



**CiViTAS**  
Cleaner and better transport in cities  
**MODERN**

# CASE STUDY



## SAFE AND SECURE ROADS FOR A BETTER CITY

### SAFETY AND SECURITY



The measure consisted of implementing two different tools: the road safety monitoring centre and the road safety urban plan “Piano della Sicurezza Stradale Urbana” (PSSU). The monitoring centre transfers georeferenced data - data which defines a physical location through map coordinates - to a web platform in real time. Integrated with smart devices (palmtops, tablet, phones), it allows for instant communication with enforcement agencies such as Istituto Nazionale di Statistica, National Statistical Institute (ISTAT). Data is also fed into the PSSU (Road Safety Urban Plan). The PSSU provides administrators with a local planning tool to improve road safety. The PSSU database shares information with the monitoring centre.

#### Municipal context

Brescia is a medium-sized town located in the Lombardy region of Italy, at the Alpine foothills, about 100 km from Milan.

The Province of Brescia is the largest in Lombardy and covers an area of about one fifth of the whole region. The landscape varies from the vast southern plain (27 percent) to more hilly terrain (21 percent), to the northern mountains (52 percent).

Brescia attracts a lot of traffic from the densely populated province and is one of the areas in Europe with the highest number of vehicles per capita and in 2000, Brescia introduced its Cycle Mobility Plan and established a cycling network that was extended from 30km and the 1990s to 115km. The city has developed a transport plan that specifically works to improve the quality of public transport and enhance sustainable modes in general. These initiatives were received very positively, particularly because they were implemented as part of a participatory and

#### MUNICIPAL PROFILE

##### LOCATION

Brescia, Italy

##### POPULATION

190,000

##### LAND AREA

90,68 km<sup>2</sup>

##### CIVITAS BUDGET

EUR 257,117 (measure budget)

EUR 834,348 (partner's budget)



**BRESCIA IN CIVITAS**

Brescia (Italy) participated in CIVITAS MODERN. Under the motto "MObility, Development and Energy use ReductioN", CIVITAS MODERN connects the cities of Craiova (Romania), Brescia (Italy), Coimbra (Portugal), and Vitoria-Gasteiz (Spain).

**PROJECT INFORMATION**

Representing cities across Europe, each with a desire to preserve their historic and cultural centres from damage caused by private vehicles, the CIVITAS MODERN project enacted 42 measures that led to cleaner and better urban transport. Besides promoting sustainable mobility measures and interaction among the participating cities, CIVITAS MODERN specifically focused on encouraging strong cooperation among scientists and technicians to learn from experience and best practice throughout Europe.

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consensus-building process in which citizens felt truly involved.

The public transport system will be completed with a light metro line. Construction began in 2005 and service will start in 2013.

Brescia is deeply committed to the reduction of road accidents. The city started developing a process to systematically improve road safety and reduce the number of casualties and injuries. The measure implemented during CIVITAS is part of this strategy.

The new tools will optimise the management of public spaces and urban regeneration and so improve road safety. The frequent updating of the database on road accidents will provide adequate mapping of road accidents within Brescia.

**Introduction**

The activities implemented allowed the city to manage road safety problems using a systemic approach and integrate planning actions among municipal departments (mainly the Road Department, Public Works Department and Police Department).

This innovative methodology resulted in significant road safety improvements in the city.

Before the creation of the monitoring centre, the procedure for road accident relief consisted of manually writing a relief form. A database was managed, from 1991 to 2003, by the local University. Road safety related issues had been tackled in the past years without a systemic approach.

Brescia Municipality felt the need to improve the safety of its roads and to better monitor road-accidents. For these reasons, Brescia's administration decided to start collecting more precise data on road accidents to choose priorities in road works and road maintenance. CIVITAS has represented the right opportunity for the change.

The Initiative has been working for years to ensure the safety of urban travellers: bikers, pedestrians and vulnerable groups such as children and the elderly. For these reasons, structure and basic knowledge shared by the project were important to set up the work of this measure.

The approach consists of a new road accident data analysis and mapping system and in the drawing up of a list of critical sites where priority actions are needed. Priority sites were assigned by calculating the road accident rate or counting the absolute number of accidents that occurred in the area.

**Taking a closer look**

Brescia concentrated on research and technology development (RTD) activities in developing a software able to manage different types of data.

The new information system, composed of personal digital assistant (PDA) devices supported by a web platform, communicates detailed information about accidents in Brescia. The data is constantly updated by the Municipal Police.

The system will be able to collect the following information: photos of the accidents (useful to help improve the road safety scenario); standard minutes to be modified on site (useful to speed up reporting actions); location of accidents using GPS (useful to implement road safety actions, reducing mistakes in road accident localisation activity); real time transferring of information and PSSU database implementation, non refined mapping actions.

The software will be also used on smart devices (palmtabs, tablet, phones) to ease data collection and consultation.

The first step towards the implementation of the PSSU in Brescia was an analysis of existing national guidelines on road safety and The road safety plan. Existing good practices at the



international, national and local level were also analysed.

The main innovative aspects of the measure are represented by: the new organisational structure adopted; the improved policy instruments; the new conceptual approach to identify the most suitable solution to the road safety problems; and the newly developed web platform.

As for the organisational structure, the information system has the capacity to be shared by all involved sectors of the administration, aiding in developing accurate analysis.

The PSSU development also represents a new concept towards providing technical and objective criteria with the ability to help the public administration choose the most suitable solutions to counteract road safety problems (blackspots). The PSSU is the first plan developed in Brescia strictly dedicated to road safety and is based on the new conceptual approach foreseen in the National Road Safety Plan introduced in Italy in 2002.

The new monitoring centre represents an innovative solution to ensure the road accident database is automatically updated based on GPS technology and on GIS software.

## Results

The main achievements gained from the activities carried out by Brescia municipality centre around the newly developed decision-making support system. This system is composed of the monitoring centre and the road safety urban plan (PSSU).

The implementation of the monitoring centre enhanced road accident reporting by the local police department. The monitoring centre is now a web platform, commonly used by the local police for the management of the road accident database. The new system, based on the purchase of smart devices, was implemented to make road accident relief by local police officers faster, more, accurate and complete. The new system also allowed for the inclusion of non-common road accident information, such as the accident pin-pointing through GPS coordinates.

Thanks to the monitoring centre it is also possible to automatically transfer all collected data to the national statistic office (ISTAT).

The development of the PSSU represents an innovation for Brescia and an outstanding result for Italy, where such planning tools are not commonly used. This tool is now used by

the municipal administration to prioritise road safety actions, install speed checks, intervene in pedestrian crosses and junctions, provide technical solutions on traffic lights and so on.

Another significant result achieved during the CIVITAS project was the updating of maps and the database on road accidents.

## Lessons learned

The main lesson learned from this activity is that effectively utilising innovative tools can really make the difference in preventing road accidents.

Brescia's experience could easily be replicated elsewhere. It is important to constructively involve all municipal departments and to carefully define the priority level given to the road safety issue. To build and implement a successful plan, it is also essential to use real time information from a dedicated monitoring centre.

It is also important to keep the road accident database updated and geo-referenced, making further updating actions easier.

For an efficient take-up, municipalities should take into consideration the following five elements, which contributed to the plan's success:





**Priority sharing:** It's very important to impress the level of priority toward road safety among policy makers, citizens and municipality departments. It is helpful to spread the awareness concerning the PSSU utility to better coordinate and deliver the road safety actions.

**Personnel trainings:** It is of fundamental importance to train personnel in charge of filling in the road accident database and to explain the importance of their activity, to both prevent errors and improve the quality of the road accident database.

**Data availability:** To lay out an effective PSSU, it is important to verify the availability of the required data at the city level, namely, the geo-referenced road accident data and the traffic data set.

**Steadily update the database:** The data updating phase is an important process which must be done frequently, in order to have a common framework to be taken as a reference.

**Users need definition:** As regards the monitoring centre, a clear definition of the local police needs in terms of service management is essential to develop targeted solutions.

### Upscaling and transferability

Both instruments developed during this measure implementation are transferrable to other administrations. Although they work better in synergy, they still have the ability to be used alone. Transferability depends on local and national regulations - instruments need to be fine tuned on the base of specific needs and laws.

### Transferability: Road Safety Monitoring Center

The results achieved during CIVITAS may be easily transferred to other administrations willing to adopt innovative instruments to reduce casualties and improve road safety. For a successful transfer, employees involved in the activities shall be adequately trained and they need to reach a very good understanding of the new system, including the possible increase of their work load.

### Transferability: PSSU

It is also possible to transfer the methodologies adopted during the Road Safety Plan definition.

Indicators for identifying road dangerousness need to be carefully chosen, since they are at the base of the effective functioning of the plan.

Based on the experience gained by Brescia's municipality during the implementation of this measure, we consider the use of the "road accident rate" as a highly effective indicator. The "road accident rate" (number of accidents/vehicle\*km) was developed according to the road functional classification: in particular, a road segment is considered dangerous if its accident rate is higher than the average value of the road class to which it belongs to.

Both instruments have a high upscaling potential; in the near future, it could be possible to add further functions to the monitoring system, and the safety plan might be further developed to improve road safety and guarantee an effective response in case of casualties.

### Budget and finances

Almost the entire budget was spent on personnel costs. A portion was spent on depreciation of hardware and software purchases. No further funding was provided.

### Key contacts

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