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Consolidated Resolution on Road Traffic (R.E.1):
Personal mobility devices

Submitted by the WP.1 Chair

This informal document, prepared by the WP.1 Chair with assistance of New Zealand Ministry of Transport, Johns Hopkins University and South Carolina University, is submitted as response to an initial discussion of the challenges and potential benefits of introducing micro-mobility devices in a complex traffic environment. WP.1 is invited to continue the discussion on the basis of the issues identified in this concept note, as well as the existing initiatives as indicated in Informal document no. 2 (September 2020).

Concept Note – Factors to consider regarding the deployment of Personal Mobility Devices in a complex traffic environment

1. This concept note has been prepared with the noteworthy contribution of colleagues from New Zealand Ministry of Transport, Johns Hopkins University and South Carolina University, as response to an initial discussion of the challenges and potential benefits of introducing micro-mobility devices and programs in a complex traffic environment. WP1 is invited to continue the discussion on the basis of the issues identified in this concept note, as well as on the existing initiatives as indicated in Informal document No. 2 (Sept 2020).

2. Personal Mobility Devices (e-scooters and other small electric mobility devices) are attracting more attention as a mode of transport, offering energy-efficient low-speed and short-distance mobility, with the potential of replacing short car journeys and bridging the "last mile" to and from public transit connections. These potentialities may be brought into even sharper focus during the COVID-19 pandemic, as citizens seek mobility alternatives that maintain social distancing. And they may even foreshadow newer modes of human-scale transport such as delivery and service robots.

3. However, personal mobility devices have also raised a number of concerns including their safety when mixing with motor vehicle traffic on the street, and when mixing with pedestrian traffic on the sidewalk. Other safety concerns include their stability over rough surfaces or with inexperienced riders, and hazards that inappropriately parked personal mobility devices may pose to pedestrians, especially the elderly or those with disabilities. Fundamentally, the existing physical and policy infrastructure in many communities does not accommodate or even contemplate personal mobility devices and other non -dominant modes of travel. This oversight can force users of these modes into a binary choice between endangering themselves on streets or endangering others on sidewalks. Furthermore, regardless of their choice, they may be perceived as a threat—a nuisance, a danger, or a rival—by users of more dominant modes.

4. Guidance regarding policies to inform, regulate, and accommodate deployment of personal mobility devices, both as shared vehicles and as personally-owned devices, could be useful to assist governments in weighing their advantages and disadvantages and in optimizing the social value of these devices while minimizing negative effects.

5. Guidance for governments could address potential positive aspects of personal mobility devices as well as negative in a manner that allows decision-makers to consider how such factors may balance in their local environment. Guidance could also alert local officials to the impact of personal mobility devices on utilization of the existing transportation network, including modes that may be desirable, such as public transit and active transportation (walking and cycling), as well as less-desirable modes such as use of personal cars. Other important implications of the deployment of personal mobility devices could include their relationship to mobility equity.

6. Potential positive aspects of personal mobility device deployment include their role in the new inspirational way of considering urban space. Originally spurred on by increasing environmental pollution, increasing traffic, and road safety issues, now – in the pandemic and post-pandemic era – many feel that urban environments need a total make-over. This will certainly necessitate a dramatic transformation, where cars and conventional office buildings will be less a part of the city and the focus will be on "people-oriented design".

7. The concept of a "15-mins walk to the city" is at the center of new thinking about the optimization of urban and peripheral layout. In this vision, planning and policies will facilitate walking access to essential shops, green spaces, and intermodal transport options, including cyclist lanes, and pedestrian zones. Personal mobility devices may be a perfect fit in the new urbanism, filling a mobility gap with a soft and sustainable alternative.

8. Recent studies have shown that scooter sharing systems can fill a need for moving in between transport hubs and neighborhood spokes – and thereby influence travel time, cost, and environmental care. Studies of trip convenience indicate that personal mobility devices may be a strong alternative to private automobiles for trips between 0.5 and 1.5 km (up to 1

mile). However their higher relative cost on trips over 3 km / 2 miles may make personal mobility devices a less competitive option. Questions remain as to whether the availability of personal mobility would result in significant diversion from conventional mass transport, particularly for commuting between peripheral urban outskirts and central business districts. On these longer journeys, these devices may be most commonly used for short connections to nearby transit stops. The benefits of personal mobility devices could therefore differ widely from city to city, and between geographic areas, depending on travel patterns and existing transportation networks.

9. Potential negative aspects of personal mobility devices include increased injuries to riders from loss of control or to pedestrians or bicyclists in collisions. Severe injuries could also result from collisions between motor vehicles and riders on personal mobility devices, when used either on streets or in driveways. Data on these types of incidents and on injuries resulting from pedestrians falling over inappropriately parked devices are available from evaluations of a number of deployments in cities around the world.

10. Governments may have several strategies available to inform, regulate, and accommodate the deployment of personal mobility devices. Many governments have authority to regulate the use of these devices on streets and sidewalks and to permit their use only in locations, during hours, and in conditions considered to be sufficiently safe. Many governments also have authority to regulate the operations of companies that rent or hire use of personal mobility devices. Through such regulation governments can control a range of factors, including:

- the number of devices deployed in specific neighborhoods or districts
- the specific locations where devices are parked ready for hire
- the safety equipment available on the devices (such as lights, brakes and parcel racks)
- the maximum speeds that the devices will operate
- the condition and safety performance of devices being hired
- the daily distribution of devices across the region, including the number available for hire in under-served neighborhoods
- the pricing structure for device hires, including subsidy programs if appropriate
- minimum age for device hires and any training requirements
- data reporting requirements including device location, trip records, and daily redistribution information

11. Governments may also require the use of geo-location and geo-fencing to control device density and distribution, and to mandate lower maximum speeds in areas with heavy vehicle or pedestrian traffic.

12. Governments might also take proactive steps to realize the potential benefits of personal mobility devices—and to ensure that these benefits are distributed equitably. For example, governments might inventory and improve their physical infrastructure to better accommodate these devices; develop operational policies that seek symbiosis between these devices and other desirable modes of travel; clarify the legal status of users of these devices so that, for example, motorists are expected to yield the right-of-way at crosswalks; develop training programs and other educational initiatives for both the users of these devices and the other road users, especially motorists and transit operators, who may interact with them; and ensure that users of these devices are treated at least as favorably as motorists.

13. As a first approach, WP1 is invited to consider the potential for developing or identifying such guidance for use by member governments and others for informing, regulating, and accommodating deployment of personal mobility devices and ensuring their use in a safe and inclusive way in complex traffic environments.

LINKS

https://www.eni.com/en-IT/low-carbon/city-15-minutes.html

https://las.depaul.edu/centers-and-institutes/chaddick-institute-for-metropolitan-development/research-and-publications/Documents/E-ScooterScenariosMicroMobilityStudy_FINAL_20181212.pdf

https://www.chicago.gov/content/dam/city/depts/cdot/Misc/EScooters/E-Scooter_Pilot_Evaluation_2.17.20.pdf

https://docklessmobility.org/strategy/who-regulates/

https://etsc.eu/tag/e-scooters/

https://www.bloomberg.com/news/articles/2019-12-05/most-electric-scooter-riders-are-men-here-s-why

Usage of e-Scooters in Urban Environments- Cornelius Hardt, Klaus Bogenberger

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