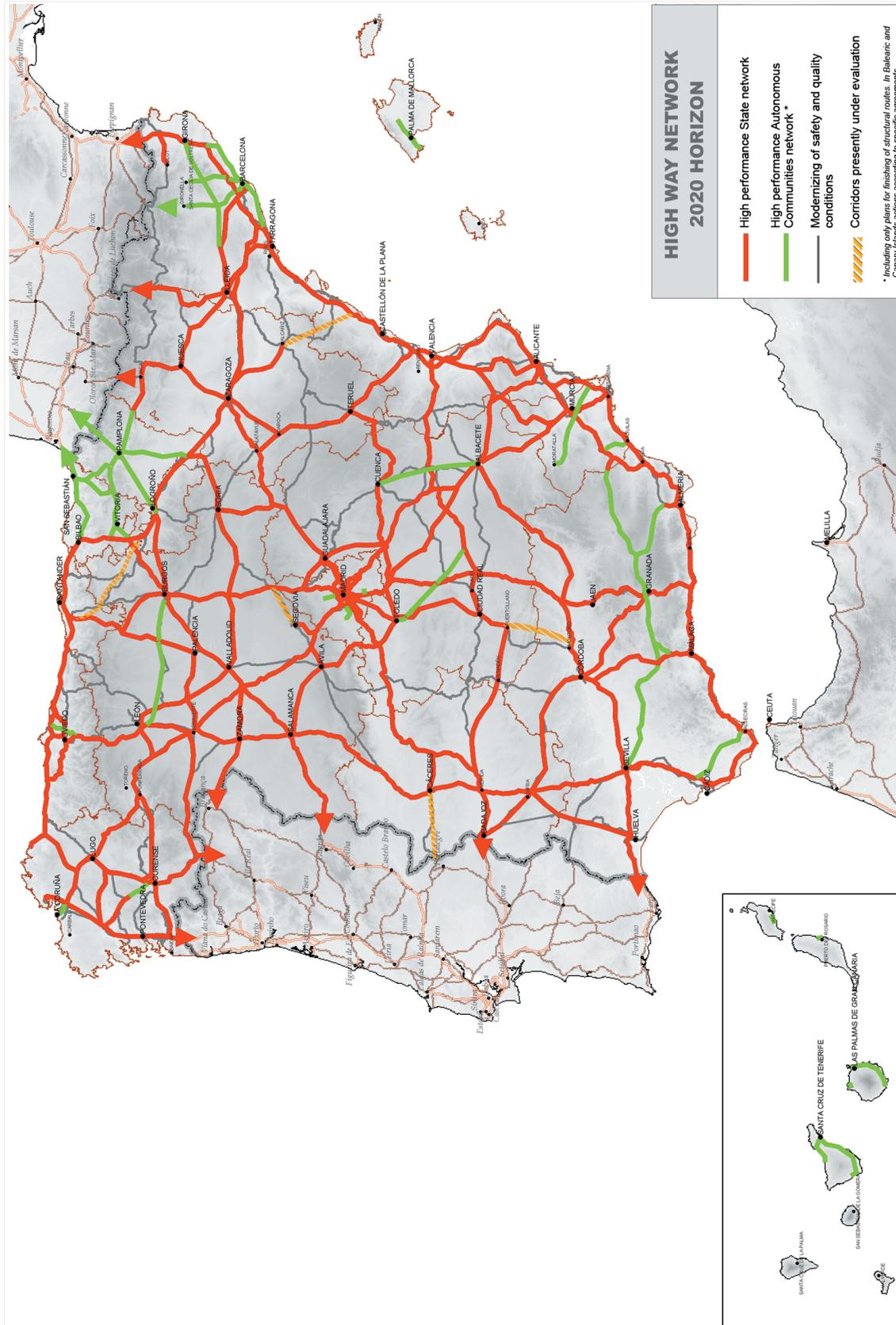


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FIGURE 22. The 2020 Roads Network



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6.3.2.2. The State High-Performance Roads Network

The high-performance road network will be made up of high-capacity routes (dual carriageways or motorways), where safety standards are high, and with the progressive implementation of advanced management and user services systems.

These actions are at various stages of study. According to the present situation and available forecasts, the following will be defined:

- a) Action at points which will come into service or be at a very advanced stage of development within the horizon of the Plan's first phase (2008), most of them routes which are already considerably matured in terms of planning and construction.
- b) Action on those where studies have been completed, and which even have been submitted to public discussion, or for which preliminary evaluation already completed points to a medium level of priority. The precise programming of this action will depend on the results of prior compatibility studies.
- c) Action on the Spanish road network away from the mainland (the Balearic and Canary Islands), until now linked to specific Agreements, will be placed in future in intermodal arrangements based on an integrated vision of each transport system, so that resources can be channelled toward the specific requirements of those areas in terms of both infrastructures and transport services. The Roads Sector Plan thus incorporates no specific actions on route infrastructure in these regions.

Action on the State's high-performance road network is dealt with in a framework which considers all infrastructures of this type held by any Administration; the appropriate action in each case, and its funding, are in principle in the hands of the Administration with that competence. This makes it necessary to define the functional Basic Network, brought up in the section on highway guidelines (5.2.1).

Action coming within the 2005-2008 horizon in the State Roads Network must concentrate on the many routes still under construction, and create a more balanced and functional network structure in the medium term.

6.3.2.3. Upgrades, town through-routes and bypasses

The proposed action involves the improvement of the existing pavement throughout the whole, although road doubling is not in principle considered necessary within the PEIT time horizon. Town bypasses, or the upgrading of through-routes, control of accesses and the user assistance systems on these routes will be completed in integrated form.

In general, town bypasses are not just supposed to complete long-haul routes, but also to eliminate through-routes where traffic conditions are problematic, in accordance with the guidelines in section 5.2.1.

The development is also proposed of a system of trunks to be called "green roads", through areas of high environmental value, with alternative high-capacity routes, and where the aim is to maintain moderate traffic levels in all of them, while offering users a travel experience which emphasises the area's natural and cultural values. Accordingly, the conditioning of these trunks will prioritise the criteria of integration with the landscape, safety, heavy-traffic restrictions and the establishment of a set of traveller services (rest areas, information on the settings, parallel routes for pedestrians and bicycles). Because these trunks may provide a tool which contributes significantly to the local development of the area where they are embedded, the coordination of such actions with other Administrations will be encouraged.

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6.3.2.4. Safety, maintenance and exploitation

This heading deals with five programs for action which, in turn, include different types of sub-programs, shown in summary form on the following table.

ROAD CONSERVATION AND EXPLOITATION PROGRAMS	
PROGRAM	ACTIONS
MAINTENANCE AND SERVICES	Maintenance: integrated conservation Maintenance: Direct management Service Maintenance Horizontal signalling Others
REPLACEMENT AND UPGRADING	Pavements Through-routes Vertical signalling Earthworks and foundations
ROAD SAFETY	Treatment of areas where accidents are concentrated (TCA) Preventive Road safety audits
EXPLOITATION	Information and control Use and protection Access control and reorganisation Service areas Rest areas Weigh stations Tourism signalling Implantation of ITS Complementary and environmental actions Controls on Toll Motorway operation Tunnels Others
UPGRADING OF FIRST-GENERATION DUAL CARRIAGEWAYS	Enhanced road safety, pavement renewal, and equipping

Action corresponding to the Conservation and Services Program are currently under way throughout the dual carriageway and non-toll motorway system and on a substantial part of all conventional highways, under Integrated Conservation Contracts. The Sector Plan will have to review indicators of the state of the components and the standard of quality of the services used under those contracts, and possible improvements required to be made to the system.

Network sectors where there is no integrated conservation contract are dealt with directly. The Sector Plan must include procedures for the optimisation of this management.

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The aim of the Replacement and Upgrading Program is to restore the characteristics of highway facilities which have completed or are nearing the end of their useful lives to their initial state. The Sector Plan must analyse and revise the systems for the identification and scheduling of actions, depending on the need to upgrade their structural and functional features, and of the most adequate indicators, based on the experience of the Directorate-General of Roads. This program's actions include the following:

- pavement rehabilitation needed on nearly 20,000 km of the Network, and a campaign of preventive action on the rest, throughout the eight years covered by the Plan;
- scheduled through-route work, for structural reinforcement or functional upgrading, or to improve durability;
- Earthwork, including the rehabilitation and upgrading of clearing slopes and embankments, their containment elements (rockfill, walls, ...) and improvements to drainage associated with their stability;
- updating and replacement of vertical signalling which has deteriorated with the passage of time.

Under the Road Safety Program, the Sector Plan will have to review the concept of sectors where accidents are concentrated (TCA)⁴. Road Safety Program actions include dealing with all such sections currently listed (807) and those detected in the future (estimated at 250 a year) and the implementation of all the preventive actions in the inventories. Road safety audits will also be introduced for existing routes, and projects must include a road safety supplement.

The Exploitation Program has grouped action on user information, that for the protection and control of the existing stock of roads, rest and service areas, weight controls, and tunnel facilities. In relation to ITS and user information services, this program will implement the terms of the National Plan for ITS Deployment.

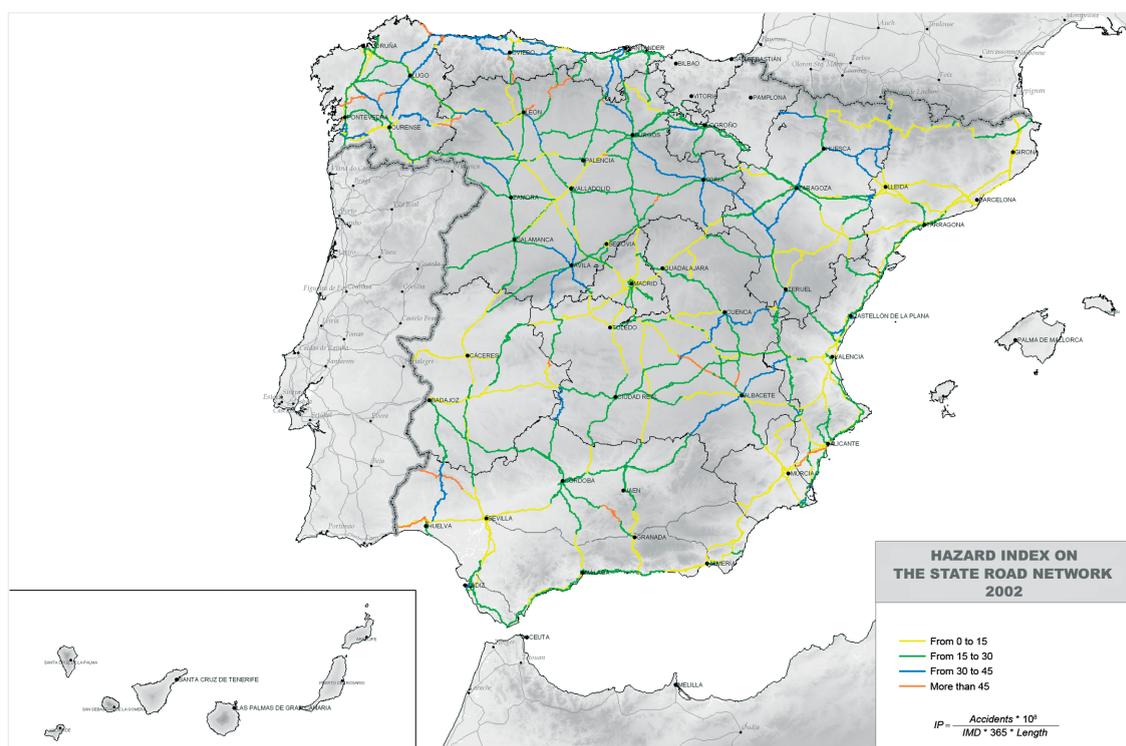
The Program to Upgrade First-Generation Dual Carriageways aims to enhance the conditions of these infrastructures which, at the time, were built largely by duplicating existing routes. Because of increased traffic and traffic speeds and the number of accidents on these roads, work has become necessary to improve and upgrade them, to bring them into line with new safety demands and, as far as possible, with recently-published rules and recommendations on roads. With the available resources, it would take about 8 years to deal with all expenditure demands, so that it would seem to be necessary to seek a formula which makes it possible to move the financing of these necessities forward as much as possible. The following are the objectives on these routes:

- To deal with all sectors where a concentration of accidents has been noted, and all the existing route deficiencies.
- To improve road layout and links, to secure conditions of safety and ease of use similar to those of the latest-generation dual carriageways.
- To provide them with the necessary service routes to control accesses.
- To restore the pavement and through-routes to their initial condition.
- To replace, update and complete fittings.

⁴ *Tramos de Concentración de Accidentes*. Network sectors where the accident risk is significantly higher than the average on sectors of similar characteristics, and where action to improve the infrastructure might foreseeably lead to an effective reduction in the accident rate.

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FIGURE 23. The Hazard index on the State Roads Network 2002

**6.3.2.5. Territorial, landscape and environmental integration**

This refers to noise protection measures, routes for fauna, transversal permeability and shoulder planting. Such actions can be valued as a percentage of the total cost of work which must be done, but the Sector Plan must establish general criteria for their systematic inclusion, and review the guidelines applied at present.

6.3.3. The Road Transport Sector Plan

Actions in regulating road transport services will be implemented in a review of the specific provisions and their enforcement, coordinated with the Autonomous Communities and in cooperation with the operators. The Intermodal Passenger and Goods Transport Plans must provide the framework of reference for such action, throughout the effective term of the PEIT. However, the following can be indicated as actions to be undertaken immediately:

- Amendment of the Land Transport Act Regulations.
- Reinforcement of controls on compliance with driving times and rest periods for drivers working in road transport, with the introduction of the digital tachometer.
- Development of a new training framework for road transport entrepreneurs and employees.
- Improved road transport safety conditions.
- A program to improve job health conditions and job-risk prevention in the road transport sector.
- To promote the input from road transport toward enhancing the environment, and more efficient energy use.
- Development and updating of the PETRA and PLATA plans.