## TF 4.1.1. Road Design Standards

### Strategies / Objectives

- Provide the PIARC member road administrations with materials for their road geometric design standards to be improved and fortified further.
- Analyze analogies and differences and make a list of standards in the geometric design of roads, based on traffic flow rate and composition, road functionality and orographic constraints.
- Analyze the reliability of various models, such as:
  - stopping distance
  - stopping sight distance
  - overtaking distance
  - overtaking sight distance
  - decision-making distance
  - decision-making sight distance
  - crossing distance
  - crossing sight distance
  - minimum radius in curves
  - speed change distance for entries and exits
  - additional lane on ramps
- Investigate the use of Big Data with regard to the geometric design of road infrastructure.
- Analyze the implications of the new mobility (electric vehicles, connected and automated vehicles,…) in geometric design of road infrastructure.
- Encourage coordination with other TCs and TFs, such as T.C.1.4 - Climate change and resilience of road networks, T.C.2.2 – Planning Road Infrastructure and Transport to Economic and Social Development, T.C.2.4 Road Network Operation/ITS, T.C.3.1 – Road Safety, T.C.3.3 – Asset Management T.C.3.4 Environmental Sustainability in Road Infrastructure and Transport, T.C.4.2 - Bridges, T.C.4.3 - Earthworks and T.C.4.4 - Tunnels.

Road Administrations have standards establishing the technical requirements that roads must meet depending on the type of road planned and the flow rate and composition of traffic. In this way, the design of the road lay-out is defined according to various factors such as the independence of the carriageways, access control, orographic conditions, the urban environment and its functionality as part of the general transport system. The minimum parameters of the horizontal alignment, vertical alignment and cross-section are defined, as well as the general criteria for obtaining adequate coordination between them, based on functionality, road traffic comfort and road safety, together with economic and environmental considerations.

The aim of the Task Force focus on collecting these standards from several countries and analyzing analogies and differences to make a list of standards in geometrical design, taking into account the type of road, based on its functionality, the flow rate and composition of traffic, as well as other orographic, environmental and economic constraints.

The models used to define the lengths of the various lay-out elements, as well as those used to calculate the sight distances required for various driving actions (stopping, overtaking, taking decisions based on signs and unforeseen events, making a track crossing, …) have not been reviewed for many years and their current reliability needs to be checked.

In addition, it is necessary to check their reliability to face the new mobility - new propulsion techniques and connected and autonomous driving.
Task Force investigates the use of new tools such as Big Data to reconsider design parameters and models based on road user behavior and use, in order to achieve higher levels of safety and comfortability in road networks.

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