Pedestrians safety

ROAD SAFETY SEMINAR
PIARC/AGEPAR/GRSP
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Contents

- WHO’s data
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Source: WHO
WHO reports that...

- 1.2 million people are killed on roads every year and up to 50 million more are injured.
- If current trends continue, the number of people killed and injured on the word’s roads will arise by more than 60% between 2000 and 2020.

Source: WHO 2005
WHO reports that...

- Most of these injuries will occur in developing countries where more and more people are using motorized transport.
- In these countries, cyclists, users of public transport and pedestrians are especially vulnerable to road traffic injuries.
Pedestrians: Road vulnerable users

- Pedestrians are one of the road users that suffer most in road accidents.
- Pedestrians include people of all ages, children and elderly people, and some are disabled.
- Pedestrians, cyclists and motorcyclists are particularly vulnerable to road traffic injuries.
Risk factors

- Visibility and speed are risk factors that contribute to road injuries
- Interventions are required to reduce these risks
- See and be seen is fundamental for the safety of everyone on the road
Pedestrian needs

- Pedestrians want and need safe access to all destinations
- Uncontrolled locations, intersections and mid-block locations
- Pedestrians must be able to cross streets and highways at regular intervals
Improving pedestrians safety

Several measures can be taken to improve conditions for pedestrians:

- Slowing vehicle speed
- Reducing and improving street crossing distance for pedestrians
- Improving the visibility of pedestrians and motorists
- Providing pedestrian facilities
Pedestrian facilities

- Pedestrian facilities attempt to balance the completing needs of pedestrians safety and vehicle movements

- Several measures can be implemented to assist pedestrian safety:
  - Roadside facilities
  - Crossing facilities
  - Design considerations
  - Special programs
Rodsides facilities

- Footways on urban roads
- Footways along rural highways
- Shoulders
Roadsides facilities in urban area...

- People should be able to walk in reasonable comfort and safety, as walking is an essential
- Roadside safety is achieved by separating modes of different speeds and vulnerabilities
- Footpaths should not be allowed to be used as parking space
Roadsides facilities in urban area...

- In some urban locations, inadequate space for sidewalks forces pedestrians onto the roadway and create safety problems.
Roadsides facilities in rural area...

- In rural area, there is a considerable risk for pedestrian due to the higher vehicle speed as well as the lack of pedestrian facilities.

- In the roadside, pedestrians may feel exposed and vulnerable when walking directly adjacent to a high-speed travel lane.
Roadsides facilities in rural area...

- Lower concentrations of pedestrians in rural areas
- But considerable risks exist due to higher vehicle speeds and the lack of pedestrian facilities
Roadsides facilities in rural area...

- The reliance on walking in developing countries often necessitates siting pedestrians footways on rural highways. They should be separate from the roadway by at least 3 m where possible and guardrails may need to be installed.
The situation can be addressed by the provision of segregated footpaths.

Source: Highway Agency

PIARC/AGEPAR/GRSP
Road safety seminar in Lome, 11-13 October 2006
Roadsides facilities in rural area...

- Adjacent footpaths to the carriageway on the hard shoulder
- Separated footpaths on a special way
Crossing facilities

- Pedestrian refuges
- Medians
- Safe intersections
- Marked crosswalks
- Traffic signal controlled pedestrians crossing
- Raised pedestrian crossings
Pedestrian refuges and medians

- A pedestrian refuge island is most useful in two-way streets with moderate or heavy traffic, and where pedestrians require frequent crossings.
Pedestrian refuges and medians

- The design of medians should be pedestrian-friendly and avoid introducing unessential obstacles.
Safe intersections

- Minimize conflicts between modes signal phasing, crosswalk, etc
- Minimize pedestrian exposure to moving traffic
- Keep intersections easily and fully comprehensible for all users
- Intersections provide the best locations to control motorized traffic to permit pedestrians crossing
Marked crosswalks

- Marked crosswalk are any portion of a roadway at an intersection or elsewhere distinctly indicated as a pedestrian crossing by lines on the surface (MUTCD)
Marked crosswalks

- Tell the pedestrian where to cross
- Tell the motorist to expect pedestrians at a particular location
- The design of the crosswalk must be easily understood, clearly visible and incorporate realistic crossing opportunities for pedestrians
Marked crosswalks
Marked crosswalks

- Provide marked crosswalks:
  - at urban signalized intersections for all approaches of the intersection
  - across an approach controlled by STOP sign where judgment determines there is significant pedestrian activity and vehicle-pedestrian conflicts are important
Traffic signal controlled pedestrians crossing

- At signalized intersection and on busy multilane highways with significant volumes, traffic signals with pedestrian signals create a gap for pedestrians to cross intersections.
- Pedestrian signals are needed to ensure that a pedestrian knows when the signal phasing allows them to cross and when they should not be crossing.
Pedestrians signal
Traffic signal controlled pedestrians crossing

- Signal allowing pedestrians to cross should be long enough to ensure that a pedestrian can fully cross the entire street.
- 1.2 m/s walking speed is traditionally used.
Raised pedestrian crossings

- Raised crosswalks raise the level of the pavement to the height of the curb.
- The grade change slows traffic
- The grade increases visibility and conspicuity at the intersection
- Not recommended on busy arterial streets
Where provide pedestrian facilities?

- Spot location problem -> one location
- Corridor problem -> several sequential intersections or along a corridor
- Targeted area problem -> area where problems are similar throughout (commercial or business district, school)
Design considerations

- Visibility
- Lighting
- Guardrails
Visibility

- Marked crosswalks
- Advance warning signs
- Additional lighting
- The use of daytime running lights on vehicles
Lighting

- In poor lighted areas, illumination greatly increases the motorists’s ability to see pedestrians walking along the road.
- Lighting can reduce nighttime accidents.
- Pedestrian crossings should have adequate lighting.
Guardrails

- Used to direct pedestrians towards safe crossing and to prevent pedestrians from crossing at locations deemed particularly hazardous.
- Should be of adequate height and design to prevent pedestrians from climbing over.
Programs

- Enforcement
  - Priority assigned to pedestrians facilities must be enforced
  - Otherwise, facilities offer only a misleading sense of priority and a false sense of security
  - Willingness to enforce driver observance is essential
Programs

- Education
  - Implement pedestrian and drivers education program
  - Install initiatives to enhance pedestrian safety
  - Things to remember as a driver
Conclusions

- Motor vehicle growth
- Larger and faster motor vehicles
- Lack of priority and attention given to pedestrians movements
- Lack of any simple and effective measures for pedestrian safety
- A practical approach to improving pedestrian safety is needed
Conclusions

- Enforcement and publicity campaigns designed and timed to complement and coincide with engineering improvement measures.
- Strategy must be considered for the development of pedestrian facilities and the improvement of pedestrians safety: Immediate Action and Long-term Action
Conclusions

- **Immediate Action:**
  - Knowing pedestrian problem areas
  - Conflict areas need to be addressed in a realistic manner
  - Planning pedestrians facilities, education program **and** enforcement
Conclusions

- Long-term Action
  - Development of safe networks for pedestrians use
  - Definition of a road classification system
  - Monitoring of pedestrians facilities
Thank you for your attention!