

**XXIIInd WORLD ROAD CONGRESS  
DURBAN 2003**

**FRANCE - NATIONAL REPORT**

**STRATEGIC DIRECTION SESSION ST1**  
***Road quality service levels***  
***and innovations to meet user expectations***

# Service Levels and Responses to User Expectations: The French Experience

## CONTENTS

1.1.1.1

1.1.1.2 FOREWORD

## ABSTRACT

<b>1. SERVICE LEVELS: EXAMPLE OF THE "QUALITY IMAGE" METHOD</b> .....	<b>6</b>
1.1 QUALITY IMAGE OF NATIONAL ROAD NETWORK PAVEMENTS (IQRN) .....	5
1.2 IQRN DEVELOPMENTS PLANNED IN 2002 .....	7
1.3 QUALITY IMAGE OF ENGINEERING STRUCTURES (IQOA BRIDGES) .....	7
1.4 QUALITY IMAGE OF RETAINING WALLS (IQOA WALLS).....	8
1.5 FORTHCOMING QUALITY IMAGE: DRAINAGE AND ROAD EQUIPMENT.....	10
<b>2. RESPONSES TO USER EXPECTATIONS</b> .....	<b>11</b>
2.1 USER CONSULTATION .....	11
<b>2.1.1 User Satisfaction Barometer</b> .....	<b>11</b>
<b>2.1.2 Users' Forum</b> .....	<b>12</b>
<b>2.1.3 The "Satisfied? Dissatisfied?" Operation</b> .....	<b>13</b>
2.2 SERVICES TO NON-CONCESSION (TOLL-FREE) MOTORWAY USERS .....	13
<b>2.2.1 Service Areas</b> .....	<b>13</b>
<b>2.2.2 Rest Areas</b> .....	<b>14</b>
<b>2.2.3 "Stop-off Villages"</b> .....	<b>14</b>
<b>2.2.4 Village Services</b> .....	<b>15</b>
2.3 SPECIFIC SERVICES FOR LORRIES.....	15
<b>2.3.1 Parking on the Concession Motorway Network</b> .....	<b>15</b>
<b>2.3.2 Parking on the Non-Concession Motorway</b> .....	<b>15</b>
2.4 SAFETY MEASURES ON THE NATIONAL NON-CONCESSION NETWORK .....	16
<b>2.4.1 Treatment of Side Obstacles</b> .....	<b>16</b>
<b>2.4.2 Protection of Motorcyclists</b> .....	<b>17</b>
<b>3. CONCLUSION</b> .....	<b>18</b>

## Foreword

This national paper presented by France is intended for the Strategic Direction Session ST1 “Service Levels and Innovations to Meet User Expectations”.

Facilities and safety in road tunnels have undergone considerable changes in the past three years in France, including new regulations (Circular 2000-63) applicable in France since 25 August 2000 to all existing road tunnels more than 300 metres long and to all new tunnel building. However, this subject will not be addressed in this paper as it is being dealt with in detail by the relevant PIARC Technical Committees.

## Abstract

### 2. Quality Image of Road Assets

**For nearly ten years in France, a “quality image” approach has been implemented for national road assets: road pavements (1993), bridges and tunnels (1994) and retaining walls (June 2000).**

The “roads” quality image mobilises a hundred people and, after nine campaigns implemented throughout National Road Network since 1993, it is now planned to move towards a system using higher-output equipment that gives more importance to skid resistance.

The evaluation of engineering structures began with bridges and tunnels and was extended to retaining walls in June 2000. An inventory has been made of bridge assets on the national road network and their qualitative evaluation has been started.

The quality image approach is soon to be extended to drainage and national road facilities.

### 3. User Consultation

The Directorate of Roads pays particular attention to the satisfaction barometer and the users’ forum to better know and satisfy user expectations and requirements. 2002 is a year of change in this scheme.

The satisfaction barometer is used to find out road users’ opinions on the journey they have just made, in terms of the carriageway, roadside, traffic signs, services, safety, etc. It now has to be improved and adapted.

The users’ forum (meetings for exchanges of opinions organised at central level) tackles users’ problems and behaviour patterns. Since 1995, some fifteen forums have been organised and they are set to be developed at local level.

## 4. Responses to User Expectations

User consultations lead to significant adaptations to the services provided along the national road network.

For instance, two new concepts have been experimented in France over the past few years: “village services” and “stop-off villages” which enable services to be offered to road users by drawing on the local economic fabric. At present, there are twelve stop-off villages on three motorways (A20, A75 and A84). Three more communes are candidates – which shows that this concept is of great benefit.

In the field of road freight transport, increasing requirements for stopping facilities have become manifest. On the non-concession network, although the problems centre on just a few routes, they are not easy to solve. The State may take the initiative of creating the lorry parking facilities that are lacking.

## 5. The “Forgiving” Road

To improve road safety, the new “**forgiving road**” concept makes allowances for road users’ fortuitous behavioural errors. To this effect, at the end of 2002, the Ministry of Public Works will publish a technical guide that will help to assess the roadside safety level and implement corrective solutions.

Lastly, to make planners and managers of county or local roads aware of the specific risks incurred by motorcyclists, and to encourage them to implement special measures such as those in force on the national road network, in 2000 the Ministry of Public Works, Transport and Housing prepared and issued a guide on specific facilities for the protection of motorcyclists.

**End of abstract**

## 6. Service levels: Example of the “Quality Image” Method

One of the major objectives of the Directorate of Roads, in its capacity as owner of the French national road network, is to be provided with continuous evaluation of all road assets and to regularly monitor their patterns of change. To achieve this objective, a “quality image” approach has been devised and implemented, which initially concerned road pavements (1993), and then engineering structures (bridges and tunnels in 1994). In the light of conclusive results in these two domains, the Ministry of Public Works sought to extend the Quality Image approach to retaining walls (June 2000) and a study is now being made for a Quality Image of road drainage equipment and systems.

### 6.1 Quality Image of national road network pavements (IQRN<sup>1</sup>)

**The evaluation of national road network pavements – which extend over nearly 280 million square metres in France – made on a one-third basis every year, uses a visual recording of pavement damage and transverse deformation, completed by skid-resistance measurements.**

The IQRN operation, which mobilises a hundred people, is based on the following recordings:

- a visual recording of surface damage (DESY),
- transverse deformation (TUS),
- surface damage on heavily-trafficked routes (GERPHO),
- transverse deformation on heavily-trafficked routes (PALAS),
- transverse friction coefficient (microtexture – SCRIM),
- texture depth by sand patch test (macrotexture - RUGOLASER).

All these collected data are processed and converted into ratings from 0 to 20, divided into three categories:

- a surface rating (NS)
- an asset rating (NP)
- an overall rating (NG, that synthesises the first two ratings)

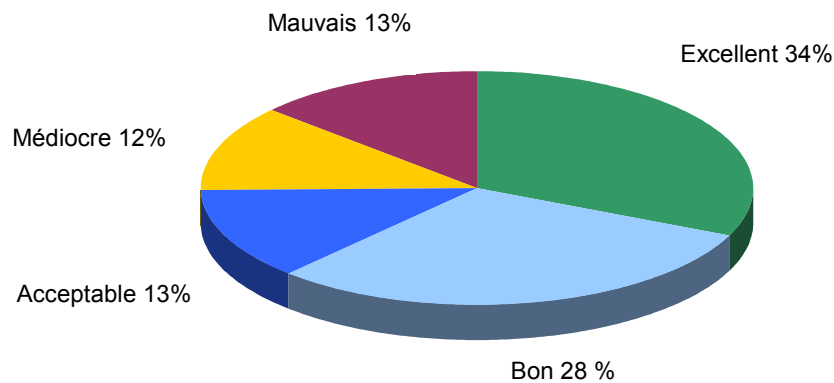
For easier reading and interpretation of the results by non-specialists, the overall ratings (NG) have been grouped into the following classes.

Rating Classes	Quality Level	Definitions
20	A (excellent)	Excellent (no damage)
19	B (good)	Good (minor localised damage)
18-17	C (acceptable)	Acceptable (minor extensive damage)
16-13	D (poor)	Poor (serious extensive damage)
<13	E (bad)	Poor (serious generalised damage)

<sup>1</sup> Image Qualité des chaussées du Réseau routier National

Every year, a synthesis of the ratings is issued by département (~ county), which can be used to compare the condition of national roads in a département, by category, in relation to the condition of French roads as a whole, on the one hand, and to compare the results with those of the previous campaign, on the other hand (year N-3).

### Quality Image of the National Road Network (IQRN) 2001 updated results (SETRA data)



Excellent = Excellent

Bon = Good

Acceptable = Acceptable

Médiocre = Poor

Mauvais = Bad

## 6.2 IQRN Developments Planned in 2002

After nine campaigns over the entire National Network since 1993, it is now planned to develop the IQRN as follows:

### 1. Introduction of high-output recording equipment.

The main system currently in use (DESY) enables a recording to be made at a speed of between 5 and 10 km/h. The use of high-output equipment, which groups the measurement of all the parameters into a single pass (except for the longitudinal friction coefficient), would reduce the cost of the recordings and avoid having to install road signs and heavy-duty site protection, which is increasingly difficult to provide. A study is therefore in progress by the Directorate of Roads, in cooperation with SETRA<sup>2</sup> and LCPC<sup>3</sup>, to determine requirements and to analyse existing products or the possibility of developing a product by the Ministry.

<sup>2</sup> Service Technique des Routes et Autoroutes (Roads and Motorways Engineering Department)

<sup>3</sup> Laboratoire Central des Ponts et Chaussée (Central Road Research Laboratory)

## 2. Semi-automatic or automatic analysis of visual recordings.

Visual recordings are currently made by graphic film on heavily-trafficked roads (approximately 1,900 km per campaign). Processing of data from these films by operators is a lengthy, fastidious process, and the transfer to digital technology is being studied with a view to automating, or at least simplifying, the analysis of recordings.

## 3. Taking into account the skid-resistance coefficient

There is room for improvement in the IQRN approach, which has now been in use for ten years. It has particularly been shown that the inclusion of skid-resistance in the IQRN overall rating must be reconsidered.

4. Taking into account the experiences of other European Union countries, particularly under Franco-German cooperation.

### 6.3 Quality Image of Engineering Structures (IQOA): Bridges

**A comparable method to that for evaluating pavement condition was introduced in 1994 to evaluate the condition of engineering structures. Priority for this evaluation was given to bridge assets, which number more than 23,000 and account for a deck surface area of 8.3 million square metres.**

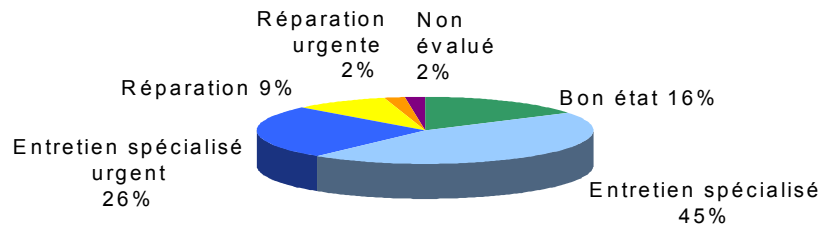
All bridges are thus evaluated on a one-third per year basis, referring to distress lists that enable non-specialist inspectors to classify the structures according to their condition and to identify structures liable to pose problems, which are then subjected to a more in-depth level of investigation (such as detailed inspection or instrumented inspection). All the collected data enable the bridges to be classified in the following classes:

CONDITION CLASSES	
Class 1	Bridge in good visible condition requiring regular maintenance
Class 2	- Bridge whose structure is in good visible condition but whose equipment or protection components have defects, - or whose structure has minor defects, requiring specialised non-urgent maintenance.
Class 2E	- Bridge whose structure is in good visible condition but whose equipment or protection components have defects, - or whose a structure has minor defects, requiring specialised urgent maintenance, to prevent the rapid development of distress in the structure and its subsequent classification in class 3
Class 3	Bridge whose structure is deteriorated and requires non-urgent repair
Class 3U	Bridge whose structure is severely deteriorated and requires URGENT repair, resulting from inadequate bearing capacity or rapidly worsening distress.
Class NE	Non-evaluated bridge

Where necessary, special reference is made to the fact that user safety may be jeopardised, irrespective of the structural condition of a bridge.

An annual synthesis of recordings reflects the condition of engineering structures in the national road network. The changing pattern of this condition from one year to the next, or even over a longer period, will then provide guidance for the owner's policy, particularly by identifying the bridge families that require priority maintenance work.

**Quality Image of Engineering Structures in the National Road Network (IQOA)**  
**Bridges**  
*2001 updated results (SETRA data)*



Entretien spécialisé = specialised maintenance  
 Bon état = good condition  
 Non évalué = not evaluated  
 Réparation urgente = urgent repair  
 Réparation = repair  
 Entretien specialise urgent = specialised urgent repair

**6.4 Quality Image of Engineering Structures (IQOA): Retaining Walls**

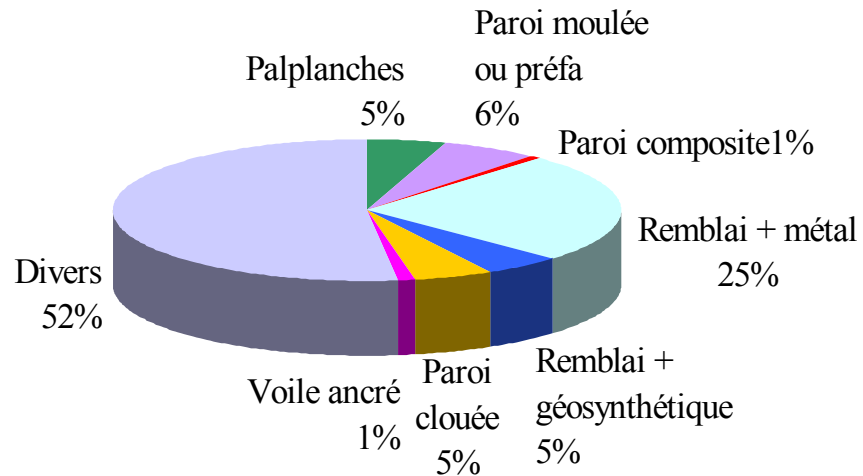
As the IQOA was highly beneficial for bridges (and tunnels) on the national road network, in 1999, the Directorate of Roads asked the Roads and Motorways Engineering Department (SETRA) to extend this evaluation approach to retaining walls, another most important part of road engineering structure assets.

Implementation of the “Walls” IQOA method thus began in June 2000, through a walls field inventory which confirmed the considerable importance of this little known part of road assets (whereas it covers more than 13,000 walls, an overall surface area greater than 3.3 million square metres and a total length of nearly 1,000 km). To advance quickly towards a significant evaluation, walls in the national road network were divided into two families. The first family consists of structures whose real condition can be approximated by its visible condition, and the second concerns structures that are more complex to evaluate.

The number of walls in the first family was 11,884 for a surface area of 2,630,924 m<sup>2</sup>; and in the second family 1,744 for 639,541 m<sup>2</sup>.

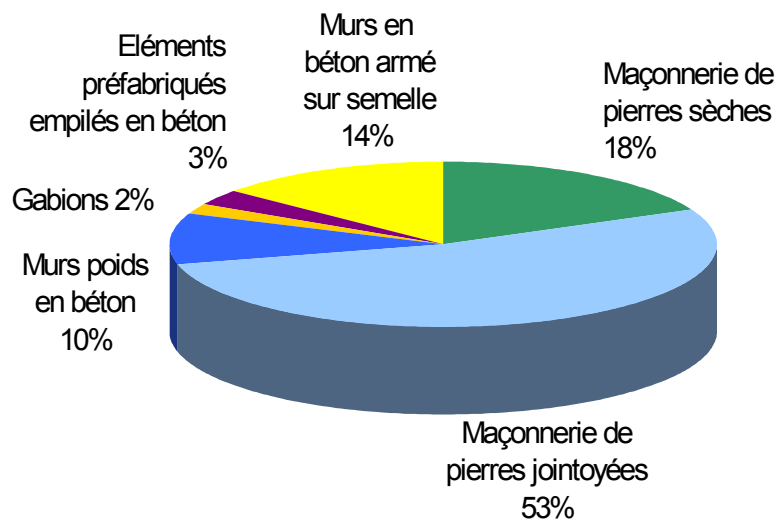


**Quality Image of Engineering Structures in the National Road Network (IQOA)**  
**Walls whose condition can be evaluated from their visible condition**  
*2001 updated results (SETRA data)*



Palplanches = sheetpiling  
Paroi moulée ou préfa = diaphragm or precast wall  
Paroi composite = composite wall  
Remblai + metal = Embankment + metal  
Remblai + géosynthétique = Embankment + geosynthetic  
Paroi clouée = soil-nailed wall  
Voile ancré = anchored wall  
Divers = misc.

**Quality Image of Engineering Structures in the National Road Network (IQOA)**  
**Complex walls whose condition is to be evaluated through specific investigations**  
*2001 updated results (SETRA data)*



Murs poids en béton = concrete gravity walls

Gabions = gabion walls

Éléments préfabriqués empilés en béton = concrete piled walls of precast elements

Murs en béton armé sur semelle = reinforced concrete walls on footing

Maçonnerie de pierres sèches = dry stone walling

Maçonnerie de pierres jointoyées = pointed stonework walls

In 2003, this first stage in the quantitative inventory of the IQOA Walls method will be extended to a qualitative evaluation, which can be used to implement optimised maintenance programmes and major repairs on retaining walls on the national road network. Pending the conclusion of this second stage, for the first time in 2002, the Directorate of Roads allocated to the Directions Départementales de l'Équipement<sup>4</sup>, budgets that were exclusively dedicated to maintenance on walls and were calculated on the basis of surfaces of walls bordering the national road network, identified in the IQOA Walls inventory.

### **6.5 Forthcoming Quality Image: Drainage and Road Equipment**

**One of the short-term prospects for a new form of the Quality Image approach concerns drainage and safety measures on national roads. Study on such an approach is now in progress between the Directorate of Roads and its technical network.**

<sup>4</sup> County Public Works Directorates

## 7. Responses to User Expectations

A road is not an end in itself. Its purpose is to meet many different requirements. Since the early 1990s, the Directorate of Roads has introduced a system to better know and satisfy user expectations and requirements. In 2002, this system is taking new forms and opening up new perspectives.

### 7.1 User Consultation

**To begin with, over and above targeted or local opportunities such as traffic surveys, new project studies or contacts with elected representatives, the Directorate of Roads has acquired the means to enable more systematic and consistent consultation of road users.**

This consultation is based on three tools:

- The Satisfaction Barometer of national road network users,
- The Road Users' Forum,
- The "Satisfied? Dissatisfied? Operation"

#### 7.1.1 The Road Users' Satisfaction Barometer

**The "Satisfaction Barometer" is used to find out users' opinions on the journey they have just made, in terms of the carriageway, roadside, traffic signs, ancillary services, safety conditions, etc. It is a statistical instrument, country-wide in scope, with input each year from the replies of 10,000 people, interviewed at the sides of national roads during their journeys, and as many people again alongside toll and toll-free motorways.**

The first surveys were begun in 1994 for national roads, and in 1995 for concession and non-concession motorways. The first results were published three years later (time taken to build the initial data base). They were followed by regular updates.

The latest edition of results confirms the great satisfaction expressed for motorways (overall rating of 7.55/10) and the satisfaction, which was again high (overall rating of 6.10/10), for national roads. The following table breaks down these overall ratings into their component parts:

	Motorways	National roads
<b>Overall rating</b>	<b>7.55</b>	<b>6.10</b>
Traffic conditions	7.65	6.15
Road condition	7.70	6.55
Road surroundings	7.40	6.40
Traffic signs/information	7.40	6.15
Available services	7.35	5.05

The barometer is definitely a relevant indicator for measuring the results of the State's road-related policy and action, but users' opinions on nearly all the subjects submitted for their appraisal are shown to be consistent from one year to another, which raises the question of the real value of maintaining such a "barometer" in its present form.

**The Directorate of Roads has consequently undertaken a study on the suitability of this tool.**

### **7.1.2 The Road Users' Forum**

In addition to the quantitative indicator, which is the satisfaction barometer, the Directorate of Roads required a qualitative tool and thus initiated the "Road Users' Forum".

**This second consultation method (which takes the form of a meeting for collective study and discussion) enables a better understanding of road users' problems and behaviour patterns,** through an exchange of opinions between a dozen users, conducted by a facilitator, in the presence of three or four Administration representatives (who do not take part in the discussions). The users are "ordinary" users (and not representatives mandated by associations, trade unions or others) chosen according to the subject under discussion.

Since the first forum in 1995, fifteen meetings of this type have been held on various subjects, such as road information; ancillary services; divided carriageway roads; traffic in the Rhône Valley (winter sports holidays); lorry traffic in winter; the perception of road signs or road maintenance by users.

Each forum gives rise to full minutes and a summary circulated widely in the departments, in the form of a short, fifteen-page brochure, which thus helps to provide better responses to users' expectations.

**Recent users' forums, held in several County Public Works Directorates on their initiative, have demonstrated the benefit of these forums at local level. They are thus destined to be further developed at this local level in order to continue to improve public debate, particularly on themes that are the concerns of the Directorate of Roads and the Directorate of Road Safety and Traffic.**

### **7.1.3 The "Satisfied? Dissatisfied?" Operation**

**The "Satisfied? Dissatisfied?" Operation was created to enable users to give spontaneous expression to what they think about roads.** The idea, taken from "Complaints Books" placed on the toll network motorway, is to make cards available to users in County Public Works Directorates, Local Public Works Subdivisions, Town Halls, petrol stations, hotels, etc., which are carriage paid to the address of the local County Public Works Directorate, which undertakes to reply within six months to the remarks and observations thus formulated.

In 1998, this operation was extended throughout the county. The main subjects addressed by users are: traffic conditions (21%); road and roadside condition (15%); road signs (13%); hazardous areas (12.5%); local road policy (10%); rest areas, stopping areas and lay-bys (8%). It is not surprising that most of the observations (81%) are of the "dissatisfied" type...

This initiative has not given the expected results, mainly because of the hit-or-miss availability of the cards (motorists must stop at the right place!) and the difficulty in making it a permanent operation (the local Public Works departments have tended to consider it as a “one-off” operation).

**A diagnostic study to provide guidelines for the future has nonetheless concluded on the benefit of maintaining the operation in its principle : user consultation is increasingly perceived and accepted as a necessity by the public works departments. The “Satisfied? Dissatisfied?” Operation will thus be continued once it has been adapted.**

## ***7.2 Services to Users of the Non-Concession Motorway Network***

**Consultation of users of the French national road network has given an insight into a series of evaluations and expectations, some of which are leading to significant adaptations along the non-concession motorway network, particularly along roads with a special status.**

The national road network contains two distinct categories of roads: “ordinary” national roads (about 22,000 km), and express roads (nearly 6,000 km) with motorway or near-motorway characteristics and a specific status laid down by law: motorways, limited-access roads and by-passes.

Along the national roads, there is complete permeability with the environment and the surrounding economic fabric – moreover, many urban areas are crossed by these roads. This means that barring exceptional cases, service to the user consists solely in private initiatives of a commercial nature, or possibly public authority initiatives.

Roads with specific status, on the other hand, are relatively closed off from their surroundings, because in their principle, they have a limited number of access points and local residents’ property has no right of access. On these roads, service to the user is organised by the State, mainly through service areas or rest areas. But new trends are emerging, due both to the traffic levels (sometimes quite low) and to the changing overall economic context.

**Therefore, to complete the offer of services along the main road network, and to help the communes recover part of their economic activity bound up with road traffic, which was lost with the opening of a motorway (or other expressway), new forms of service to the user have been devised, which seek to make the most of all the possibilities offered by nearby villages. To this end, two concepts are being experimented in France: “Stop-off Villages” and “Village Services”, which enable the road manager to draw on the local economic fabric to propose services situated outside the right-of-way itself.**

### **7.2.1 Service Areas**

Installation and devolution procedures for services areas at the side of non-concession motorways, limited-access roads and by-passes are governed by precise legislation and regulations, whereby:

- service areas are put up for concession after a call for bids;
- in principle, the concession makes the construction and maintenance of these areas payable by the concessionaire, without requiring any State budgetary expenditure or personnel;

- these areas are established in accordance with a synoptic diagram drawn up for the entire route in the light of user requirements. Prior consultation of professional organisations representing the fuel distributors is strongly recommended to determine where they are to be located. In the same spirit, a document (without any constraining value) entitled “A short Economic Assessment of Service Areas”, has been issued to the County Public Works Directorates to help them judge, before they make the call for bids, whether or not the planned site is likely to be satisfactory from a commercial point of view.

**The creation of new service areas is more difficult today, particularly because of competition trends in the fuel distribution sector. Changes will be required without delay to adapt the service area concession system to present-day economic and financial conditions.**

### **7.2.2 Rest Areas**

Rest areas are designed to offer road users satisfactory conditions for parking and resting, and in principle they do not include any commercial activities. They are managed and maintained by the State Public Works Departments.

However, it is possible to put at least part of a rest area up for concession, to provide catering services, hotels, shops or tourist information, but not fuel distribution. Little use has been made of this possibility to date, but it is in this direction that the Directorate of Roads intends to advance, in order to maintain the service to users while reducing the maintenance expenses borne by the Administration.

### **7.2.3 Stop-off Villages**

**These “stop-off villages”, which have been experimented since 1995, firstly on a large “regional development” motorway, then on a large part of the interurban express roads in the national non-concession network, have been really successful among users and are set to be further developed.**

The main criteria to be met to become a stop-off village, are to be situated less than 8 km from the relevant road exit, not to have more than 5,000 inhabitants and not to be serviced by an interchange less than 20 km away from a service area.

To obtain the appellation, the candidate village must meet the requirements of a Quality Charter. It must offer the following:

- Accommodation (offer of 40 beds in the village) – including at least one two-star hotel (offer of 20 beds in the village), bed-and-breakfast and self-catering “gîtes”;
- Catering facilities – at least 200 couverts in one or more restaurants;
- Information – a two-star tourist office and some reception facilities;
- Shops – a bakery shop, grocer’s, tobacconist’s and newspaper stall;
- An access point, a landscape, parking space and a good-quality environment.

Requirements for prices, opening hours, bankcard payment, continuity of hotel service and information in several languages ensure a high standard of service for tourists and motorway users. Stop-off villages are indicated by a pictogram beside the name of the village and signs announcing the presence of restaurants, hotels and information points, which are located in the motorway link sections and close to the exit providing access to the village.

**At the end of 2002, 12 communes situated along three motorways (A20, A75 and A84), have obtained the “Stop-off Village” label, and applications from three others are being studied, which shows the high desirability of this concept.**

#### **7.2.4 Village Services**

This system is primarily intended to compensate for the insufficiency or possible lack of basic services that the user expects to find on the road itself: possibilities for stopping to rest and relax, fuel distribution and catering facilities.

In return for the supply of these services, under certain conditions of opening times and availability (in particular, mandatory continuity of service for fuel distribution, 24 hours a day, 7 days a week), these villages are signposted on the arterial road. They must be close to an interchange.

#### **7.3 Specific Services for Lorries**

**The main service expected by lorries is the possibility to stop regularly under satisfactory conditions. The continuous development of road freight transport, together with rest and driving time regulations for drivers, is increasing parking requirements for lorries along arterial roads in the national network. These requirements result in saturation of parking capacities, that may be regular or periodical, is often localised and varies according to the routes.**

At the end of 2000, an evaluation mission in charge of making the most thorough diagnosis possible and identifying guidelines for solutions, submitted its report on the parking problem for lorries, differentiating between the concession network and the non-concession network.

##### **7.3.1 Parking on the Concession Network**

The concession motorway network concentrates most long-haul heavy traffic. This is where requirements for parking space are the greatest but also where the solutions pose the least problems. Concession companies are well aware of the issues at stake and continue to create parking space at a pace at least equivalent to the current pace which is already strong. The number of permits granted by the Directorate of Roads for this type of work, which is quite costly, is rapidly increasing.

### **7.3.2 Parking on the Non-Concession Network**

**On the non-concession network, the problems are more limited and more concentrated on a few arterial roads (particularly National Road 4, the “Centre Europe-Atlantique” (east-west route), and the A31 and A84 motorways) but solutions are more difficult to find and implement.**

The first difficulty lies in the knowledge, which is still inadequate, of both requirements and parking capacities. In fact, owing to the opening of the non-concession network onto its surroundings, it is necessary to take into account not only the “public” supply, resulting from available parking space on rest and service areas of motorways and limited-access roads, but also the supply originating from the private sector or local authorities, such as road centres, car parks, roadside restaurants or development areas. This second type of supply is virtually the only one on ordinary national roads, where rest areas are few and far between.

An initial inventory of the available capacities on non-concession routes (those included in the major road and motorway projects for regional development) was made in 2000 by the Roads and Motorways Engineering Department (SETRA).

In 2001, the Directorate of Roads, following the recommendation of the study mission, also asked the Regional Public Works Directorates to set up regional observatories of parking space supply, which have the task of completing and updating the data bank thus formed.

**It clearly transpires that an effort to create parking space is essential and that the State must take the initiative of this effort, whether by building or extending areas on the existing roads or those under development. The extent of the identified requirements shows that it is essential to make use of supply other than public supply, which will go beyond the specific State efforts (particularly through partnership-type projects associating insofar as possible the various interests concerned, such as road centres, or chambers of commerce and industry).**

These points are also discussed with the representatives of the road transport sector and the other Administrations concerned, in conjunction with the lorry parking safety problems (particularly freight theft).

### **7.4 Safety Measures on the National Non-Concession Network**

Safety is the first of the services offered to users of a road network. In France, road safety is one of the government’s priorities, for France has recorded one of the worst results in Europe in terms of road victims, with nearly 8,000 deaths per year (all road networks combined). Among the steps taken by the Ministry of Public Works to reduce accidents on the national road network, three are presented here.



#### 7.4.1 Treatment of Side Obstacles

There are countless numbers of “side obstacles<sup>5</sup>” along the road network: hundreds of thousands, or even millions of trees, posts, aqueduct heads, masonry constructions of all kinds, and even road equipment. They can often be dangerous, by greatly worsening the consequences of vehicles running off the road. This is particularly true when they are close to the carriageway, where they cause more than **1,800 deaths each year** (nearly a quarter of all traffic accident fatalities).

Side obstacles form one of the areas that offer the most possibilities for action in the fight against road hazard. This is because the treatment of obstacles consists in safety operations whose costs are often very affordable, with a socio-economic benefit that can be very great for the community. Resistance tends to be of a cultural, environmental or legal nature, or due to the need for consultation between the stakeholders.

The new “**forgiving road**” concept also makes allowances for road users’ fortuitous behavioural errors. Improving the intrinsic road characteristics – road alignment, junctions, shoulders for recovery manoeuvres, etc. – and safety facilities, is of prime importance, but it cannot suffice to avoid all veering off the road. Much of this veering off the road is due to ordinary mistakes, that may even be benign in theory (carelessness, inattention, etc.) without being criminal behaviour (unlike drunken driving or speeding). A vehicle may also run off the road through trying to avoid a stray animal or because of another vehicle swerving off course, or it may lose control through a burst tyre. To minimise the bodily impact of such accidental running off the road, there is a contiguous “**limited severity**” zone, on which special treatment is given to dangerous roadside obstacles or layouts.

**To help managers of the trunk road network outside built-up areas in this effort, at the end of 2002, the Ministry of Public Works will publish a didactic technical guide on methods and good practice to be implemented when a decision is taken to treat a certain road in order to enhance its safety. It is intended for people in charge of managing, improving or designing roads and should enable them to assess roadside safety levels, and to propose corrective and preventive solutions that are appropriate, efficient, and tiered to priority aims and constraints.**

This guide forms an integral part of the safety policies set out by the Directorate of Roads and the Directorate of Road Traffic and Safety.

#### 7.4.2 Protection of motorcyclists

**Motorcycle accidents on curved sections of the road network can often be dramatic when the motorcyclist falls off and hurtles into the supports of vehicle restraint systems installed alongside the carriageway.**

To reduce these hazards, in 1999 the Ministry of Public Works, Transport and Housing undertook a programme to make these restraint systems (crash barriers) safer for motorcyclists.

---

<sup>5</sup> The term “obstacle” is understood as a dangerous obstacle. It refers to any side object (with respect to the carriageway), a fixed layout or a structure, localised or continuous, that is liable to worsen the consequences of a vehicle accidentally running off the road and colliding with it, particularly by blocking the vehicle’s path or causing it to overturn. This definition does not include vehicles and pedestrians, whether or not they are moving, as they concern different problematics.

It is now mandatory to install such systems on all the following new infrastructure in the national road network:

- Motorways and divided carriageway roads, on the outside of curves with a radius of less than 400 metres;
- On other roads, on the outside of curves with a radius of less than 250 metres;
- At the roadside of grade-separated junctions.

**To improve the existing national road network, and also give priority to the criteria adopted for new roads, a programme of 3 million euros per year has been implemented. In 2000 and 2001, 6.25 million euros were accordingly devoted to these safety facilities, which concerned some 150 km and more than 300 accident-prone sections (mainly curves).**

**To make planners and managers of county or local roads aware of the specific risks incurred by motorcyclists, and to encourage them to apply such measures, in 2000, the Ministry of Public Works, Transport and Housing has prepared and issued a guide on specific facilities for the protection of motorcyclists.**

## **8. Conclusion**

**Knowledge of road assets, user consultation and solutions to meet priority requirements, particularly road safety requirements, are high on the list of priorities of the Directorate of Roads, which is the owner of the national road network in France. Under its impulse, and with the assistance of its technical network, innovative measures continue to be implemented. Today, the oldest of these are being modernised and developed toward new sectors, as their relevance has proved sustainable. New measures, particularly in the services offered to users, will continue to be devised and experimented, in order to further improve the links between the road, road users and the areas through which they pass. Lastly, the new guides issued to road managers by the Ministry of Public Works should enable road safety to be enhanced, particularly through the treatment of roadside areas. All these measures have tended to result from study and discussion mobilising a large number of partners, including road users, whom the owner of the national road network places at the centre of its road policy.**