

This document is intended to give a quick guide. The downside is the risk of approximation and incompleteness. For more information please consult the documents referenced in this document

Urban

► Certu 2007/13



Safety and hierarchy of urban roads

The purpose of this document is to provide information on the advantages of a hierarchy in an urban road network as an essential element of a coherent safety policy.

It covers the various types of hierarchy uses, the advantages of hierarchising and its consequences in urban areas.

What is hierarchisation of a road network?

Road hierarchy is a means of representing a network of roads in different pre-defined ways.

It is a means of analysis that meets the requirements of classification and organisation of a traffic network.

It can also be used for planning facilities and used as a reference point for that.

It can furthermore be used to obtain advantages in terms of safety via greater coherence between types of road and therefore by better network legibility for users.

Types of network hierarchy

There are many types of hierarchy (no single model).

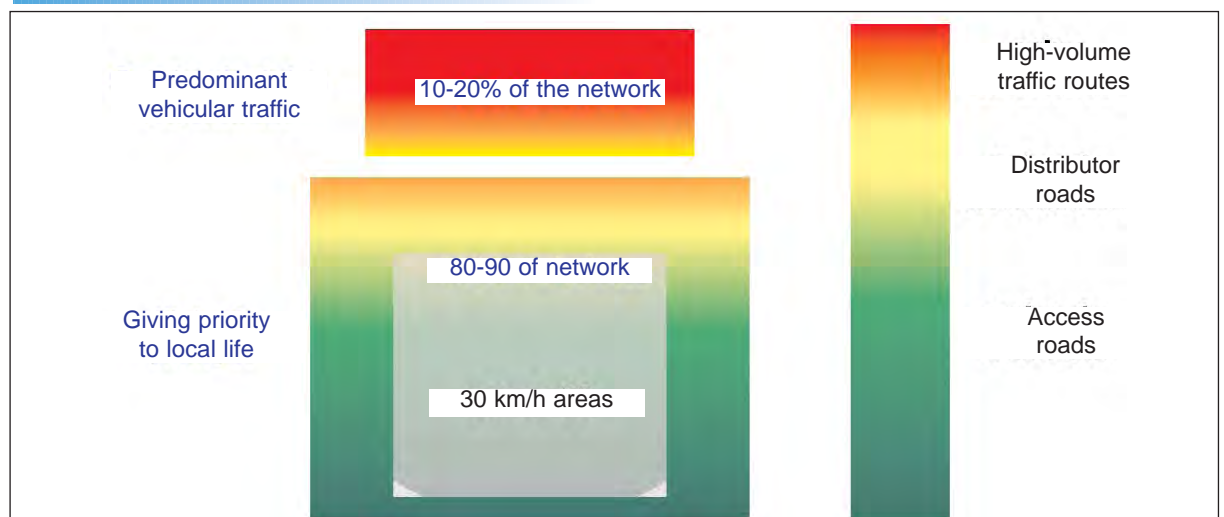
For interurban roads, categorisation of streets is predetermined by two types of hierarchy:

- by main contractor: Route Nationale (RN), route Départementale (RD), voie communale (VC);
- functional: by type of traffic (volume), type of speed (130,110, 90, 70, 50, 30), by type of connection (green network) and these various categories are often connected.

For roads in urban areas, the type of hierarchy is even more complicated. On top of the hierarchy for interurban, there are other types of hierarchy:

- functional according to the type of connection, for example: primary (structure), secondary (distribute) or tertiary (service);

Example of operational hierarchy of roads



- by type depending on the right of way as part of urban development (urban rapid routes, boulevards, avenues, streets, etc.);
- by type of road depending on the nature of roadside construction (set back, alongside, height, etc.);
- by type depending on social practices (local life, emblematic buildings, etc.);
- via multiple-criteria analysis including the various uses and requirements of public space.

Hierarchy in urban areas

Decree 90/1060 of 29 November 1990 on reduced speeds in built-up areas, with its memorandum of application, defined new regulations in slowing and moderating speed. More than just a regulatory measure, it is a concept that defines the link between the speed limit, the design of the road and the social function of the street, with the aim ensuring safety for all modes of transport.

Why hierarchy?

Creation of an urban transportation plan (PDU) provides an opportunity to examine existing hierarchy, identify inconsistencies and define a new hierarchy that matches validated objectives and future changes in the area. The process must therefore clarify road types according to activities and urban functions. It should cover all types of transport and ensure that these types of usage and their users can live with each other.

The resulting hierarchy, which will be implemented over the medium term, becomes a basic tool for planning future roads and serves as a reference for all concerned. It also provides faster recognition of the user and thus the use of behaviours that are better suited to the risks on the road and in its surrounding environment.

Creating a hierarchy

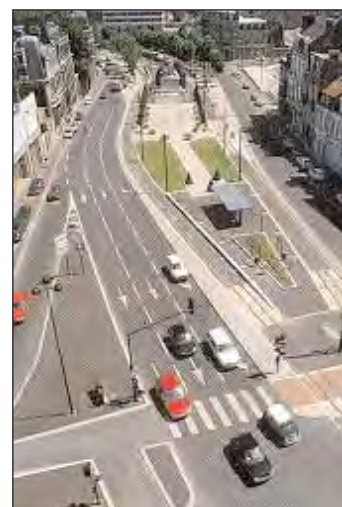
A hierarchy is increasingly based on the inclusion of two main functions, traffic and local life. The road class is defined according to the preference given to one or other function.

The ideal features of these classes should match the initial objectives of the PDU: division of the roadway, the development of alternative modes and user safety. Corresponding measures usually come from traffic calming devices.

What hierarchy within built-up areas?

Today, with the experience gained in 30 km/h areas and the example of European countries, especially Germany, hierarchy resting on two main levels is often advised with:

- main roads where a balance between traffic functions and local life needs to be maintained. Speeds on these roads is usually limited to 50 km/h or 70 km/h if traffic predominates over local life. Organisation of space on these roads is in principle organised (junctions, pedestrian crossings, etc.);



Example of a main road

- low speed areas, usually 30 km/h, spread across a large part of the urban territory protecting local life and providing safety for the various users of the network by moderating speeds and removing extraneous traffic from these areas.



Example of a low speed area

What are the pitfalls to be avoided?

Implementation must be coherent and global to avoid the risk of traffic falling back onto unsuitable roads. In order to be effective, the road hierarchy should be simultaneously put in place within 30 km/h zones and on 50 km/h roads.

What are the links with urban planning?

The hierarchy must also be taken into account through urban planning policies: maintaining a density of constructions, overseeing installation of facilities as long as the town planning scheme does not change and neither does the street.



Associated subjects

- Powers of mayoral, local council and prefect police in urban areas
- Links between town planning and safety
- Speed and road operation in urban areas
- Controlling speed through design
- Urban roads: uses and users
- History of priority rules

Bibliographic references

- Conception d'un plan de sécurité pour la ville de Rennes (Rennes safety plan design), FLEURY (Dominique) ; JOURDAN (Yvon) ; CADIEU (Jean-Pierre), PARIS, INRETS, April 1995.
- Méthodologie pour une hiérarchisation du réseau viaire : l'exemple du centre-ville nantais (Methods for hierarchy of the road network: Nantes city centre), Thesis, IGAR, Université de Nantes, CETE de l'Ouest, LYON Certu, 1994.

- Sécurité des routes et des rues (Road and street safety), Setra, BAGNEUX CETUR, September 1992.
- Guide général de la voirie urbaine: Conception, aménagement, exploitation (General guide to urban roadway networks?Design, layout, operations), BAGNEUX CETUR, May 1988.

- French Highway Code: Regulatory section, book 1 - general conditions, heading 1: Definitions, Articles R 110-1, R110-2, R110-3, updated 20 October 2005.
- French Highway Code: regulatory section, book IV - Road usage, heading 1: general conditions, chapter III, Speed, articles R413-1 to R 413-19.
- Decree no. 90-1060 of 29 November 1990 and implementing circular on moderating speeds in built-up areas.

The series of documents "Basic Road Safety" formed part of the MPSR project "Road Safety Management and Practices" by RST working groups managed by Certu for urban areas and by Sétra for interurban areas.

This series of documents is published only for the purposes of sharing experience.

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These sheets can be downloaded from the following web sites:

- Certu (<http://www.certu.fr>)
- "DSCR road safety "job portal" (<http://securite-routiere.metier.i2>)
- Sétra (intranet: <http://catalogue.setra.i2> and Internet: <http://catalogue.setra.equipement.gouv.fr>).

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