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**REPORT OF THE WORKING PARTY ON ROAD TRAFFIC SAFETY
ON ITS FIFTIETH SESSION**

Addendum

Revision of the consolidated Resolution on road traffic (R.E.1)

Safety of pedestrians

Note by the secretariat

The members of WP.1 will find below the text on the safety of pedestrians (basis ECE/TRANS/WP.1/2006/7/Rev.2) as modified by the Working Party at its fiftieth session (see ECE/TRANS/WP.1/106, paragraphs 20-21).

The contents of this text will be incorporated into chapters 3 and 8 of the Consolidated Resolution R.E.1 as sections 3.1 and 8.1, according to the draft structure of R.E.1 contained in document ECE/TRANS/WP.1/2005/15/Rev.3.

R.E.1**Chapter 3 - Pedestrians and persons with reduced mobility****3.1 Context**

Pedestrians still account for a substantial proportion of road accident victims in a large number of countries. The safety of pedestrians and persons with reduced mobility requires a comprehensive and coherent approach to ensure real interaction between the various road users. The aim of these recommendations is an improvement of their safety.

3.2 General recommendations**3.3 Research and statistics on pedestrian safety**

In the field of pedestrian safety, there is a need to collect data to assess the safety of pedestrians in road traffic more effectively and more regularly in order to refine knowledge of the problem through, inter alia, the following:

- (a) Ensuring that pedestrian collisions are recorded and that the quality of the recording is optimized to make in-depth analyses of collisions possible, if needed;
- (b) Research into the relationship between the number of pedestrian collisions and changes in pedestrian activity (like children being brought to school by car instead of walking, or old people not leaving their homes owing to fear of traffic conditions);
- (c) Further research to determine the positive and negative effects of the increasing use of advanced technologies in vehicles and the design of the latter on the safety of the most vulnerable road users, and pedestrians in particular.

3.2.2 The role of public authorities

Public authorities should take more account of the vulnerability of pedestrians and contribute actively to reducing the dangers to which they are exposed by taking the following measures:

- (a) Giving pedestrian safety an important role;
- (b) Taking pedestrians into account, giving them the same importance as users of means of transport when transport and traffic plans are being drawn up. When building new infrastructures, or changing existing infrastructures, safety audits should be carried out inter alia to determine and to alleviate possible negative effects on the safety and mobility of pedestrians;
- (c) Enlisting the participation of residents of the neighbourhoods involved, so that they may contribute with suggestions regarding the improvement of pedestrian safety.

3.2.3 Education and campaigns to promote pedestrian safety

In order to make road users more aware of existing traffic rules and the behaviour they need to adopt to ensure that pedestrian safety is not compromised, the following points - especially with regard to campaigns and driving courses - should be stressed:

- (a) Campaigns on pedestrian safety should project not simply an image of pedestrians as vulnerable road users, but as road users in their own right;
- (b) Campaigns should inform all road users about the physical and psychological capabilities and limits of human beings in traffic, thereby helping to understand the behaviour of each road user group, including the need for interaction among road users;
- (c) **Road safety education and campaigns should also be used to inform pedestrians of road traffic rules, help them to respect these rules and advise them how to avoid dangerous situations when moving on foot, including when they have priority.**
- (d) Special attention should be given to training and educational aspects, beginning with young children. Parents have a special responsibility to teach children how to cross a road;
- (e) Driving courses and campaigns should encourage non-aggressive conduct towards pedestrians and stress their vulnerability.

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Chapter 8 - Measures and facilities to ensure pedestrian safety

In addition to the recommendation contained in chapter 3 of the present Consolidated Resolution, the present chapter lists the different measures and facilities for assuring greater safety for pedestrians.

8.1 Recommendations concerning facilities for pedestrians

Because pedestrians as a diverse group have widely different capabilities and as individuals are especially vulnerable, the strategies for adapting pedestrian behaviour to current road structures are limited. Therefore, legal provisions, recommendations and other approaches regarding infrastructure are necessary.

Facilities and infrastructure should be designed to ensure pedestrian mobility, reduce the dangers of the road and foster in all traffic participants safe and responsible behaviour. The following provisions regarding pedestrians are recommended:

8.1.1 Pavements (sidewalks) and footpaths

In every town and city, a network of continuous walkways (including pavements (sidewalks), etc.) should be established. They should provide safe, direct links between

homes, shops, schools, access to public transport and other vital services and facilities. Pavements and footpaths should be well lit and well maintained. Their width should be determined by their function (as school paths or through shopping areas, etc.). The pavement should not be used for parking of vehicles. If this is not avoidable, **exceptions should be marked on the ground, indicating spaces for parking, thereby ensuring that sufficient space is left for the movement of pedestrians and persons with reduced mobility who use a wheelchair.** Signs and other equipment should not obstruct the movement of pedestrians.

Vehicles, including all devices for personal mobility, powered by motors of any kind, except slow-moving vehicles designed for handicapped persons, should not be allowed to use footpaths and pavements.

8.1.2 Pedestrian crossings

8.1.2.1 General principles

Pedestrian crossings should allow users to cross the roadway in safety. They cannot therefore be considered simply as a road marking, but have to be considered as a built traffic layout component (including the arrival areas and possibly a central island) forming part of the whole road design. Thus, their location and layout should always be integrated with the planning, design and construction of the road as a whole. Generally speaking, the objective should be to give preference to the crossing of roads safely by pedestrians without change of level. However, when necessary to improve the safety of pedestrians in certain places, engineering structures such as footbridges or tunnels should be considered.

Provision should also be made for a sufficient number of pedestrian crossings, and these should be carefully planned so that pedestrians do not have to make long detours.

8.1.2.2 Visibility at pedestrian crossings

In the area leading to the crossing, there should be nothing to interfere with visibility, because pedestrians must be able to see and be seen by oncoming vehicles at a sufficient distance if they are to cross safely. Accordingly, to ensure clear visibility near a pedestrian crossing, pavements should be broadened wherever possible to bring the kerb into line with the roadside limit of the parking spaces, or **standing or parking** should be prohibited within a distance of at least five metres before the crossing by means of appropriate road markings, as is required, **for example**, by Article 23.3 of the European Agreement supplementing the Vienna Convention on Road Traffic (Ad Article 23.3). **To ensure that this prohibition is respected, appropriate road markings should be used.**

8.1.2.3 Facilities for pedestrian crossings

In general, roads should be designed so as to minimize the crossing distances of pedestrians at designated pedestrian crossings.

If not equipped with traffic light signals, pedestrian crossings should be equipped with the regulatory sign specified in the 1968 Vienna Convention on Road Signs and Signals,

and motorists should, if necessary, be alerted to their presence by a danger sign suitably positioned on the approach to the crossing. Crossings should also be **clearly marked on the road, as stipulated, for example, by the Vienna Convention on Road Signs and Signals (Annex 2) and be** illuminated much more brightly than other parts of the road.

When vehicles are permitted to change direction at intersections of streets or roads equipped with traffic lights, measures should be taken to increase the safety of pedestrians on a pedestrian crossing. Accordingly, clear information should be given to pedestrians alerting them to possible danger, and also to motorists warning them to take care when changing direction.

Moreover, signal phases at traffic lights should provide reasonable time for safe crossing of pedestrians. In special cases, detection technologies should be used to provide extra clearance time for the crossing of slow pedestrians.

At pedestrian crossings with no traffic lights, the speed of approaching traffic should be limited, to enable safe crossing for pedestrians.

Finally, at high-risk spots - in particular [...] where a carriageway consists of several lanes in each direction or where vehicles tend to travel at higher speeds - pedestrian crossings should be **avoided** whenever possible. **If this is not possible, they should be equipped** with a central island and/or any other provision together with good lighting, to ensure safe crossing by pedestrians, especially children and elderly people.

8.1.3 Pedestrian subways and footbridges

Where a large number of pedestrians have to cross a road with dense fast-moving traffic of more than two lanes, footbridges and subways, if properly maintained, lighted and accessible to all users, including those with reduced mobility, can provide a good solution. In addition, where the crossing of a road on foot, at road level, is potentially dangerous, pedestrians should be prevented from crossing by barriers and/or other obstacles.

8.1.4 Pedestrian zones

Pedestrian areas are intended and should be designed for the use of pedestrians. National legislation should give clear prescriptions on the conditions under which certain categories of vehicles and users are permitted to enter them as well as on signs, speeds and permitted times applying to such areas. Special care should be given to the access walkways leading to and from pedestrian areas.

8.1.5 Traffic Calming Zones

Ensuring low speeds within built-up areas is crucial for the safety of pedestrians. However, it is generally not sufficient just to place traffic signs to create a zone with reduced speed. It is also necessary to employ various special means of infrastructure. For this purpose, various types of infrastructure can be envisaged such as, for example, zones where pedestrians can benefit from enhanced safety. The two most frequent types of zones are described below.

8.1.5.1 30 km/hr zones

This is a zone designed for calmed-down traffic, at no more than 30 km/h having an appearance that differs substantially from that of a regular road. **It should be indicated by an appropriate signal such as, for example, that shown in the Vienna Convention on Road Signs and Signals.** Its design and planning are directed towards both less traffic and slower speeds. **When establishing such zones,** the enactment of some or all of the following measures may be considered:

- (1) Creating visually distinctive “gates” at the entries to the zone.
- (2) Establishment of a 30km/h overall speed limit.
- (3) Designing roads and adjacent areas in a manner that discourages speeding.
- (4) Providing substantial areas in the zone for walking and for non-motorized traffic.

[...]

- (5) Yielding right-of-way to traffic coming from the right (left in countries moving on left side).
- (6) Using various types of coverings instead of asphalt in order to make certain places conspicuous.

8.1.5.2 Residential zones

In places where the number of cars is so low that the entire surface of a street may be used for walking or even playing, and in places where numerous pedestrians should be able to cross “everywhere”, such pedestrian preference zones **referred to as “residential zones”** may be established. They should be designed in such a way that it is obvious for drivers that vehicles do not have the right of way over pedestrians and that they must adapt their speed to give way to pedestrians in the zone.]

These zones should be signposted for motorists by the use of an appropriate regulatory sign such as the one described in the 1971 European Agreement (**see new paragraph 14 of item 22 – Ad Annex 1, Section E, subsection II**) supplementing the Vienna Convention on Road Signs and Signals.

See also **item 20 bis** (ad. Article 27 bis “Special rules for residential areas signposted as such”) of the 1971 European Agreement supplementing the Vienna Convention on Road Traffic.

8.1.6 **School zones**

Special attention should be given to school zones and special measures should be taken when new schools are to be constructed or existing schools are modified to ensure a high level of safety for children (see chap. 9, para. 9.1). In addition to these provisions relating to infrastructure, special attention should also be given to safety on the routes taken by schoolchildren, as dealt with in chapter 4, paragraph 4.1.

8.1.7 Infrastructure provisions for pedestrians in rural areas

Footways in rural areas should be either established completely independently from the road or separated physically by an elevated kerb, grass band or a wide shoulder. Carriageway markings or narrow shoulders are often not sufficient to provide adequate safety.

8.1.8 Direction and information signs for pedestrians

Good orientation based on direction and information signs can contribute to greater safety for pedestrians. These signs may prevent pedestrians from getting lost or disoriented in traffic and enable them to give full attention to the traffic situation, and be used to indicate the safest routes.

8.1.9 Provisions for other non-motorized road users

Facilities designed for improving the safety and convenience of cyclists and other non-motorized travellers (skaters, scooter riders, etc.) should not compromise pedestrian safety. Where no separation of these road users is possible or desirable, the road infrastructure should be designed in such a way that it can safely accommodate cyclists and other non-motorized road users.

8.1.10 Comfort provisions for the safety of pedestrians

Comfort provisions such as even pavement surfaces, provision of seating and shelter play a role in the safety of pedestrians. This is especially true for the elderly and handicapped, and may prevent accidents caused by falling.

8.1.11 Maintenance of pavements for pedestrians

Pavements should be designed and maintained to ensure evenness and skid-resistance. No obstacles should hinder the mobility of pedestrians. De-icing and clearing the pavements of snow in the winter is important.

8.2 Recommendations concerning counter-flow bus lanes

In order to reduce the accident risk for pedestrians crossing a carriageway with a counter-flow lane reserved for certain categories of vehicles, special attention should be given to appropriate facilities such as:

- (a) Pedestrian crossings controlled by light signals; or,
- (b) Refuges on the outside edge of the lane in question, with a sign on each refuge and on the opposite pavement reminding pedestrians to look in the appropriate direction for approaching vehicles.

Additionally, crossing elsewhere than at the specially arranged places mentioned above should be discouraged through the installation, where necessary, of protective devices separating the counter-flow lane and the pavement. Care should also be taken to ensure that protective devices are not sited in locations where passengers alighting from buses could be trapped between the bus and the device.

8.3 Recommendations concerning safety at tram stops

To ensure safety at tram stops, passengers should never have to board directly from the carriageway or alight directly and unprotected onto the carriageway. To this end, tram stops should be situated either on the edge of a pavement or a designated island, or, in the case of a narrow street, on a raised section of the carriageway protected by a light signal. Some form of raised structure **may** in any event **be** necessary to enable elderly or handicapped persons to board and alight without difficulty.
