

TWO ITALIAN PILOT PROJECTS TO INCREASE PEDESTRIAN SAFETY

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Introduction

For many years, in Italy, safety has not been considered as a priority and this can be proved by the lack of an appropriate legal and regulatory framework up to the second half of the '90s. Until this period, the only regulatory utilities in force were the 1959 National Highway Code - a set of laws for improving traffic conditions with no special regard to pedestrian problems and updated only in 1992 - and some series of prescriptions for infrastructure design not compulsory up to their 2001 edition. The first real step towards an increase of safety standards is the 1995 Urban Traffic Plan decree n° 146/24.6.95 by Ministry of Public Works (PUT), compulsory for all municipalities with over 30,000 inhabitants

Nevertheless, the national accident rate has been growing steadily. In 2000, 211,941 accidents occurred involving persons. 6,410 were killed (13.2% were pedestrians) and 301,559 were injured (5.6% were pedestrians). About 75 % of accidents occurred in urban areas. Elderly are the most exposed: in 2000, 53% of all pedestrian fatalities involved persons aged over 65; 9.5% involved persons aged under 24 (2001 ISTAT Data). The average social cost for this problem has been estimated at about 22 million Euros per year.

1. The National Plan for Road Safety

A prompt reply was needed from the Government in terms of new strategies to be implemented, as well as in terms of citizen awareness on safety matters.

Important changes occurred when, in 2000, the Ministry of Public Works issued the Law n.144, 17.7.1999 for a National Plan for Road Safety (NPRS), to face safety problems by the definition of an appropriate, strict, efficient policy to control all the main risk factors.

The NPRS is a system of directions and measures to promote and increase plans aimed at improving road safety standards with special regard to infrastructure design, to accident prevention and control activities, to legal, regulatory and management matters, so to achieve the EU goal: 50% reduction of the total amount of deaths or injuries in road accidents.

The NPRS content is based on three directions:

- problem and risk analysis,
- setup of suitable interventions on the most dangerous infrastructures
- safety increase for vulnerable users.

The problem and risk analysis outlines a series of negative aspects as a big amount of road rule offenders, the high rate of fatal accidents involving vulnerable users, low safety standards along many roads turning into dangers for all road users.

Each one of these problems calls for specific sets of measures and interventions, according to different items:

- regulatory activities (issue of guidelines, standards, parameters to meet the highest safety requirements),
- “fostering” measures (actions for supporting infrastructure management bodies in planning and designing pilot projects),
- direct interventions (initiatives directly aimed at disseminating information among politicians and technicians, increasing control activities on the road)
- coordination activities among all involved partners.

The translation of such a complex program into real interventions requires actions focused both on citizens requirements and on places performances, in two directions: dangerous road systems and users. For the former special care is directed towards urban areas, where safety standards are judged as not appropriate, given the high rate of accidents. For the latter, users are divided into two categories: the vulnerable ones, i.e. the disabled, and the so-called “risky” ones, i.e. the elderly, children, young drivers, alcoholics, etc.

The most innovative aspect is the package entitled “Projects and specific interventions to improve road safety” which tackles the promotion of activities for designing and/or supporting safe environments, thanks to specific grants from the Ministry. This package sets two goals: to promote the feasibility and the setup of innovative design proposals especially dedicated to reduce road accidents; the creation of a catalogue for the municipalities where appropriate and effective solutions as results of implemented test projects are reported.

The way to put into practice and to validate these goals is the so-called “Pilot Projects” proposed by road-owners and management bodies in partnership with local administrations.

However, NPRS individuates other domains of application that can be not only part of the Pilot Project tests, but that can be worthy of being supported by extra funding, as:

- professional training for road management and administration operators
- education and information at schools, to start creating a “culture” on road problems
- upgrading of PUTs,
- promotion of safety-oriented local public transportation systems
- reorganization of enforcement management
- study of on-board safety devices

Moreover, special attention is paid to health problems thanks to the creation of a dedicated task for the in-depth study of accident traumas, alcohol and drug influence on drivers and for the setup of medical countermeasures.

2. The Pilot Projects experience

The Pilot Projects’ concept was, on one hand, to develop some tests on the most dangerous sites where to implement holistic designs to increase the overall safety level and, on the other, to partially contribute by fundings to the implementation of packages of solutions, whose costs administrations wouldn’t be able to afford in short times. Total budget for fundings was 11,878,508 Euros, about 198,000 Euros in average for each project. To start the Pilot Projects process was set a competition, addressing the call to municipalities, provinces and regions administrations, school and health authorities, practitioners, public transportation operators, pressure groups, services private companies ad so on.

Interventions to be dealt with in the proposals could envisage: improvements on road links and intersections design, vulnerable users safeguards, alignment readability and perception, enforcement, educational and training programs, monitoring, on-board safety devices, first aid services, awareness, etc. Moreover, for what strictly concerns road design practices in urban areas, the call for competition listed a series of measures to be tested, very innovative for the Italian situation, including:

- traffic calming and 30km/h zones implementation,
- creation of continuous pedestrian paths and cycle tracks,
- improvements on squares, to manage safety and urban activities and to re-gain outdoor areas for citizens,
- sidewalks enlargements
- raised intersections
- creation of pedestrians-dedicated “islands” using spaces from carriageways and parking areas
- promotion of collective modes of transport

In December 2001, the Ministry released the list of the 60 awarded Pilot Projects, all currently underway.

3. Two case studies on pedestrian safety

Pilot Projects totally focused on pedestrian safety are only two, in Genoa and Bologna. Both the design proposals concern safe home-school path systems, but they are very different for size and implementation process and they can be considered as complementary, being Genoa’s project extended to the whole city area and the Bologna’s one on a district where a cluster of schools is located, so the latter can be seen as a detailed follow-up of the former approach.

3.1 The Pilot Project in Genoa

The Genoa’s Pilot Project “*A new path for Genoa’s schools; road safety and strategies*” started from the will to solve a top problem: safety, since in the last decade 28% of fatalities involved young people aged between 18 and 29, 25% involved elderly over 64.

The Project involves users from 50 schools, public libraries and other public centers and it is the result of a common work, developed by Liguria Region and Province of Genoa administrations, the Municipality and its Councillorships, the Districts authorities, the local Police and private companies. Schools have been selected because symbols of the community’s social values and as best places to start participation processes involving all kind of vulnerable users.

The aim of the Project is to create a city system of safe home-school pedestrian paths and to upgrade the surrounding outdoor areas, in decay, so to improve life conditions for citizens, to offer more playgrounds for children and places to gather for teenagers, and eventually to rehabilitate buildings. The urban landscape, indeed, is made of narrow sidewalks paved by asphalt, invaded by cars and by traffic signs, highly polluted in terms of visual perception and monotonous.

The Project concept is based on the revision of the streets role: no more just carriageways, but symbols thanks to elements apt to be easily recognized by the citizens: green, public lighting, less poles and traffic signs, more urban furniture for comfort and ease of pedestrians, redesign of school entrances, traffic calming, monitoring for security; use of appropriate paving materials .

To turn the project's concept into design, sets of standard measures have been studied: they can be implemented in every urban context, selecting, case by case, the most suitable ones. These are: speed limit in residential areas at 30 km/h; raised crossings; protected pedestrian paths and cycle tracks along local streets with high pedestrian flows; change in the alignment of the carriageways, enlargement of sidewalks and removal of architectural barriers. Special care has been taken to design some unusual safety devices as the re-shape of the "school gate" (i.e. to set back the school entrance from the sidewalks so to have a wider safe area, a kind of buffer between the school building and the street) or the creation of green fences and railings along the sidewalks, as filters between sidewalks and carriageways.

All these interventions are aimed at allowing children to use urban spaces in perfect autonomy, as "exercise" where they can develop their perceptive attitude and their feeling for the environment.

Paths selections have been run by direct surveys on children's way home, observing "on the spot" where they had more difficulties in crossing a street or what they considered "dangerous"; during these campaigns, visual conditions, traffic signs locations, driveways, loading/unloading bays, barriers have been also surveyed and reported on maps.

The Pilot Project's esteemed cost is 774.685 Euro and the 34% has been funded by the Ministry of Infrastructure.

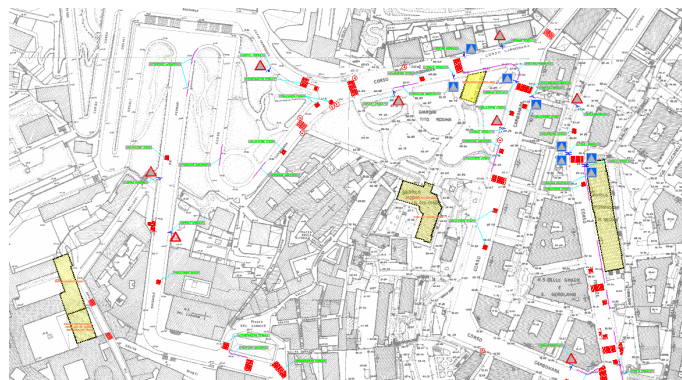


Figure 1. Set of interventions on an area of the 1st district (schools in yellow area) in Genoa

3.2 The Pilot Project in Bologna.

As in Genoa high accidents rates are the circumstances that pushed the Bologna municipality to present the "For a city at children' size. Safe home-schools paths: education, participation, interventions and monitoring activities" Pilot Project.

The promoters have been the Province administration, the Municipality, the Councillorships for Mobility, Social Services and Education, for Security, the Provincial Educational Superintendence, the District authority, the Municipality Police, the dwellers associations and, the personnel, pupils and relatives of the three kindergartens and the two junior schools of the Lunetta Gamberini Park.

As said, interventions stem from the need to drastically reduce the accidents rate and to increase safety standards (about 10% of all the accidents from 1993 to 2000 occurred to pedestrians); second, the promoters believed that a design process aimed at re-shaping and upgrading such an urban context should be supported by other measures apt to make the main users (children aged from 3 to 13) aware of the risks linked to the road. This

explains the dwellers and children's strong involvement into the Project, according to different steps: public surveys by questionnaires and meetings, educational courses among pupils, teachers and parents, consultancies with the citizens during the design phases, children as designers of an innovative traffic signs system.

Such situation induced the Municipality designers to study four "standard" interventions to be implemented on 24 sites of the area, i.e. all the crossing points and the main pedestrian paths of the area. These standard interventions are: protection of sidewalks, of intersections, of crossing points and safe accesses to the park

Each one of them is based on the implementation of the most suitable traffic calming devices for each site, usual safety devices as zebras and traffic signs, removal of architectural barriers, and above all some signs designed by children aimed at alerting drivers and at providing pupils with directions towards safe areas.

Citizens and technicians developed together the decision-making process about "where" and "how" to apply the standard interventions, starting from two levels of information: a kind of list of unsafe places filled in by the citizens and the analysis of the usual routes to school/home, run by questionnaires submitted to all the schoolchildren.

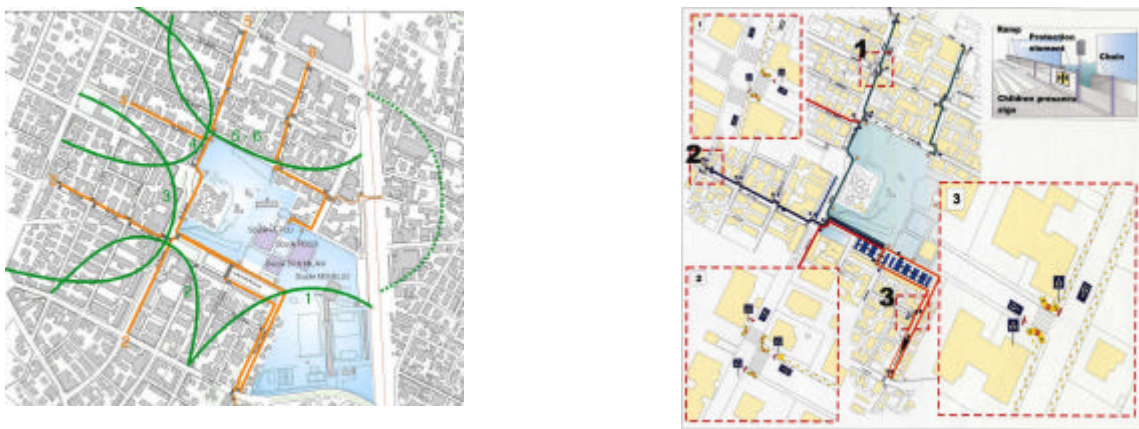


Figure 2. Left: the six pedestrian paths (orange lines) and the cluster of schools (cyan area); right: the standard interventions in Bologna

The result of all these data has been a series of dangerous spots, scattered on the area. The technicians' task has been to link these sites creating six safe paths, from the Park, as main destination, to some centroids as common origins of children trips. They also considered to include in the new paths the most used ways to school, when possible; the aim was to create a new system of routes, but still easily recognizable by children, now aware of traffic dangers.

The Pilot Project's esteemed cost is 206,582 Euros and the 50% has been funded by the Ministry of Infrastructures and Transportation.

Conclusion

Both projects will be soon fully operative: for what concerns Genoa, implementations will start from those districts where safety situations have been considered worse. In Bologna first outcomes from the Pilot Project area are pushing the Municipality to implement such a test in other districts of the city. Both experiences are case studies of the research "Widespread interventions in urban areas for the creation of best solutions for the pedestrian mobility", funded by the Ministry of the Education and University and run by DITS – Department of Hydraulic Transportation and Roads, University "La Sapienza", of Rome. DITS is in charge of assessing the results of the implementation of two pedestrian paths in the case study cities. As a sample of the work in progress is reported in Appendix a form for counting pedestrian data to be used in the next surveys in Bologna.

Acknowledgment

Thanks to Eng. Lo Schiavo (Ministry of Infrastructures and Transportation), to Eng.s Brinati, Ferrecchi and Villa (Municipality of Bologna) and Arch. Macciò (Municipality of Genoa), for providing the Authors with useful information and technical documents on the Pilot Projects.

Appendix

A sample of the record for collecting data on pedestrians



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Name of the surveyor:.....Date:.....Time:.....

Site features

Site:..... Address:..... Weather conditions.....

Insert here location map

Indicate surveyors position and spot to survey

Site environmental features (to be reported on the map)

- Sunny
- Shady
- Protected
- Noisy
- Smells
- Other

Site building features (to be reported on the map)

- Residences
- Shops
- Driveways
- Outdoor market
- Other

Road features flat steep
 Barriers.....Sidewalk width..... Road lanes, no.... ways.....

Pedestrian counts

along sidewalks at crossing point

gender	age							Pedestrian features (add a cross for each item)					
	0-8	9-14	15-20	21-35	36-60	61-70	>70						
Female								stick					
								pram					
								dog					
								wheelchair					
								shopping bag/cart					
								other					
Male								stick					
								pram					
								dog					
								wheelchair					
								shopping bag/cart					
								other					
Total													
Additional information for crossing points: zebra traffic light refuge length													
Average waiting time								1°	2°	3°	4°	5°	average
Cars parked on the crossing point													
Pedestrian sight distance								good	no good	obstacle			