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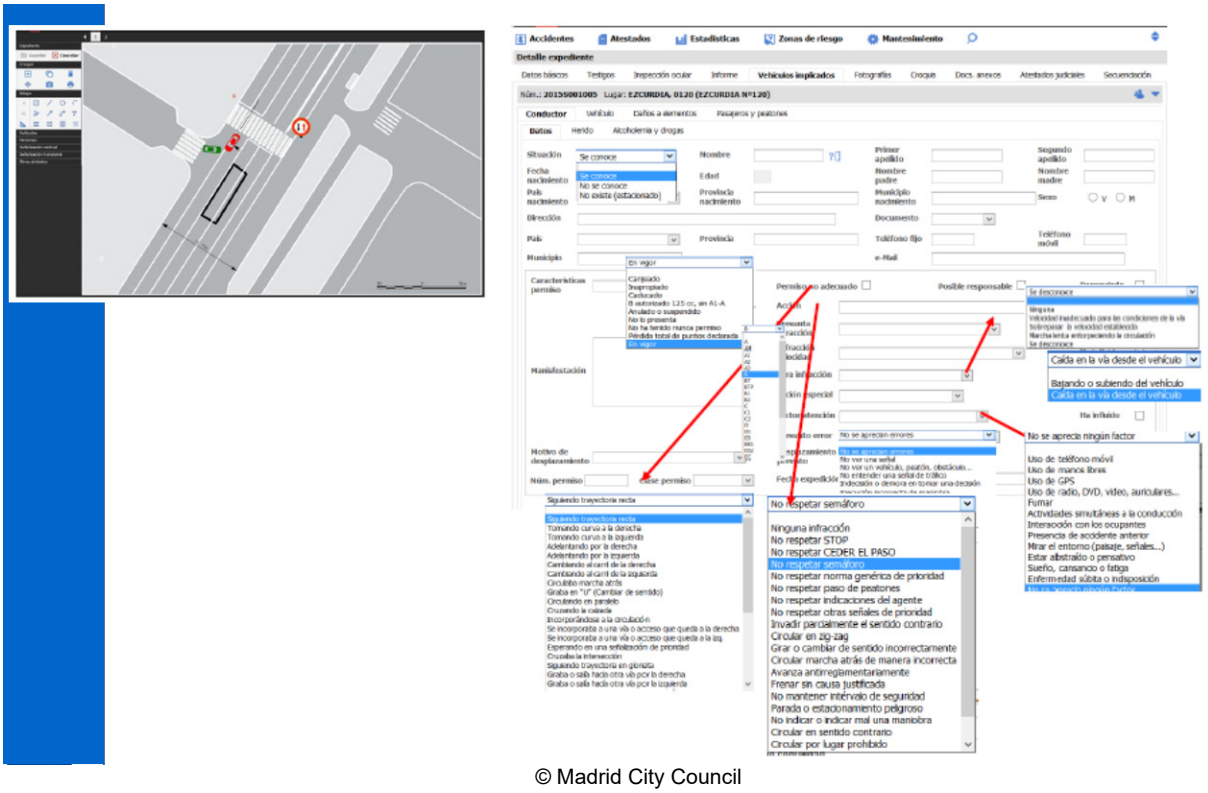
Innovative and participative approach to traffic safety

Summer 2019



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- GIS-based tool and public participation to boost road safety
- Traffic safety measures in SUMP
- Promoting sustainable mobility culture

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 690699.

Location: Madrid, Spain

Organisations involved: Madrid City Council

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What is the solution?

The main goal of the city of Madrid's Traffic Safety Plan (Plan de Seguridad Vial 2012-2020) is to reduce casualties caused by traffic by 50%, and the number of serious injuries by 30%, by 2020. Following the new mobility culture guidelines, within which the traditional 'traffic-vehicle' approach to traffic safety is complemented with wider mobility issues (such as street design and urban layouts, mixed uses and shared spaces, traffic calming and shared speeds, etc.), recognition that the promotion of a sustainable mobility model must be aligned with increased safety within the transport system. As a result, the approved Sustainable Urban Mobility Plan, SUMP (PMUS 2014), for the city of Madrid includes safety as one of its four strategic goals.

A comprehensive road safety study will be undertaken in the demonstration area, supported by the development of an application, based on Geographical Information Systems (GIS), for mapping road safety incidents. These will be categorized by type - for instance, involving cyclists, pedestrians etc., as well as high-risk locations - either real or perceived.

Citizens' perception of safety (subjective level of risk) will be calculated by tracking messages on social networks related to road safety in the two districts. This information will be complemented by the information obtained through the suggestions and complaints sent to the City Council website.

In order to identify the objective risks, an analysis of the accident rate will be carried out using the Police database, which contains information about the type of vehicle and mode of transport, the day of the week and the exact time of the accidents, and the sex and age of those involved.

This analysis will be combined with a spatial analysis, that will classify the sections of the road network into different levels based on their physical and functional characteristics. The study will also consider the severity of accidents (depending on the severity of the victims) and vulnerability (depending on the mode of transport involved).

As a result of the objective risk analysis, all information about the accidents will be available for each section, and the level of accident risk will be represented by a numerical indicator.

How does it work?

Under this measure, the city of Madrid will conduct a comprehensive road safety study in the demonstration area, complemented by the development of a GIS-based application to map road safety incidents, categorized by type (e.g. with cyclist involved, pedestrians, etc.), as well as high-risk locations (either real or perceived).

The road safety study will be composed of:

- Definition of traffic Safety Indicators.
- Collection and systematization of data linked to street safety through an application developed and based on GIS.
- Calculation of traffic safety indicators in sections of the street with homogeneous characteristics.
- Identification of points/sections of accident concentration.
- Identification of points/sections with traffic safety level (real and perceived) compromised.
- Identification of environments likely to perform actions to improve traffic safety.
- Definition of prioritization criteria and type of actions to be carried out.

Making use of the GIS-based tool, the municipality will take over some of the most relevant traffic safety measures included in its SUMP, whose implementation will be boosted by the CIVITAS ECCENTRIC project. New technologies

will be used to further promote traffic safety conditions by introducing tools that range from intelligent speed humps and smart signage to blind spot alerts, etc. In addition, public participation is highlighted as a determining success factor in the framework of the new mobility culture. Involvement of citizens and key stakeholders is needed to deliver a proper policy and planning approach, generate support from the general public and trigger new mobility behavior, which is also more sustainable.

Some of the activities carried out during the research and planning phase:

- Several meetings have been held with representatives from the relevant municipal services, aimed at defining the information transfer protocol to perform a diagnosis on road safety in the specified range. These have also served to help define the information that will feed into the future app.
- Meetings have been held with entities and representatives from other administrations with ICT programmes or applications with similar functionalities as those under development.
- Administrations that have software with similar functionalities have been identified, as have barriers to data integration.

Expected results

Long-term objectives for the implementation of this measure include the promotion of non-motorized mobility by providing a safer and more comfortable environment. Short term objectives include reducing the number of fatal accidents and serious injuries also reducing the perceived accident risk by all means of transport, with a focus on non-motorized ones.

Business model

The total budget foreseen for this measure is of €277,813 and it is entirely provided by the City of Madrid.

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