SCHEDULES OF TRAFFIC CALMING IN THE CZECH REPUBLIC

Zdeněk Hrubý, Eva Simonová

CDV – Transport Research Centre
Czech Republic
e-mail: hruby@cdv.cz or simonova@cdv.cz

REDESIGN OF TROUGHPASS OF HIGHWAY I/17 IN HERMANUV MESTEC

Hermanuv Mestec is a typical example of a Czech small town. It is situated about 110 kilometres eastern from Prague, in region Pardubice, district Chrudim. The number of its inhabitants is about 5000. It is very old town founded in the fourteenth century, with a lot of historical sights, for example the Jewish synagogue, the castle and its park in English style and the church of St. Bartholomew from 18 century. The nature in the surrounding of the town is also very beautiful: small lakes, cycling lines, forest park with massive oak trees...The recreation centre Konopac, the former Ella's spa on the Gold stream takes up Hermanuv Mestec in the south-west. The town is situated on the very important regional road I/17 which connects Chrudim, Caslav and Kutna hora. This fact is fundamental for development of the town. But this road also brings a lot of problems for the inhabitants, because it is going right through the town without no protection of local people. The width of the road between the kerbs has been 12,5 meters, there have been the unprotected and very long zebra crossings and a lot of incompetent parking places on this road. The unnecessary large bus station has been also situated in the middle of the town on this road. The traffic intensity has not been so big problem, the main problems have been the speed and the accidents. The town Hermanuv mestec has tried to solve this problem by buying a portable (mobile) radar used for speed measurement. It was bought by the town in 2001. This radar is used at 4 places on the road I/17 and has a preventive effect by displaying the driver's speed. In addition to this, the reconstruction of the through pass has been suggested.

<table>
<thead>
<tr>
<th>Year</th>
<th>the total number</th>
<th>fatalities</th>
<th>serious injuries</th>
<th>slight injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>22</td>
<td>1</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>1998</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1999</td>
<td>16</td>
<td>0</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>2000</td>
<td>14</td>
<td>1</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>2001</td>
<td>14</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 1 – the accident frequency in the town of Hermanuv Mestec

After analysis of the traffic accident in year 2001, we know that 6 of them were caused by cars hitting other cars from behind and in 3 of them the pedestrians were involved. Traffic accidents are spread on all length of the solving part of the road. Insignificant number of
accidents have happened during the parking process. The public opinion was very exited by the accident, when a little girl was hit by the car on the zebra crossing (picture 1).

The following steps were suggested to solve the unsuitable situation (picture 2):

- to make the reduced safety audit
- to recommend measures for enhancement safety of all road users
  - elimination of the incompetent parking places
  - optimal position and length of the zebra crossing
  - the width optimisation
  - implementation of the entrance island to reduce speed
  - narrowing of the traffic line to 3,25m
- to solve the cycling transport problems - guidance of the cyclists
- to guide the traffic by using dividing islands

You can see the plan of the devicing adaptation on the picture 3.

- protected zebra crossings
- narrowing lane width
- special lane for left-turn
- dividing islands
- adaptation of the cross section design
- adaptation of the existing radiuses
- adaptation of the nearby area
- elimination of the incompetent parking places
- space reducing of the bus station
- new parking places instead of one of the bus platform

The other problem was the speed reduction on the entrances to the town, where the road I/17 is falling into the town without any speed reduction. A few serious accidents have happened on these entrances. To solve this problem, the speed reduction entrance islands have been suggested (picture 4).

This project had no problem to find a finance resources in adequate range. The cycling transport was successfully guided to the roads parallel to the throughpass. This solution wasn’t very accepted from the police, because of there is a mixed traffic of cars and cyclists on the same traffic line. The designer had no will to respect all principles of designing the safe roads.

The road I/17 was reconstructed in 2002 in the length of 20 kilometres. The investment of this reconstruction was guaranteed by project ISPA. ISPA project is determined for the EU candidate countries. Unfortunately the entrance speed reduction island was not realised from Caslav direction.
Generally I can say that the Czech rep. has not enough financial resources to construct the bypasses of the towns and cities.

*Picture 1 – The zebra crossing, where the girl has been killed., The Mir square, road I/17*

*Picture 2 – The plan of the existing situation, The Mir square, road I/17*
Picture 3 – The plan of the suggested adaptation

Picture 4 – The plan of the suggested entrance island
SMALL ROUNDBOOUT IN LITOMYSL WITH OVER-DIMENSIONAL LOAD TRANSPORTATION

I would like to describe the adaptation of the intersection to the roundabout in this article. The intersection is situated in Litomysl, Czech Republic. Three roads are connected there: the second class roads number 359 and 360 and the third class road number 3591. The oversized vehicles are using this routes, so the reconstruction must be adapted to their movements. The main reasons to the adaptation were: insufficient view for riders, long waiting times and large number of dangerous situations and collision points because of the unclear definition of the whole intersection area, bad positions of zebra crossings. Originally the zebra crossings were made too near to the intersection or too far from the intersection. The crossings were situated in places, where no need of crossing was in both cases.

You can see the first design for arrangement of the original intersection on picture 6. This design generally isn't very good solution. The definition of single areas is not intelligible. The better solution is showed on picture 7. Here you see that areas for cars are separated from areas for pedestrians. All islands are made from vegetative shaped. They make crossing possible in the case that there is a need. The new crossings were made on all shoulders during the reconstruction, 5-10m from the edge of the intersection. The crossing is now more comfortable, logical and safe. There is also a possibility of using these islands to be ride over by the oversize vehicles. Another cars use the bitumen line. Roundabout is not so stressful for the riders. The same priority on all entrances can solve the long waiting time - this is the case of this roundabout. Green areas support the perception of life and stress the speed limit in the village. The cars are guided by dividing islands, the intersection area is now clear and there is no possibility of chaotic movements in this case. This clear definition of transport area is also important for riders psychology. The number of collision points is reduced and it means better safety situation.

PARAMETERS:

- diameter is 24,5 meters
- diameter of island is 8,0 meters
- width of annuls is 3,0 meters
- width of traffic lane on circle is 5,24 meters
- width of traffic lanes is 3,75-4,50 meters
Picture 5 – Chaotic movements and unclear definition of the intersection area

Picture 6 – the first design of the reconstruction
Picture 7 – better solution