recommendations presented herein are examined from a holistic system perspective, recognizing the interconnectedness of various transport modes and providers within the broader framework of accessible and shared mobility. It's important to note that t**his report takes a systemic view, addressing challenges and providing recommendations at the overarching level**. In future reports, we may delve into specific challenges and solutions at the mode level for a more granular understanding of the intricacies involved in each transport mode.

3. The 4 dimensions of inclusive transport

Taking this broader view, inclusivity in transport refers to designing and providing transportation systems and services that are available, accessible, affordable, and acceptable to all members of society, regardless of their diverse needs and characteristics. It encompasses four key dimensions:

a. Availability

As highlighted in Topic 2, availability in transport refers to the presence of adequate and diverse transportation options to cater to the needs of different individuals and communities. It relates to geographical coverage of the transport network so that all citizens have access to a mobility solution within their immediate neighbourhood. It involves ensuring that various modes of transport, such as buses, trains, trams, shared mobility services and the related infrastructure, are readily available in different regions, including both urban and rural areas. Availability also extends to having transport services available to accommodate diverse travel patterns, including early mornings, late evenings, and weekends.

b. Accessibility

Accessibility in transport focuses on creating transportation systems that can be easily used by all individuals, including those with physical, sensory, or cognitive impairments. This involves designing infrastructure and vehicles with features that accommodate wheelchair users, visually impaired individuals, and others with mobility challenges with ramps, lifts, low floor access vehicles, seats, clear signage that can be understood by people with visibility and illiteracy issues and visitors. It also includes **providing accessible information**, such as real-time travel updates and route planning tools for all. For instance, ticketing and information provided through digital tools, on-site ticketing machines, signage and information, vocal announcements, visual aids. Many mobility services today are offered to customers through digital channels only, which means they are usually not accessible to all, although good practices exist of digital services adapted to users with special needs without accessible stops, stations and interchanges, and routes between these and passenger origins and destinations, a transport system is still not accessible. Much has been done in recent years to improve vehicle accessibility, but much remains to be done for these essential infrastructure elements.

c. Affordability

Affordability in transport is about making transportation services financially accessible to all socio-economic groups. It addresses the challenge of ensuring that transport fares and fees are reasonable and affordable for individuals with varying income levels. Inclusive transport

systems should consider providing fare concessions, subsidies, or affordable ticketing options to ensure that low-income individuals can access essential services and opportunities.

d. Acceptability

Acceptability in transport refers to creating a transport environment that is safe, secure, comfortable, and respectful for all users. It involves addressing social and cultural factors that might influence individuals' preferences and perceptions of different transport modes. For instance, taking into account cultural norms or preferences when designing seating arrangements or providing transport facilities, if deemed necessary. Moreover, it is closely linked to the duration of travel, which could produce time poverty.

Transport inclusivity signifies more than just physical accessibility; it embodies a commitment to embrace diversity, promote social justice, and empower every citizen to participate fully in the communal fabric of urban and rural life.

4. Snapshot of the current situation: Overview of the most common accessibility barriers (looking at both equity, physical and digital accessibility)

In 2022, 27% of the EU population over the age of 16 had some form of disability. According to Eurostat estimates, that equals to 101 million people or one in four people adults in the EU[1]. In addition, Europe's ageing demographics and the associated increase in chronic conditions – along with long COVID - means that the prevalence of disability in Europe is expected to rise. This ageing trend is pervasive throughout the world and for this reason, it is essential to identify mobility solutions suitable for both the elderly and persons with disabilities. Understanding the demands of this market requires in-depth knowledge of the user-centric needs and interactions of engaging with urban mobility infrastructure.

Overall, getting on and off transport remains the most challenging aspect of a journey for a person with a disability. This was followed by reaching an access point, such as a train station or a bus stop, first- and last-mile issues around the accessibility of urban infrastructure, entering and using station facilities (such as toilets, service desks, ticket points), delays in travel due to an inability to board a mode of transport, comfort while traveling and access to travel information. Another social barrier is the level of willingness among other passengers and transport staff to help them and accommodate their needs. When asked about future mobility solutions, around 60% of persons with or without disabilities and the elderly would use certain mobility systems, such as ride-pooling and microtransit. Around 70% would use robotaxis.[2]

Despite various standards and regulations designed to ensure the accessibility of traffic services and infrastructure, accessibility gaps still remain. These diminish disabled users' capacity to travel independently and undermine their fundamental right to autonomy and privacy, equal access to education, work and other social networking opportunities that may improve their quality of life. To bridge these gaps, the transport sector and authorities must be more ambitious and user-centric in developing public transport and land-use planning in order to improve accessibility. This means taking a holistic view of passenger needs and

[1] Disability in the EU: facts and figures https://www.consilium.europa.eu/en/infographics/disability-eu-facts-figures/

[2] TRIPS Project brief 2023: https://trips-project.eu/wp-content/uploads/2023/03/Project-Brief-TRIPS-Proj-FEB-2023.pdf

interactions, considering both the physical and digital infrastructures and ensuring that new mobility solutions are designed from the outset to meet user requirements.

When looking at specifics, the most common accessibility barriers include:

a. Physical Barriers

- **Lack of Accessible Infrastructure and Facilities**: Insufficient or inadequate infrastructure, such as pick-up and drop-off stations, ramps, elevators, and tactile paving, can hinder the mobility of people with physical disabilities or those using mobility aids like wheelchairs or crutches. It is also essential that these facilities are well-maintained.
- **Inadequate Signage**: Poorly placed or unclear signage at stations, stops, and shared mobility pick-up points can create confusion and difficulties for passengers with visual impairments or cognitive challenges.
- **High Steps and Gaps:** High steps on public transport vehicles and gaps between vehicles and platforms can make boarding and alighting challenging for people with mobility limitations / luggage or travelling with families.
- **Lack of accessible routes** to and from stops, stations, and interchanges

b. Transportation Vehicle Design

- **Inaccessible Seating:** The lack of designated spaces for wheelchairs and priority seating for elderly and disabled individuals can prevent their comfortable and safe travel on public transport.
- **Storage space for luggage/prams/buggies:** public transport and shared mobility vehicles often have limited space for the safe and secure storage of these items. This limited space often leads to designated wheelchair spaces being used for storage, leading to conflict with disabled users.
- **Narrow Aisles and Doorways:** Narrow aisles and doorways in public transport vehicles may restrict the movement of passengers with mobility aids or impairments.
- **Poor Vehicle Maintenance:** Inadequate maintenance of transport vehicles can result in broken lifts and ramps, malfunctioning doors, and other barriers that impact accessibility.

c. Poor Infrastructure Design

- **Poor colour contrast for steps and rails:** inadequate colour contrast on steps and handrails poses a significant challenge for passengers with visual impairments, as well as those who may face difficulty perceiving depth.
- **Inconsistencies in flooring**, commonly referred to as "black holes," contribute to anxiety and confusion for individuals with Alzheimer's, disrupting their sense of orientation.
- **Stanchions impairing access:** Poorly placed stanchions create obstacles and impede the smooth movement of passengers, particularly those with mobility challenges.

- **Fare payment facilities inaccessible heights:** Inaccessible positioning of fare payment facilities excludes wheelchair users from independently completing transactions, leading to an exclusionary experience.

d. Communication and Information

- **Difficulties in finding the information needed for the journey and the point of departure:** grasping transport networks and hubs, with timetables and routes that are not always easy to understand. Work on simplifying networks (itineraries) and timetables is often necessary to improve accessibility for all and make them more attractive. Also, easy-to-understand fares is a significant issue.
- **Insufficient Communication Channels:** Inadequate information on schedule changes, delays, and service disruptions can create challenges for individuals to understand the impact on their journey and what alternative options there are. This is particularly an issue for those with sensory or cognitive impairments.
- **Lack of Multilingual Information:** Limited availability of information in different languages can pose difficulties for tourists and individuals with language barriers.

e. Digital Accessibility

- **Inaccessible Websites and Apps:** Public transport and shared mobility providers' websites and mobile applications may lack accessibility features for individuals with visual, hearing or cognitive impairments.
- **Complex Booking Processes:** Overly complicated booking procedures and unclear user interfaces can make it difficult for some passengers to use shared mobility services.
- Increased **digitalization** can create a dependency on digital tools for accessing transport services, which can be a barrier for people who do not have access to technology (low-income travellers) or who are not comfortable using it.

f. Equity and Socioeconomic Barriers

- **Unaffordable Fares:** High transport fares can be a significant barrier for low-income individuals, limiting their access to public transport and shared mobility options.
- **Advance payment requirements:** often season tickets or other passes provide a discounted service but require up-front payment. This can be a barrier for those with limited disposable funds and means that they are further disadvantaged.
- **Flexible ticketing:** season tickets are often designed for those who regularly commute to one place and do not cater for hybrid working or those who have flexibly travel requirements.
- **Service Availability Disparities:** Unequal distribution of transport services in marginalized or remote areas can lead to transportation deserts and enhance transport poverty, restricting mobility options for certain communities.

g. Safety and Security

- **Perceived Safety Concerns:** Fear of harassment or unsafe situations can deter vulnerable groups, such as women or elderly individuals, from using public transport and shared mobility services.
- **Lack of Adequate Lighting:** Poorly lit stations and stops may lead to safety concerns for passengers during evening and night hours.

5. Identified users/passengers with particular needs and challenges

The following table shows examples of the major needs and challenges, people from different groups have in relation to using transport. Not everyone in each group will experience the issues listed but they will be experienced by large numbers of people in that group, and it makes them important to address. It is also likely that other groups (not listed) will also encounter these issues and resolving the needs / challenges will help those other groups as well. Some examples are 1. improving safety for women also improves safety for men; 2. Improving accessibility for wheelchairs users helps people with luggage. There will be many similar examples.

Women	**NEEDS**	• Safe and secure public transport environments to avoid harassment and safety concerns (tailored to women's needs). • Accessible, staffed and well-lit transportation facilities to ensure safety during evening and night hours. • Sufficient availability of public shared and on-demand transport services to accommodate work, family, and social commitments. • Integrated ticketing and fares that allow for multimodality, group travel and trip chaining at flexible times
	CHALLENGES	• Fear of harassment or uncomfortable situations while using public transport. • Limited access to transport services in certain areas, leading to restricted mobility. • Lack of physical accessibility in stations and stops to travel with kids or people needing care. • Lack of a cohesive and user-friendly transportation payment system, hindering seamless transitions between various modes of transport and limiting options for group travel and flexible trip scheduling
Citizens with poor IT literacy or digital access	**NEEDS**	• Access to clear and simple information about public transport schedules, routes, and fares that doesn't require extensive IT knowledge. • Offline options, including telephone, for obtaining travel information and purchasing tickets – or simple cash fares.
	CHALLENGES	• Difficulty in navigating complex digital platforms and mobile applications.

		• Limited access to online services, hindering their ability to plan and use public and shared transport efficiently.
People with disabilities (cognitive, visual, physical) and reduced mobility	**NEEDS**	• Accessible infrastructure (stations) and transport vehicles with features like ramps, priority seating, and audible announcements, and access routes to stops/stations. • Clear, accessible and consistent information on accessible routes and facilities. • Waiting facilities, level boarding/alighting – particular difficulties in rural areas • Well trained and supportive staff inside the vehicles and stops/stations
	CHALLENGES	• Inadequate accessibility to transport infrastructure and vehicles, limiting their independence and mobility. • Lack of awareness among transport staff and fellow passengers regarding the needs of persons with disabilities. • Fear of harassment or uncomfortable situations • Fear of disruptions to accessibility (incorrect information upstream or equipment failure)
People living in remote areas (notably rural areas), segregated localities or in less developed regions	**NEEDS**	• Access to essential facilities, education, and job opportunities that are typically located far away from home. • Affordable tickets and fares to reduce economic barriers to accessing transport. • Accessible walking and cycling infrastructure and access to shared mobility solutions to connect the different transport modes for the first/last mile
	CHALLENGES	• Limited availability and frequency of public transport and shared mobility services in rural or less developed areas. • Longer travel times and potential isolation due to insufficient transportation options. • Cost of public transport and shared mobility services • Poor quality connecting infrastructure and stop/station infrastructure
Young People and Children	**NEEDS**	• Safe and secure transport environments for children traveling to and from schools and other activities. • Youth-friendly and affordable fare options to support their mobility needs.
	CHALLENGES	• Lack of dedicated transport services for school-going children in certain areas. • Limited access to public and on-demand transport due to economic constraints for young people with low incomes.

		• On board space for buggies etc; wheelchair conflict over use of space
People with low income	**NEEDS**	• Affordable transport options to access employment opportunities, education, and essential services. • Fare concessions or subsidies to mitigate economic barriers. • Offline options for obtaining travel information and purchasing tickets, simple cash fares.
	CHALLENGES	• High transport costs impacting their ability to access essential services and employment opportunities. • Limited availability of affordable transport options in some regions. • Increased digitalization of services and information, hindering their ability to travel and/or accessing information

6. Analysis of changes in the transport system and users' profiles due to decarbonisation, digitalisation, ageing population, and the COVID-19 pandemic

Additionally, in considering the social dimension of the future EU transport system, citizens falling outside the above categories may also have to change their mobility habits. Transport evolves and modernises along major trends, including:

Decarbonisation	**Changes to the transport system**	• Shift to Zero and Low-Emission Vehicles • Expansion of Sustainable Mobility Options: cycling lanes, pedestrian-friendly infrastructure, and micro-mobility services like e-scooters. • Integration of Green Technologies: regenerative braking, solar-powered charging stations • Reduced space for wheelchairs, buggies etc on board due to battery incursion into design
	Changes in users' profiles	• Increased adoption of zero and low emission private vehicles • Greater awareness of environmental impact affecting mobility choices (such as use of trains over flying)
Digitalisation	**Changes to the transport system**	• Younger generations expecting digital first type approaches • Digital Ticketing and Payments • Real-Time Information provided via digital platforms • Apps and digital mobility platforms
	Changes in users' profiles	• Increased reliance on digital services • Greater flexibility in travel choices
Aging population	**Changes to the transport system**	• Transport systems will need to incorporate accessibility features such as low-floor buses, ramps, priority seating, pick-up and drop off locations to accommodate older passengers and those with reduced mobility. • Urban planning will need to consider how to improve street crossings, pedestrian signals, and bus stops – more needed especially at transport nodes to cater for aging population
	Changes in users' profiles	• Increased Demand for Age-Friendly Transport
COVID-19 Pandemic	**Changes to the transport system**	• Resilience and Emergency Response: Increased emphasis on developing transport systems resilient to disruptions, with a focus on effective emergency response strategies in the face of unforeseen challenges. • Accelerated Digital Transformation: Integration of advanced technologies, including contactless payment systems, and digital communication platforms.

	Changes in users' profiles	• Reduced Public Transport Use • Emphasis on Hygiene and Safety (which may discourage public transport use) • Increased home working has changed travel habits with public transport less used for commuting.

7. Recommendations

In the past, accessibility was treated as 'the elephant in the room', with each organisation in the transport ecosystem addressing only the issues they considered to lie within their own scope, strategic priorities, legal requirements, and financial capabilities. While this undoubtedly led to progress over the years, from a customers' perspective, results have been suboptimal, as users require end-to-end accessibility to reach their destination. A more user-oriented and practical approach would be to focus on the accessibility issues in each phase of a journey; from planning to arriving at one's destination. Any measure of transport accessibility should then consider reducing all barriers hindering access to related transport services or making them difficult to use.

Levels of Action: *European: EU, National: N, Regional and local authorites: R & L, Public Transport Authorities: PTA, Public Transport Operators: PTO, PT Supply Industry: SI, SMP: Shared Mobility Providers*

a. Accessibility Planning

Levels of Action: *All Levels*

- **Adopt a Holistic View of Accessibility:** Consider accessibility in a broader sense, not limited to registered disabled individuals but also including those with any kind of impairment or restricted access to mobility, whether permanent or temporary. Accessibility measures should cater to the diverse needs of all passengers. The end-to-end journey needs to be considered.
- **Integrate Transport and Urban Planning:** Foster collaboration between urban transport and suburban/regional transport to design accessible door-to-door routes. Seamless transitions between different modes of transport benefit all travellers, including those with disabilities.
- **Emphasize User-Centered Approaches:** Place the passenger experience at the forefront when developing and deploying accessible mobility policies. Understanding the needs and preferences of all groups including travelers with disabilities ensures a more user-friendly transport system.
- **Prioritize Barrier-Free Mobility:** Making public transport fully accessible and barrier-free (both physical and digital infrastructure) should be a key priority for sustainable urban mobility. Focus on facilitating access between modes to encourage multimodality.
- **Accessible Communication:** Ensure that all communication related to accessibility improvements is clear, inclusive, and accessible to all, including individuals with different communication needs. Use plain language and consider diverse formats such as audio, visual, and braille.

- **Monitor and Evaluate Progress:** Regularly assess the effectiveness of accessibility measures and policies through monitoring and evaluation with all user groups. Use this data to identify areas of improvement and to measure the impact of initiatives.

b. Infrastructure Design

Levels of Action: *All Levels*

- **Prioritize Universal Design:** Incorporate accessibility considerations from the design stage of transport infrastructure and equipment. This includes designing ticketing or check-in machines with accessibility features to cater to all passengers.
- **Strategically Plan Infrastructure Refurbishment:** When planning major refurbishments of existing infrastructure and rolling stock, include accessibility improvements to make stations and vehicles more inclusive. Consider temporary measures that cater to all passengers, including those with special needs.
- **Promote Technology supporting Accessibility**: Leverage technology, including assistive technology, to overcome barriers and enhance accessibility. Innovations in the transportation sector can improve inclusivity while safeguarding privacy and avoiding new obstacles. Audio visual messaging on board vehicles – route and stop information.
- **Implement Preferential Access to Infrastructure:** Promote preferential access to infrastructure such as bus lanes and pick-up/drop-off points for shared services like carpooling, ridesharing, and carsharing whenever it contributes to increase accessibility.
- **Universal Design for Ticketing Systems:** Implement universal design principles in the development of ticketing systems to ensure they are accessible to all passengers, including those with disabilities. Offer various formats for ticket purchase, such as mobile apps, online platforms, ticket vending machines with audio and visual interfaces (which need to be accessible to all passengers including wheelchair users), and traditional paper tickets.

c. Public Awareness and Engagement

Levels of Action: *All Levels*

- **Promote Inclusive Public Campaigns:** Conduct public campaigns to improve social attitudes and transport etiquette towards persons with disabilities and those with special access needs (women, elderly). Raising awareness can create a more inclusive and supportive environment for all passengers.
- **Engage with a range of representatives of People with Disabilities:** Ensure meaningful collaboration with representatives of disabled people and accessibility experts during the development of standards for vehicles, mobility systems, and transport services. Their insights are essential to understanding local needs and tailoring solutions accordingly. “Swap with me” events are extremely beneficial for all involved.
- **Co-Design with Users:** Engage directly with individuals with disabilities and access needs to co-design transport infrastructure, services, and policies. Their lived experiences provide valuable insights into the challenges they face and the most effective solutions.

- **User-Centred Testing and Feedback:** Conduct user-centred testing and seek regular feedback from all groups/passengers with disabilities during pilot projects and implementation stages. This iterative process allows for continuous improvement and adjustments based on real-world experiences.
- **Empowerment and Training:** Empower transport staff and operators with training on disability awareness, accessibility best practices and how to deal with harassment of different groups of passengers. Encouraging a culture of inclusivity among staff contributes to a more welcoming and supportive transport environment.

d. Fare systems and affordability

Measures & Level of Action	*EU*	*N*	*R & L*	*PTA*	*PTO*	*SMP*
Fare Assistance Programs: Establish fare assistance programs for low-income individuals and specific user groups, such as seniors, disabled individuals, and students, to make transport more affordable and accessible. These programs could include discounted fares, subsidies, mobility vouchers, special fare cards and employee mobility plans.	*X*	*X*	*X*	*X*		
Integrated Fare Systems: Develop integrated fare systems that allow passengers to use a single ticket or payment method across different modes of public transport and on-demand services like shared mobility.	*X*	*X*	*X*	*X*	*X*	*X*

8. Policy recommendations for improving coordination, building knowledge and evidence, integrating the social dimension, and providing resources to meet the EU's goals for transport inclusiveness and accessibility

Levels of Action: *All Levels*

- **Establish Accessibility and Affordability as Evaluation Criteria**: Integrate accessibility and affordability considerations as complementary means for evaluating transport investment and identifying transport disadvantages and priorities for project generation. This ensures that projects prioritize the needs of diverse user groups, including those with disabilities and low-income individuals.
- **Promote Cooperation and Dialogue:** Facilitate cooperation and dialogue between all stakeholders, including transport operators, local authorities, disability organizations, and passenger representatives, to ensure an accessible transport network. Involve these stakeholders from the early stages of planning through development and implementation to ensure inclusive decision-making.
- **Integrate Accessibility Training for Transport Professionals:** Make physical and digital accessibility and inclusive transportation training an integral part of training for transport professionals. Tailor the training to their specific roles, ensuring that all staff are equipped with the knowledge and skills to provide inclusive services. Training should be organized by the competent authorities for all customer facing staff and management.

- **Embrace a holistic decision-making approach** by considering the social, environmental, and economic benefits of mobility services. Advocate for a "**just transition**" paradigm, where the broader societal advantages of accessible transport are pivotal in the decision-making process, transcending mere economic considerations. Acknowledge the broader societal advantages of accessible transport, emphasizing the positive impacts on communities and the environment. Evaluate the potential benefits arising from modal shift, understanding how this comprehensive perspective can bolster the business case for investing in public transport.
- **Provide Financial Compensation for Socially Beneficial Services:** When the social benefits of mobility services are well demonstrated but they cannot be profitable on a stand-alone basis, local public authorities should provide financial compensation. Implement incentive and subsidy schemes, such as reduced VAT for providers, and grant subsidies for low-income individuals to ensure that essential services reach vulnerable groups, including children, elderly, disabled, and those in rural areas with limited transport options.
- **Establish Clear Targets for Accessibility:** Set clear and measurable targets for improving accessibility and inclusiveness in transport. Monitor progress regularly and adjust policies and strategies accordingly to meet these targets. By adopting a broader view of accessibility, it will help to make the business case for investment.
- **Build Knowledge and Evidence:** Invest in research and data collection to build a robust evidence base on accessibility gaps and transport disadvantages faced by various user groups. Use this knowledge to inform policy decisions and prioritize interventions effectively.
- **Provide Resources for Infrastructure Upgrades:** Allocate adequate resources to implement infrastructure upgrades, technology enhancements, and service improvements that enhance accessibility. This includes retrofitting existing infrastructure and planning for new developments with accessibility in mind.
- **Encourage Innovation and Inclusive Technology:** Support research and innovation in the development of inclusive transport solutions, including assistive technologies and digital platforms that cater to the diverse needs of passengers.
- **Adopt a participatory approach and user insights:** Collecting hard evidence and user insights on the end-to-end accessibility of transport infrastructure and services based on user criteria is a necessary step for transport providers and authorities. Adopting such an evidence-based approach can help transport organisations focus their efforts and prioritise the funding of initiatives.
- **Monitor and Evaluate Inclusiveness Policies:** Regularly assess the impact of inclusiveness policies and initiatives to ensure their effectiveness. Use feedback from users and stakeholders to make continuous improvements.

9. Conclusion

In summary, the imperative of enhancing accessibility in public transport emerges as a cornerstone for fostering inclusivity in urban mobility. By addressing diverse needs and challenges across different user groups, implementing user-centric policies, and fostering collaboration among stakeholders at all levels, cities can pave the way for a more accessible, equitable, and efficient public transport system. This not only aligns with the broader goals of the European Commission but also reflects a fundamental commitment to providing transportation solutions that cater to the needs of all citizens, regardless of their physical, social, or economic circumstances.

10. Annexes

a. Case studies

1. DENMARK - DANISH REGIONAL TRANSPORT AUTHORITIES

Flextrafik: Demand responsive transport An integrated part of Flextrafik relates to transport of persons with reduced mobility: Flexhandicap. It is an alternative for people who are unable to use traditional busses and is a mode of transportation that ensures that highly disabled people get the same offers and possibilities as everyone else, even though they cannot use regular buses and trains or only use it with severe difficulty. Whether the service is used to visit family and friends, go shopping or participate in cultural activities, it is available all year round, 24/7. Flexhandicap users can be transported 104 times during a year using this scheme. If more trips are needed, users can apply with their local municipality. It typically costs an annual fee of 40€ to be part of Flexhandicap, plus 3€ for the first 5km of every trip. An additional reduced fee is applicable for trips above 5km. The vehicles used for Flexhandicap are designed to carry people in wheelchairs in a safe and comfortable way. Furthermore, members of Flexhandicap can ride for free with all of the Regional Transport Authorities' service buses. All service buses have ramps for wheelchairs, and street level entry. Drivers can help passengers to board and alight from the vehicles. Many of the designated Flexhandicap busses are equipped with a stair climber which makes it possible to get up and down stairs with a manual wheelchair in buildings without elevator. The Regional Transport Authorities have made nationwide Flexhandicap trips possible. To book a trip, users contact their Regional Transport Authority, which then takes care of the reservations, including through other regions. It is indeed a user friendly one-stop-shop.

2. INCLUSIVE TRANSPORT SYSTEM FOR ALL IN OSLO, NORWAY

Oslo's PTA, Ruter, has set up a long-term ambition to provide "sustainable freedom of movement for all" in the region. In line with the Sustainable Development Goals, Ruter will strive to ensure freedom of choice, equal opportunities, autonomy and respect for all. Firstly, by identifying the barriers people meet when using public transport and then by changing the mindset of the entire organisation, the goal is to make inclusivity a part of every new venture. In this regard, new Key Performance Indicators (KPIs) have been integrated to measure success. By this novel approach to inclusivity, and by providing services adapted to a wider range of customers, Ruter expects to increase the modal shift to more sustainable transport modes.

3. SWEDEN - VÄSTTRAFIK WORKING TOGETHER WITH PASSENGERS TO EVALUATE THE ACCESSIBILITY OF NEW TRAMS

In order to test the design of Gothenburg's new trams, a full-scale model has been built. A group of passengers with special needs were invited to test its accessibility, something which provided valuable feedback and has led to several improvements being made. Västtrafik, the PTA of West Sweden, has procured new trams in cooperation with Goteborg Spårvägar (Gothenburg´s tram operator). The trams were supplied by Bombardier in 2019. In order to test the design before the series production starts, a full-scale model of a part of the tram has been built in Berlin, Germany. This mock-up makes it possible to evaluate a number of important factors, such as the design of the driver's cab and how to provide the best customer experience. When it comes to customer experience, everything from material- and colour

choices to door functions, the location of ticket validators and the placement of seats and stop buttons is evaluated. In order to ensure that the new trams are accessible to as many individuals as possible, Västtrafik asked four people with different special needs for help: one person using a wheelchair, one using a walker, one with impaired vision and an elderly person. They were invited to test the mock-up on location in Berlin.

The visit took place during Summer and the participants tested many different aspects, such as the height of seats designated for people with reduced mobility, the space available for turning a wheelchair inside the tram and the access to stop buttons, ticket machines and handles. There were many interesting and rewarding discussions during the visit and it has led to several adjustments being made to improve the accessibility of the trams. For example, the handles in places dedicated to wheelchairs will be extended and lowered and the adjacent ticket validator will be placed closer to the floor. Also, there will be clear markings on the floor by the doors where the inclination starts to prevent accidents. Furthermore, the space in front of one seat has been adapted to provide room for a guide dog. What is more, the distance between the floor and the folding seats will be prolonged and footrests will be available at the seats designed for people with reduced mobility.

4. PRIORITISING ACCESSIBILITY IN PRAGUE, CZECH REPUBLIC

Prague has for decades been investing to improve the accessibility of its public transport. In the mid-90s the Czech capital introduced a system that equipped all public transport vehicles with an electronic device that announces the number and destination of the approaching vehicles, so that people who are visually impaired waiting at the bus/ tram stop are informed. The system also informs the driver when a person who is visually impaired wants to get on or off the vehicle. Accessible public transport for all categories of passengers, including passengers with mobility impairments or who are visually impaired, is constantly one of the priorities of Prague City Council. To make sure Prague's public transport is accessible for all people a municipal working group has been set up, consisting of members from the City of Prague, Prague Public Transit Company and from the association of the visually impaired. This working group was responsible for drafting a strategic document that outlined the concept of removing barriers in public transport for people with disabilities. Together with infrastructure improvements, such as removing barriers for wheelchairs at stations, Prague is a good example of a city that is significantly improving the travel conditions of people with reduced mobility.

5. THE FIGHT AGAINST SEXUAL HARASSMENT IN FRANCE'S PARIS REGION

Ile-de-France Mobilités, the regional mobility authority and RATP, a transport operator in Paris, have been conducting exploratory walks with female users on public transport to resolve feelings of insecurity in and around the infrastructure. Such initiatives lead to co-created spaces whereby the needs of users are considered, and hopefully makes public transport more inclusive and safer for everyone.

6. THE IMPACTS OF AN INTEGRATED FARE SYSTEM IN LISBON

A study published in the Journal of Transport Geography (Silver et al, 2023) examines the transformation of the fare system in the Lisbon Metropolitan Area (LMA). The old system was intricate, featuring numerous fare types from various operators, resulting in complexity and

higher costs, particularly for those living on the outskirts. To simplify and reduce costs, a new flat fare structure called the "Lisboa Navegante Pass" was introduced on April 1, 2019. This pass provided unlimited access to all public transport within the entire LMA for a monthly fee of 40 euros, leading to a significant reduction in the number of pass types and easier fare management. The reform was made possible by the Program to Support Fare Reduction in Public Transport (PART), a national initiative funded by the Environmental Fund. This program aimed to promote public transport use, mitigate negative environmental impacts, and enhance service quality.

The benefits of the new fare system were substantial. Transportation expenses as a percentage of household income decreased significantly, especially for minimum wage earners. The reform also led to improved travel times, with the average travel speed increasing across different modes of transportation, including public transport, cars, and active modes like walking or cycling. The study's findings highlighted various factors influencing the impact of the fare reform. Age, income, level of public transport availability, and gender resulted in positive accessibility improvements and more equitable distribution of benefits. The flat fare system simplified the structure, lowered costs for many, and enhanced mobility outcomes for diverse user groups. The impact of the reform was influenced by multiple factors, including demographic characteristics, transport mode choice, and the availability of public transport options. Overall, the study demonstrated the positive effects of the fare reform on commuter accessibility and its potential to create a fairer transportation system.

7. ENHANCING ACCESSIBILITY THROUGH 1000 WHEELCHAIR ACCESSIBLE TAXIS IN PARIS FOR 2024

In an effort to improve accessibility for people with mobility issues, the City of Paris undertook an innovative initiative in preparation for the 2024 Olympic Games. Recognising the limitations of the existing public transport system, the government worked with taxi services to create a more inclusive and accessible transport network. To encourage the introduction of accessible taxis, the government provided a subsidy of €15,000 for each accessible taxi purchased, with an increased incentive of €22,000 for electric vehicles. This financial support encouraged taxi operators to invest in accessible vehicles. Moreover, new taxi licences were created, each with specific rights and obligations.

8. ACCESSIBILITY PROMOTION FOR THOSE WITH HEARING, VISUAL, OR PHYSICAL IMPAIRMENTS AT WIENER LINIEN (AUSTRIA – VIENNA)

Wiener Linien is committed to ensuring flexibility and safety for all passengers, with a particular focus on those with hearing, visual, or physical impairments. They prioritize accessibility in the design of their vehicles, stations, and navigation systems. Wiener Linien operates Ultra-Low Floor trams, and the bus fleet consists entirely of low-floor vehicles that can be further lowered for easier boarding, benefiting elderly passengers, parents with strollers and wheelchair users. In addition, Wiener Linien collaborates with disability organizations in the planning of new systems to meet specific customer requirements and developed a navigation system for blind people (“POPTIS”). Subway stations and stop areas are equipped with tactile orientation system to assist blind and visually impaired people. Blind or visually impaired residents of Vienna can bring their guide dogs for free with their annual pass. For deaf people Wiener Linien is making real-time information more accessible through the translation of all operational and disruption information into sign language via an app. The plan is to integrate

animated videos into the WienMobil app in the future, ensuring better accessibility for the deaf community. Another example is an e-paper as information channel at bus stops in Vienna. It is a digital monitor that can be operated by people in wheelchairs, be viewed by people with visual impairments thanks to the black and white mode, and also has a Text-to-speech function, for accessible information.

b. Further guidance and recommendations

- Topic Guide ADDRESSING GENDER EQUITY AND VULNERABLE GROUPS IN SUMPs: https://urban-mobility-observatory.transport.ec.europa.eu/system/files/2023-10/gender_equity_vulnerable_groups_sumps.pdf
- Best practices guide on the carriage of persons with reduced mobility Final report: https://op.europa.eu/en/publication-detail/-/publication/bb3b7e92-df40-11e9-9c4e-01aa75ed71a1
- Best practices guide on the carriage of persons with reduced mobility . Annex 5, Guide on future measures, policies and strategies aimed at creating a PRM-inclusive transport system in Europe: https://op.europa.eu/en/publication-detail/-/publication/b4711a16-df41-11e9-9c4e-01aa75ed71a1
- Mapping accessible transport for persons with reduced mobility: https://op.europa.eu/en/publication-detail/-/publication/dfa0c844-3b5f-11eb-b27b-01aa75ed71a1

c. List of acronyms and abbreviations

AI: Artificial Intelligence

EU: European Union

EU: European Union

ICT: Information and Communication Technology

IT: Information Technology

KPIs: Key Performance Indicators

LMA: Lisbon Metropolitan Area

MaaR: Mobility as a Right

N: National

PART: Program to Support Fare Reduction in Public Transport

PTA: Public Transport Authority

PTO: Public Transport Operator

R & L: Regional and local authorities

RATP: Régie Autonome des Transports Parisiens (Autonomous Operator of Parisian Transports)

SI: PT Supply Industry

SMP: Shared Mobility Providers

d. List of organisations participating to the subgroup

Subgroup leaders
Ile-de-France Region
UITP - International Association of Public Transport
Cities and Regions
Barcelona Metropolitan Area
Braga Municipality
Budapest
Central Slovenia Statistical Region (w. Ljubljana)
Oradea
Toulouse Métropole
Member States
Belgium
Czechia
Finland
France
Italy
Latvia
Lithuania
Luxembourg
The Netherlands
Poland
Portugal
Organisations
ACEA – European Automobile Manufacturers Association
AVERE - The European Association For Electromobility
Community of European Railway and Infrastructure Companies - CER aisbl

Council of European Municipalities and Regions - CEMR

Cycling industries Europe aisbl (CIE)

EIT Urban Mobility

ERTICO

European Cyclist Federation asbl (ECF)

European Passenger Transport Operators - EPTO

European Transport Workers Federation - ETF-Europe

Eurocities

International Road Transport Union - IRU

LEVA-EU

MaaS Alliance

Micro-Mobility for Europe

MOVE EU - The European Association of On-Demand Mobility

POLIS

Taxis 4 Smart Mobility - T4SM

Observers

CoR – Committee of the Regions

JRC – Joint Research Centre of the European Commission

Ad-hoc expertise

EMTA – European Metropolitan Transport Authorities