

GREEN MODES OF TRANSPORT AND TRAFFIC SAFETY - THE ZAGREB CASE, Stjepan Kelcec-Suhovec

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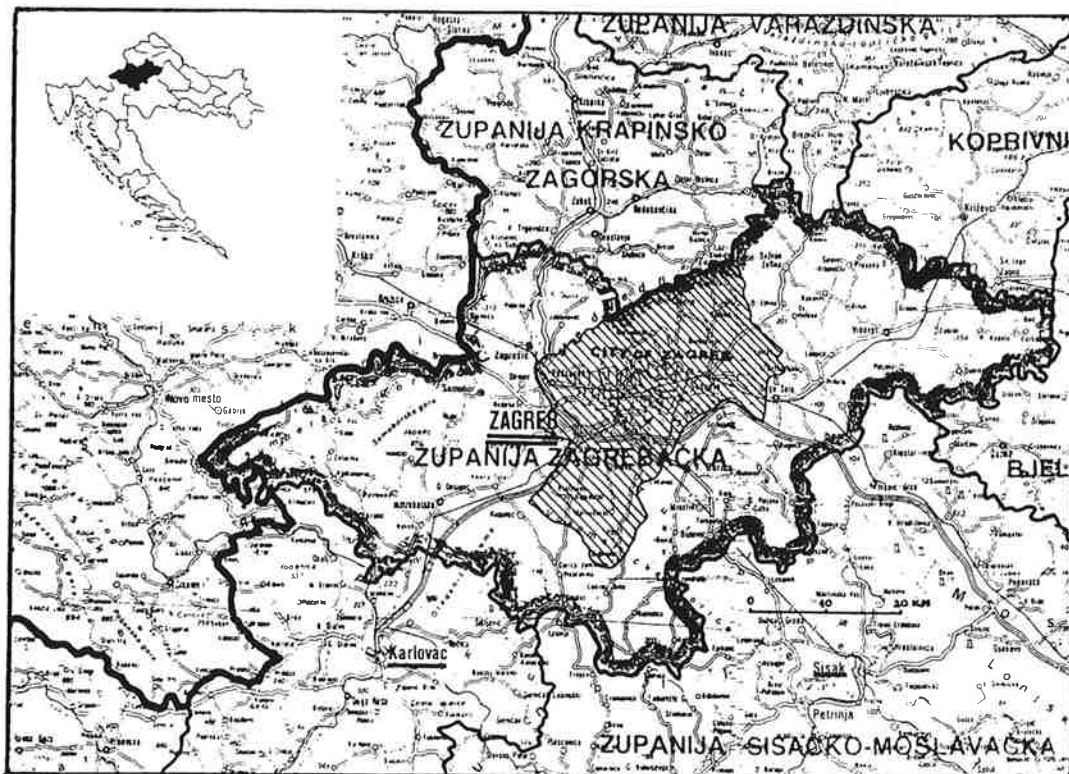
Zagreb

1. Introduction

1.1 Generally about Zagreb

Zagreb is the capital of Croatia with the population of approximately 800.000 inhabitants within administrative city borders /610 sq. km/. The Zagreb District comprises City of Zagreb plus surrounding towns and villages in and accounts approx. 1.100.000 inhabitants.

Figure 1: CROATIA, Zagreb District, City of Zagreb



There are in total 152.000 passenger cars and 177.000 motor vehicles in the city of Zagreb /statistical data from 1995/. The public transport is based on a network of tram and bus lines and one railway line. The tram network includes about 51 km of double tracks and 115 bus lines are 1 240 km long. Since 1991 existing railroad has been integrated into public transport and has shown good results.

Present tendency in transport is slightly increasing in number of the passenger cars and decreasing in the public transport use.

1.2 City-planning

Sustainable development in the city-planning has been the prevailing philosophy in European. In the area of transport it means insisting upon the use of the green modes of transport and on application of restraints in the car use. It means wider use of the public transport, walking on foot and cycling and lower quantity of the car traffic. This philosophy has been accepted in Zagreb, too.

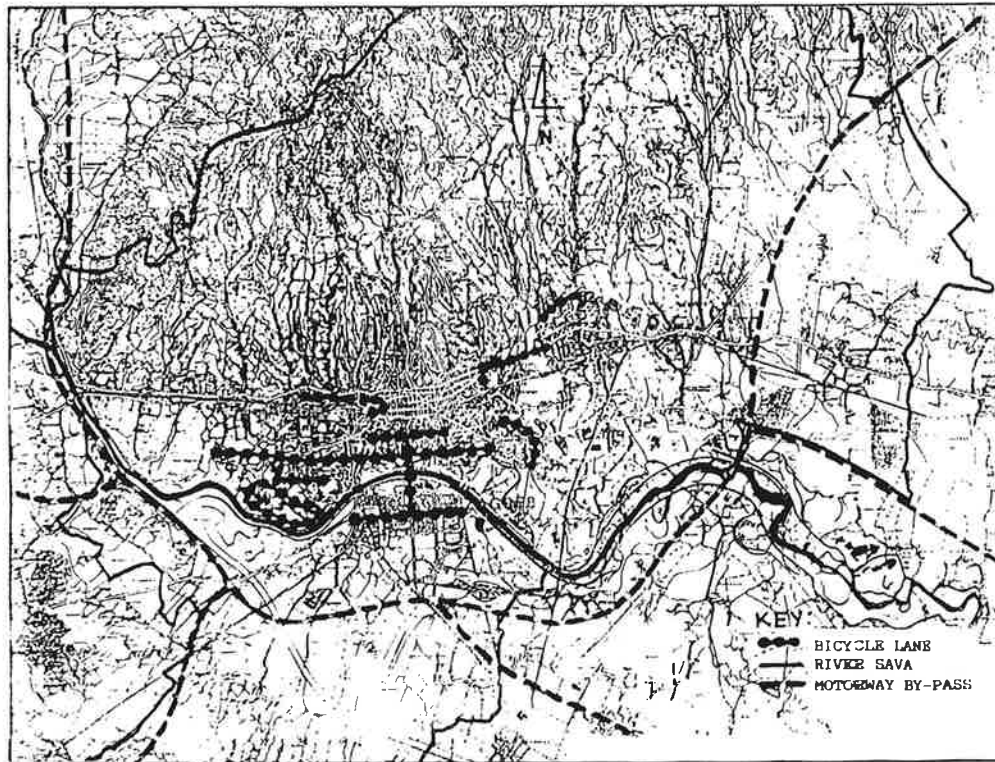
Among other useful results /lower energy consumption, lower level of air pollution, lower level of noise level, lower total costs .../ this philosophy is expected to **automatically result in a higher level of the traffic safety**.

Considering the public transport and restraints in the car use it should, without any doubt, contribute to improved traffic safety, but **we are suspicious about the role of the cycling in that process**. Could the cycling put things upside down?

2. Present situation with cycling in Zagreb

The cycling in the city of Zagreb cycling has been neglected for a long time. In the automobile age, that started in Zagreb in 1960s, the cycling was pushed out and the automobile oriented infrastructure was without a single bicycle way. The first serious steps in establishing the cycling network has been introduced only recently. It was mainly done by separating the pavements by yellow lines into pedestrian and cycling lanes. There are 34 km of streets with the bicycle lanes plus 7 km the bicycle lanes in the recreation zone of the Jarun Lake. These lanes are not connected among themselves, so the bicycling network for the moment is both, too short and inappropriately linked /fig 2/. The gaps in existing network are caused by a lack of adequate pavements that could be transformed into the bicycle lanes.

Figure 2: Present bicycle network in Zagreb



Lower City of Zagreb is very interesting area for cycling with a lot of destinations but it is strictly prohibited area for cyclists because of the safety reasons. Streets are occupied by the vehicles, parked cars and pedestrians and for the time being there is no surface that might be simply transformed into the cycling lanes. It seems necessary to do serious redesign of the street surfaces.

Existing data on the present participation of the cycling traffic within the daily town trips do not exist because there is no continuous monitoring of the situation in the traffic. According to our estimations the daily traveling by bikes is represented with a maximum of 1%-2% in total daily traveling during the dry and hot weather. The bicycle trips are rather based on leisure, and not for traveling from home to work.

3. The cycling in the Zagreb master city-plan

The Master city-plan is a basic document on long term development regarding the land use, infrastructure, transport and environment protection. It contains the goals and the basic strategic ways for achievement of the established goals. The City-Plan is developed in the graphic and textual forms.

In the area of transport, the goal is to provide safe and high quality of the transport system by insisting upon the use of the public transport and encouraging bicycling and walking. It automatically implies safety to come up by implementing this strategy plus reduction of the in motor vehicle traffic.

It has been officially anticipated that, by 2015, the number of the passenger cars will raise up to the level of 300 per 1.000 inhabitants.

Future transport network is presented in a graphic form at scale 1:10.000 and contains main roads, public transport routes and network of major cycling routes.

Cycling routes follow the main roads and the Sava River dams. The paragraph on cycling defines that the network would be completed according to circumstances.

The Plan does not contain a forecast of how important the role of cycling should exactly be in the future. According to our vision, daily travelings by bicycle might reach 10%-15% in a total number of travelings, if an appropriate network would be built.

More detailed study on the transport has not been undertaken yet, there were only some general proposals for the cycling, that resulted in the present cycle network.

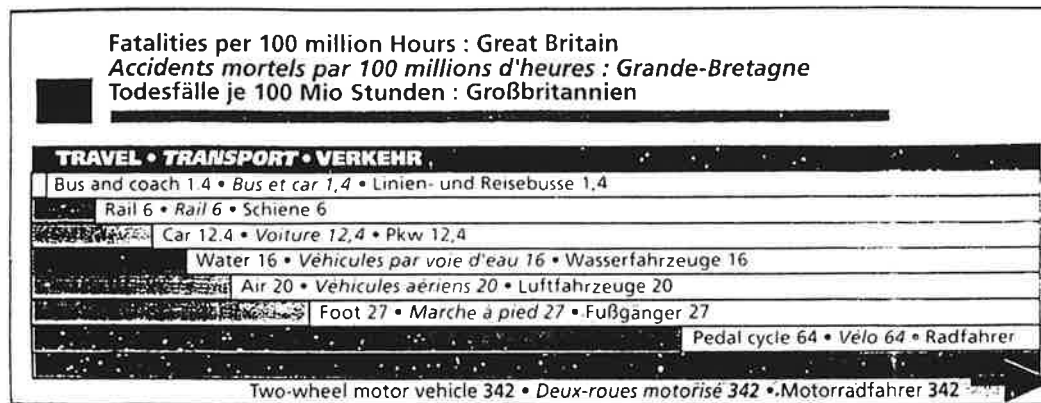
4. Road safety and what could go wrong related to cycling

There is an average of 800 killed people in road accidents every year in Croatia. Compared to the less than 5 million inhabitants and approx. 830.000 motor vehicles, it shows a high level of risk for people participating in the road transport.

According to the police report, in 1995 it was registered a number of 13.401 road accidents with 3.172 injured persons and 90 fatalities in the city of Zagreb. The cyclists were represented in these accidents with 58 injured and 3 fatalities/77 accidents involving the cyclists/. Compared to the total number of injured people and fatalities it shows 1,8% injured and 3,3% fatalities.

The cycling is very risky way of transport. Expressed by fatalities per 100 million hours of traveling, the risk for cycling is 64, bus and coach traveling 1,4, rail 6 and car 12,4./Fig 3 according Ref. 2/ So, in our circumstances, as in a developing country with a low level of the traffic safety in general, I fear that a rapid increase in number of fatalities in cycling and the total number of killed people could reach a higher level even without the cycling.

Figure 3: The evaluation of transport safety



I believe in efficiency of a sustainable development and green modes of transport but I wonder if the road safety related to bicycling might be a weak point in this strategy.

The basic question is whether this fear is justified and real or I am too pessimistic? I would like to share my dilemmas with experts dealing with the road safety and, if this fear is real, what could be done in advance, besides the monitoring process?

Note: The comment in this paper is not official attitude of the Institution where the author is employed

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