

Roads to Respect 2010, Student Final Report



Name: Maciej Geroch
University: Cracow University of Technology
e-mail: maciej.geroch@gmail.com
Telephone: (+48) 662 291 139

1-Definition of the High risk site

I chose site of high risk which is located in my family town Nowy Sacz (Poland). Krakowska Street is a straight section of national road number 28 which leads traffic into and out of town. Road has only two lanes (one in each direction) and it is equipped with a sidewalk on both sides.

Main problem of this road section is too easy access from private and commercial properties. On a distance of 750 m there are 27 private and commercial drive-ins. Such access makes accumulating points of conflict. Krakowska Street is a straight section of a road. It makes the drivers often exceed the speed. Increased speed together with large number of drive-ins gives dangerous combination. High traffic volume makes it difficult to diverge and to merge with a main flow.



Presence of intersections, petrol station and entries to estates which ensure service of an area adjacent to the road, makes the need to turn left. This maneuver requires special attention of road designers because of its conflictual nature. Careless execution this kind of maneuvers may lead to dangerous collisions. It is very important to create safe areas of expectation for vehicles which are waiting for the possibility of turning.

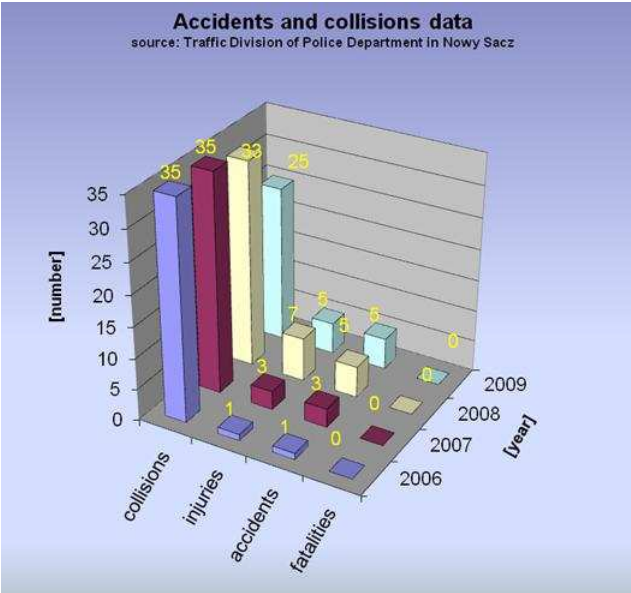


Another problem of my high risk site is lack of separation different road users. Cyclists are forced to drive on one common lane with heavy vehicles. Krakowska Street carries heavy transit traffic and will continue to carry it until the town would not have a bypass.

The plan B is to focus on a particular spot on the streets of Krakow and not the entire section. I've chosen spot in front of petrol station. There is no separated lane for drivers who want to get to petrol station from Krakowska Street. Vehicles which are waiting for a opportune time to diverge are blocking all flow behind them. Furthermore, drivers who are leaving petrol station, have limited visibility by vehicles stopped on a parking lane situated along Krakowska street. Lack of visibility for this kind of maneuvers is a cause of serious front-side type collisions.



To confirm the fact that the place chosen by me is dangerous, I asked Traffic Division of Police Department about accident data. Below is a graphic summary of accident data.



2- Project proposal to treat the selected high risk site

Plan A

Proposal of my high risk site treatment includes changing the structure of street section. My idea is to construct additional lane in the middle of a roadway which would be common for vehicles from both directions. This solution would help to create an expectation area where drivers could wait for an appropriate moment for exit maneuver. It would make possible to take merge maneuver in two steps.



The middle lane part of the road section is good for use on roads with relatively heavy traffic, one-lane cross, leading through the town, as a way of calming traffic. This lane is located between the primary traffic lanes designed for the opposite directions. It has a surface of concrete blocks, can be separated from other with a lanes lying curb. A typical width is 2.5 to 3.0m.

The use of cross roads with the middle lane paved to keep the traffic flow when passing through the town, by enabling secure overtaking of slow moving vehicles and cyclists, and by using it as a place of waiting, the opportunity to maneuver a left turn for vehicles wishing to return to the property located the road (these vehicles do not block the traffic on basic lane). The middle lane is separated by a refugee islands, which on the one hand, it facilitates safely road crossing by pedestrians on the other hand makes it difficult to use this lane to overtake. The lane is interrupted at intersections.

Use the middle lane allows to narrow basic lanes, without compromising security. Narrowing it affects the speed limit of vehicles, which is one of the objectives of traffic calming.

The middle lane paved differs from dedicated left-turn lanes fact that can be used by vehicles moving in both directions. It is a disadvantage, because potentially there may be collisions when two vehicles moving in opposite directions at the same time they want to enter the zone.

The middle paved lane is rarely used in Polish so drivers have difficulty in the proper use of it. The most common mistakes include: parking in this lane on the other hand, treating it as an island impassable.



Structure of the middle lane should make it distinctive. It can be made of concrete blocks or colored asphalt. It is allowed to raise middle lane in leading curbs or to make it on basic lanes level.

Plan B

Given the costliness and effort to 'Plan A' implementation I have elaborated Plan B. Actions involve the elimination of the stop lane in front of petrol station. It can be done by placing a road 'No parking or stopping' sign. The resulting free space may be used to creation of a separated left-turn lane.



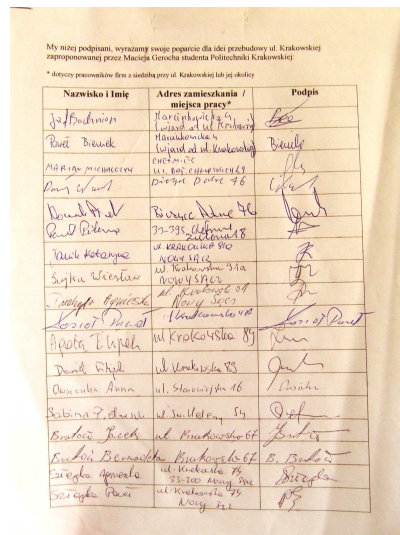
That solution would help to keep the traffic flow because drivers who want to get to petrol station would not block main stream on basic lane. To reduce pedestrian traffic in this place I propose installation of barriers. It is necessary to make new markings on a pavement. It would be advisable to place an additional sign on the organization traffic. Cost of one sign prohibiting stopping and one sign of traffic organization is about 77 euro. Cost of marking depends of it's area size. One segment of barrier costs about 130 euro and it will be needed 45 of them.

Element	Number	Total Cost (EUR)
Vertical sign	2	48,00
Horizontal marking	~ 25 m ²	88,50
Barriers	45	4128,50
	SUM	4265

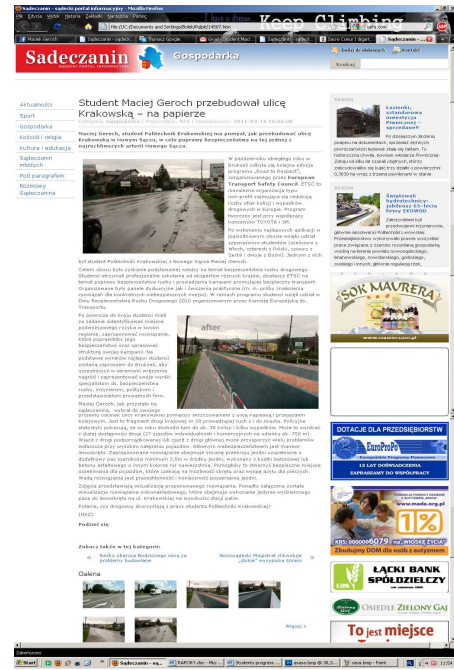
3- Campaign to get the high risk site treated

At the beginning of my campaign I contacted with my professor Mr Marian Tracz, who helped me to develop my treatment idea. Prof. Tracz also comes from Nowy Sacz and he exactly knows problems associated with road safety in my town. Professor felt that the section of road is a place of collisions and he was right. I got to the accident data by Traffic Division of Police Department in Nowy Sacz. It was evidence to support the contention that there is a danger on the Krakowska Street. Annually there comes to about 30 collisions and several accidents with casualties.

Next step was to create some visualizations which I wanted to use in my information activities. I decided to inform stakeholders about my project and tried to get their support. I visited local residents and employees of the workplace located along Krakowska Street. Attitude of the people was different. Some of them gave me a full support and expressed their satisfaction that someone wants to ensure road safety in their district. On the other hand there was one store owner who did not like my treatment proposal because prospective street widening would be a reason to eliminate a stop lane in front of his store. Some of locals gave me their support but they were very pessimistic about implementation of my treatment. I've collected over the 50 support signatures of stakeholders from the buildings nearest to the street.



After mails to several editors I managed to post the article in the local magazine. So far it appeared in the online edition but has aroused interest. Maybe it will be posted in paper edition. Website has more than 900 check ins. There appeared some questions and concerns in comments below the article on witch I tried to answer. I hope I was able to remind people how dangerous the streets of our city are and how to treat them. There are many streets in the Nowy Sacz with similar characteristics as the Krakowska street. I wish that my treatment idea was helpful in any planned renovation or remodeling.

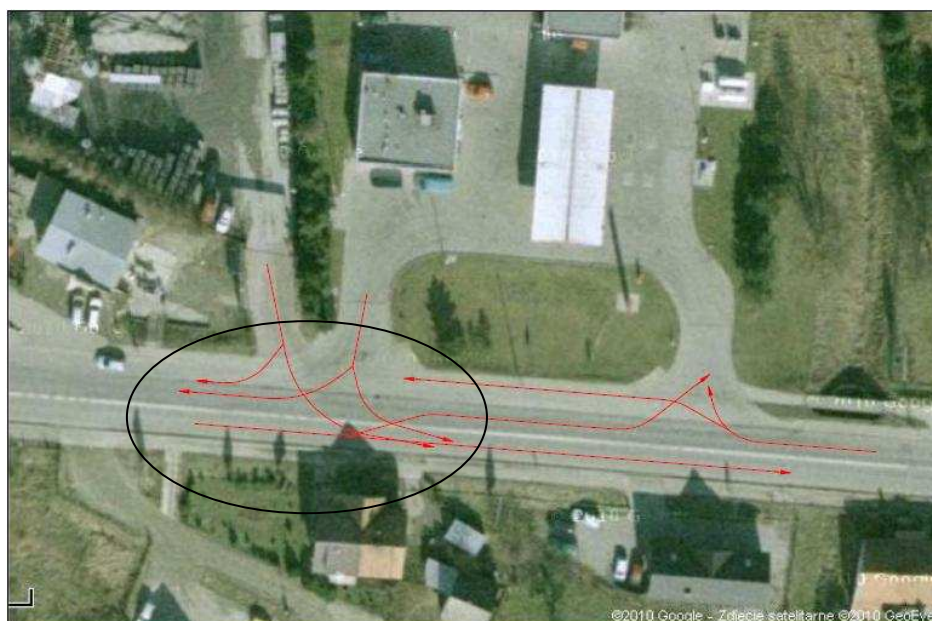


In March I have presented my project to Director of Urban Roads Administration Mr. Grzegorz Mirek. Director didn't welcome my project. He claimed that it is too expensive solution for financial opportunities of the town. Necessity of street widening intensifies cost of high risk site treatment. Along with expansion of road cross-section there is a need to move telecommunication cables, gas and water pipelines. Moreover there appeared problems with increased width of the roadway. There is a concern that it will be necessary to seize a private property to carry out works. Reducing the width of basic traffic lanes to 3.5m and the width of sidewalks to 2m or even 1.5m may be insufficient. It may cause many of objection and protests. Director Mirek pointed also on a problem of proper use of the middle lane solution. It is a rare solution in Poland so people do not fully know how to use it. I was aware of the costliness of this solution, however, I considered it appropriate to present my proposal for the road administration. In my opinion, we should treat this kind of places in this way and we need to familiarize people with the latest in the field of road safety.



Director of Urban Road Administration - Mr. Grzegorz Mirek

I was hoping that at least the plan B will be approved by the director Mirek. Unfortunately he had also objections to my proposal. In his opinion there would be problem with designing island marking which should cover separated left-turn lane. This island should be passable because there is need to ensure access to workplaces and concrete factory next to petrol station. Main disadvantage of a situation is large number of commercial drive-ins which interfere clear organization of traffic. Director also don't want to bend directions of vehicles which are moving straight on Krakowska street and don't want to enforce drivers to slow down what is really surprising attitude for me. Until priority for designers will be comfort of drivers and not their safety the situation on Polish roads will not improve.



4-Achievements of the project

Unfortunately authorities didn't give approval to my project. Administration don't want to implement my solution. Town has no budget for such a works as I propose in plan A. Administration has also objections to my plan B proposal so there are still no results of my campaign. Authorities claims that high risk site I have chosen is very problematic place and my solution is not so good to solve these problems. They pointed out that on Krakowska Street is not enough space to implement such solution as my plan A. Moreover they told me that presence of heavy vehicles excludes my plan B because of possibility of limiting maneuver taking by those vehicles.

While I was campaigning Urban Road Administration has installed road sign which forbids stopping in front of petrol station. I don't think this administration action was related with my campaign so it can not be considered as my success.

I have only made an information campaign to focus attention of local residents and local authorities for some road safety problems. My article in internet edition of local newspaper had almost 1300 views. That shows how important and sensitive topic I have touched. Talks with stakeholders shown me scale of problem and dissatisfaction of the people with the current state of road safety in my high risk site. Simultaneously residents are full of concern. Plan A offered by me aroused anxiety because it will something new. Residents were afraid that this solution may access to their properties, shops and it may limit number of customers.

Director Mirek offered me the opportunity to design a cyclist path in other place and assured of his support. The project proposed by Mr. Mirek was also to extensive to reach some result before the end of R2R program. That also would be a bigger project than it is recommended to treat so I gave up on its implementation.