

CZECH TECHNICAL UNIVERSITY IN PRAGUE

Faculty of transportation sciences

Title of project

STUDY EDITS FOR BETTER TRANSPORT IN THE CENTRE OF NÁCHOD

2006

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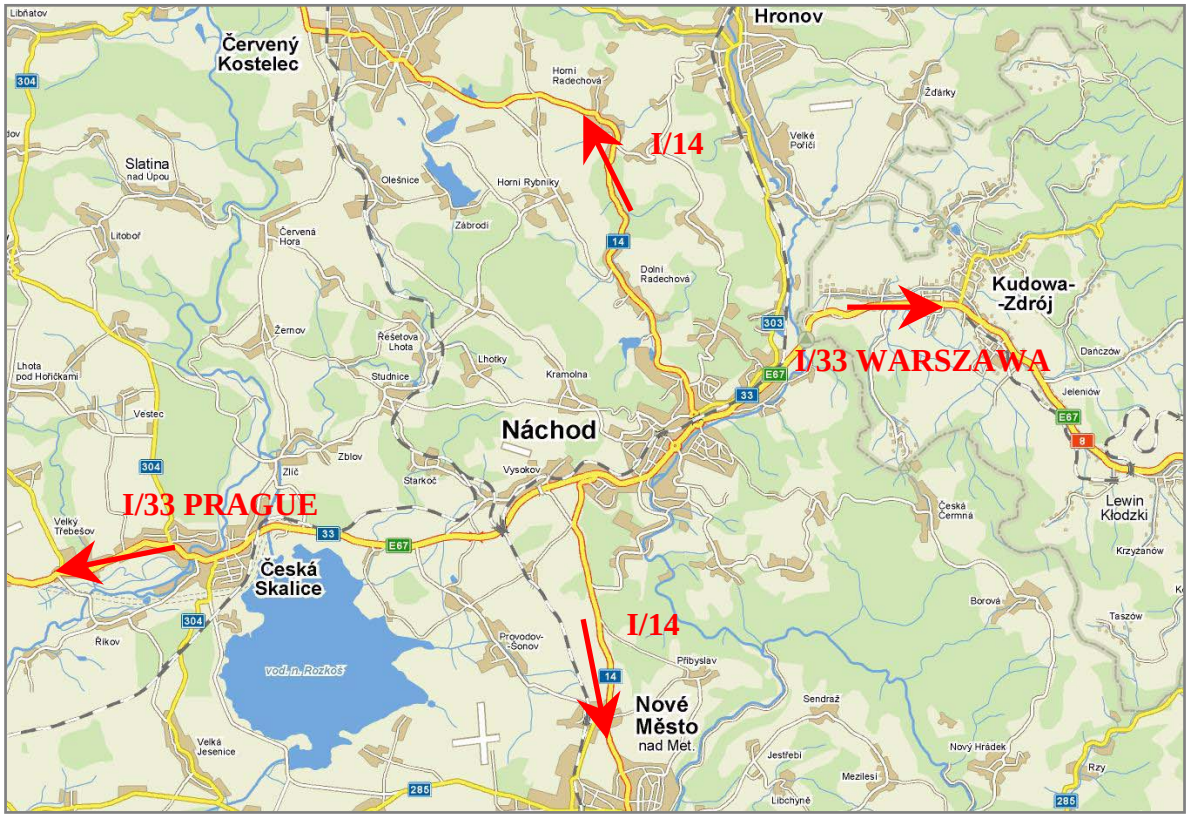
Basic information about town Náchod

Náchod is situated in east part of Czech Republic near border with Poland. The number of inhabitants is about 22 000. Náchod is know as town with rich history and culture. Through the town passes the river Metuje.



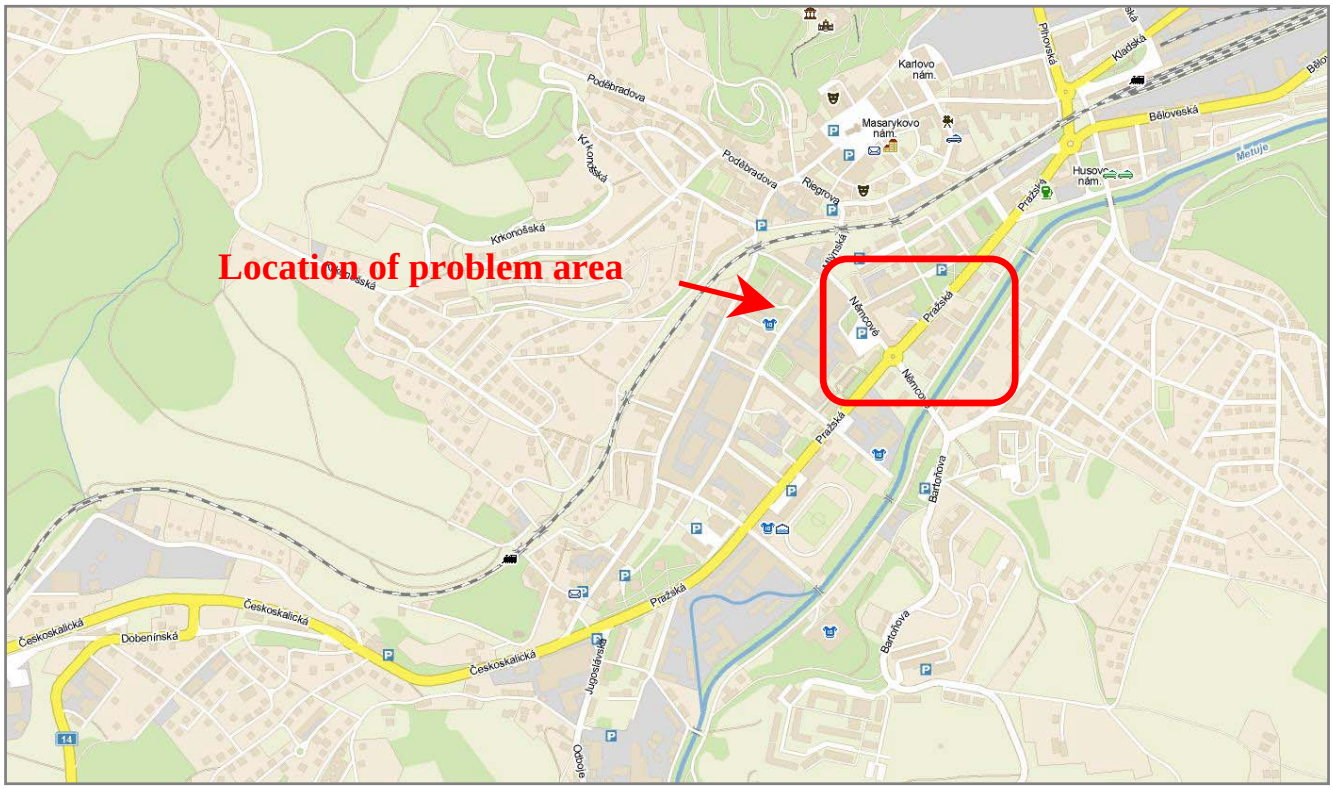
Basic traffic information

Through the town leads first class road I/33. This road begins in capital city Prague and cotinues to the Warszawa in Poland as E67. The first class road I/14 is conected to I/33 out of the town centre. Railway has only regional value and serves as conection to neighbour towns. The railway station is situated on the edge of the town centre. Near the railway station is main bus station. There is no periodic urban mass transportation in the town.



Traffic problems in Náchod

- high intensity of cars on road I/33
- high number of heavy trucks
- enormous width of road profile
- traffic jams – several kilometres long que of cars in the centre of the city)
- dangerous pedestrian crossing near the bus stops on road I/33
- so wide lane on roundabout – high speed of cars on roundabout's lane

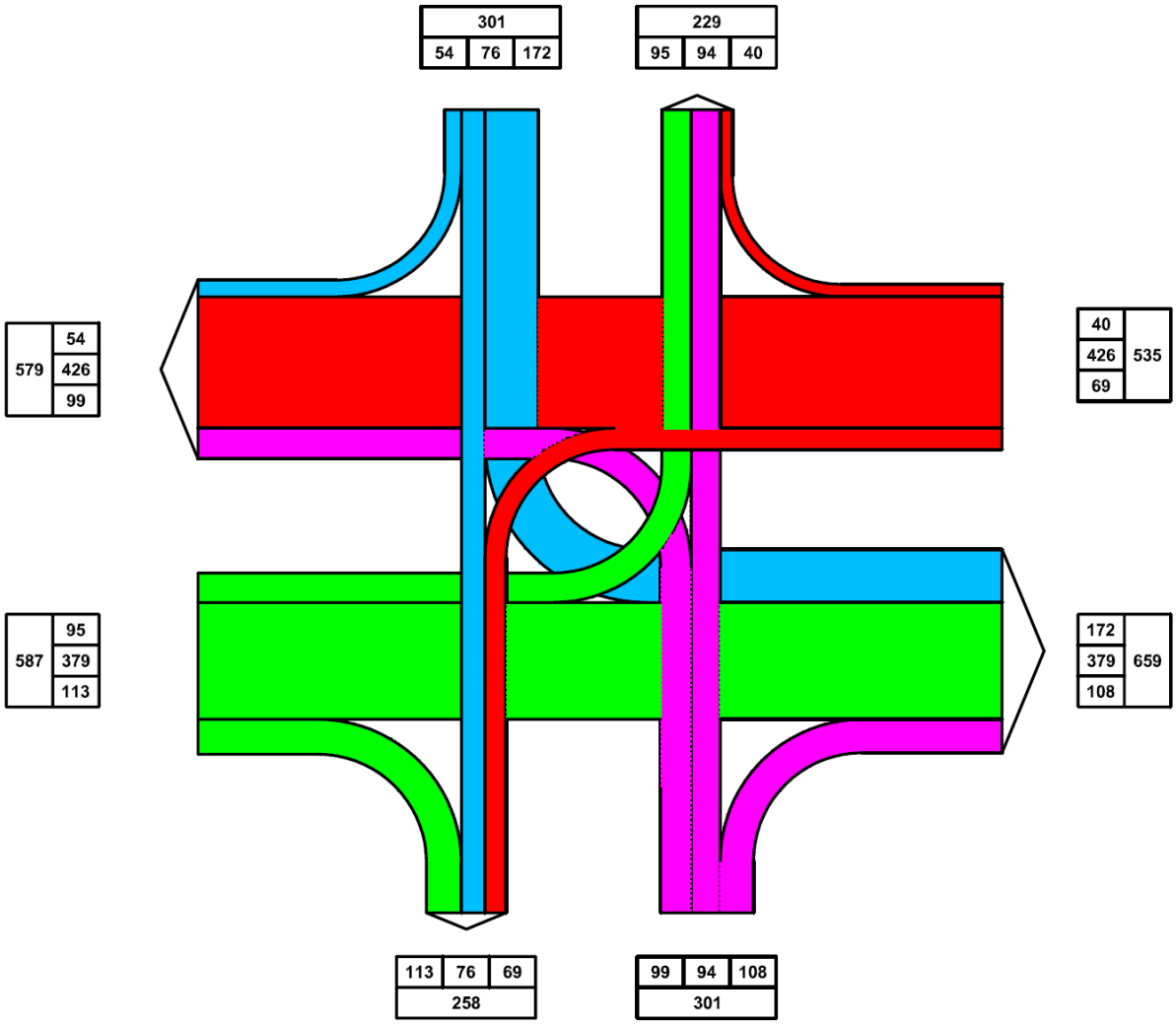


Traffic data on road I/33

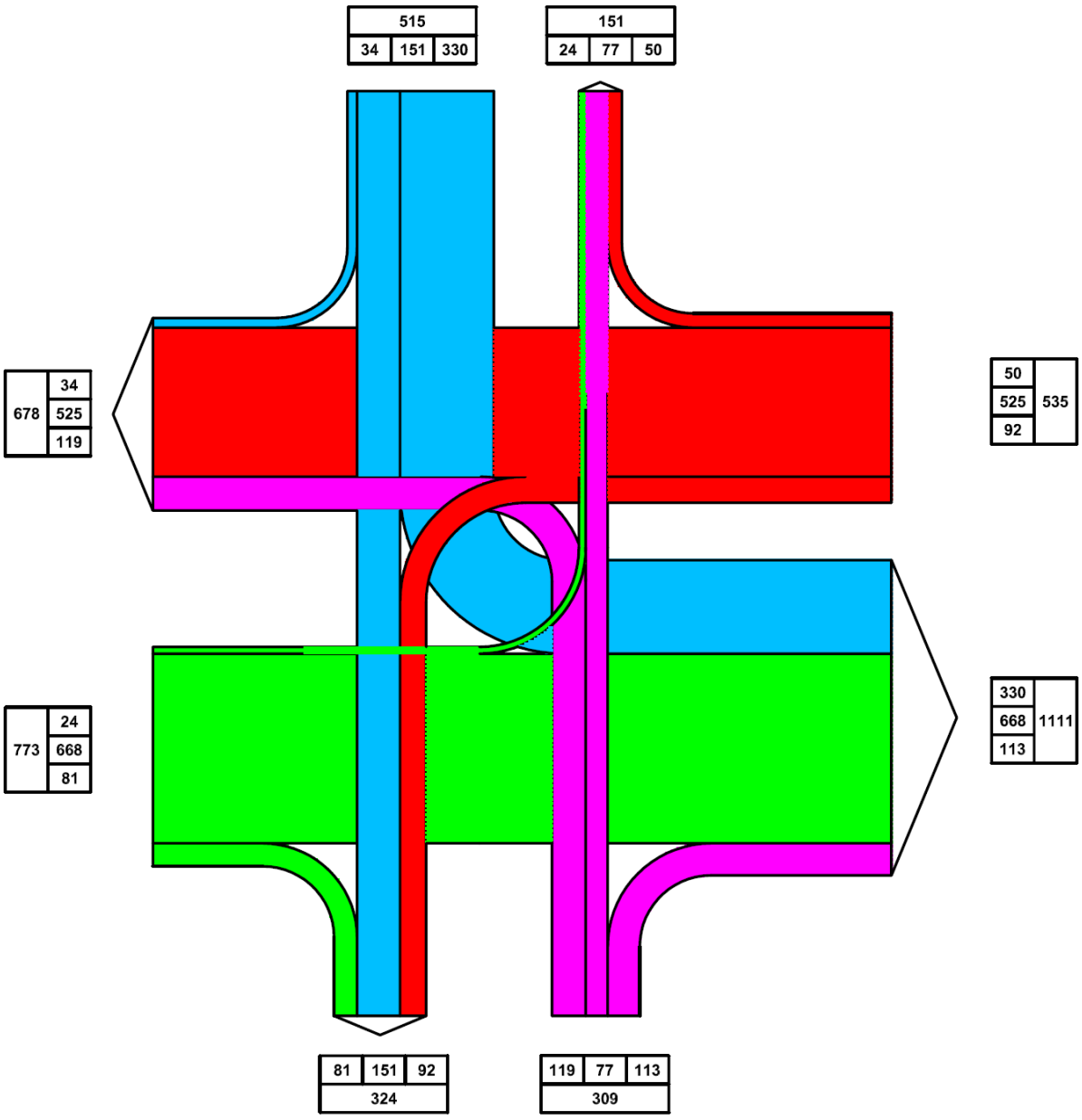
There are numbers of vehicles per 24 hours. These numbers came from national traffic census.

	1995	2000
Heavy trucks	2621	3252
Cars	12015	17899
Motorcycles	249	269
Total	**14885**	**21420**

I made my own traffic census on solved roundabout. It took place between 6:30 – 7:30 and 15:00 – 16:00. The results was compiled to transparent graphs.



This graph shows total numbers of vehicles from morning rush hour.

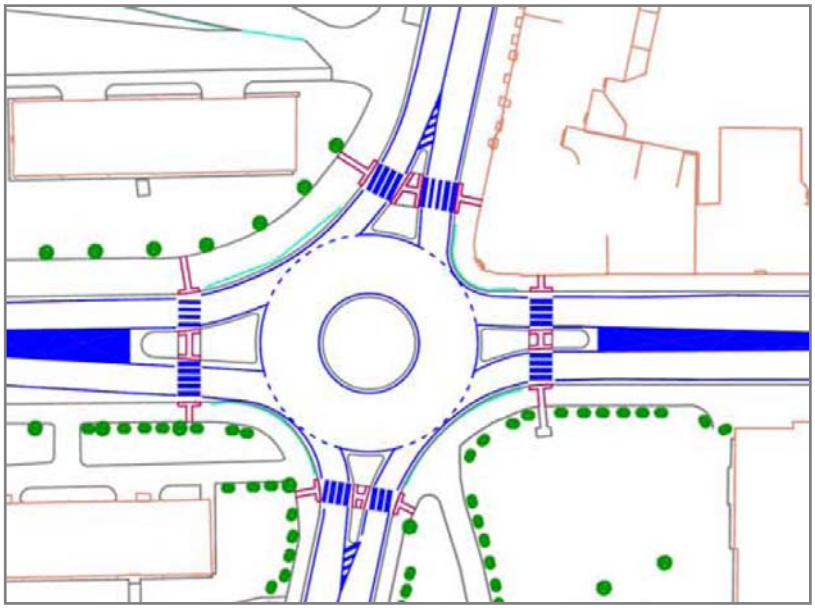


This graph shows total numbers of vehicles from afternoon rush hour.

Technical data about solved roundabout

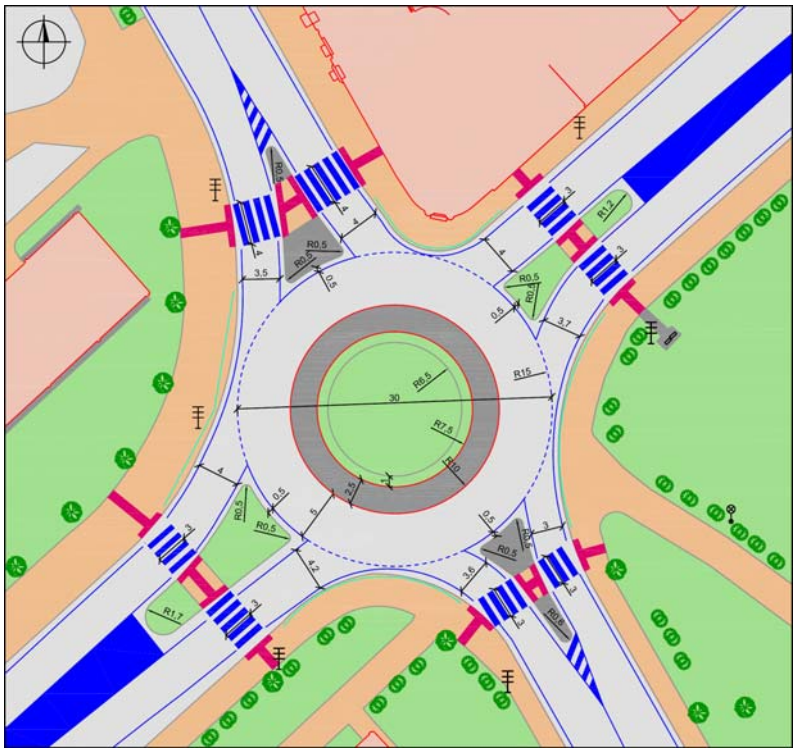
Names of streets	Pražská x Boženy Němcové			
Admissible speed [km/h]	50			
Number of branch	1	2	3	4
Number of lanes on entry	1	1	1	1
Number of lanes on exit	1	1	1	1
Width of lanes				
- entry [m]	5,5	4	5	4
- exit [m]	5	4,5	5	4,5
Width of zebra crossings [m]	3	3	3	4
Length of zebra crossings [m]	14	10	11	12
Outer diameter of roundabout [m]	30			
Width of roundabout's lane [m]	8,5			
Diameter of centre island [m]	13			



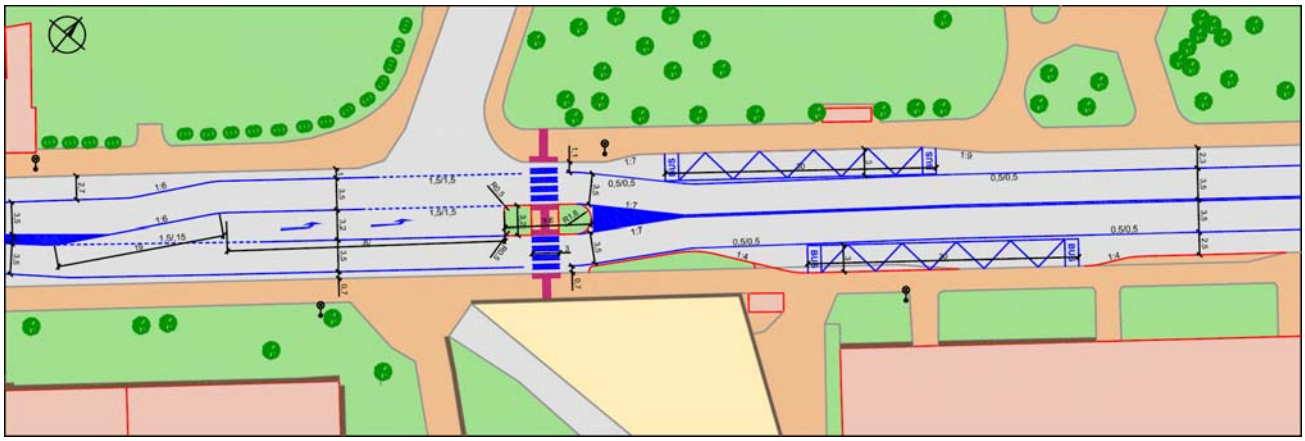


My suggested solution

Version A

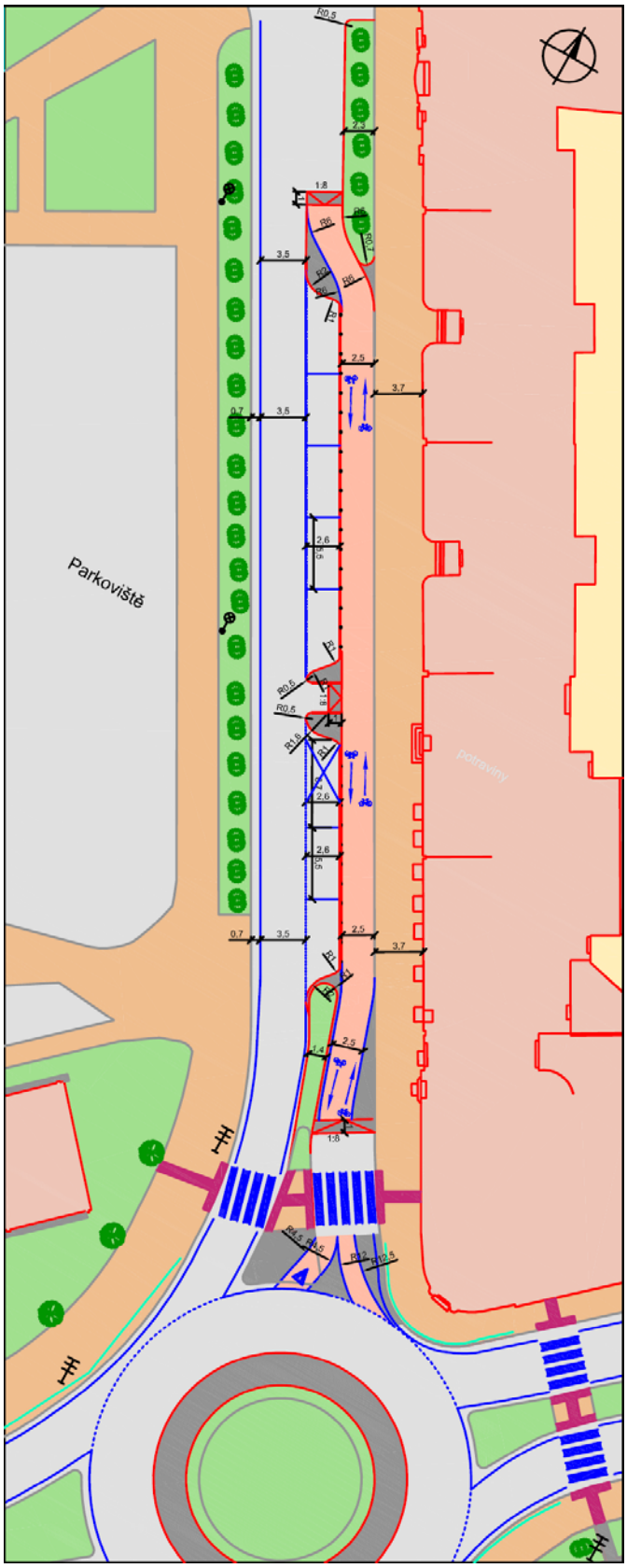


I projected to build up the paving ring around central island. This ring is one meter wide. This solution reduce the wide of roundabaut's lane and should slow down the speed of ride throw the roundabout.

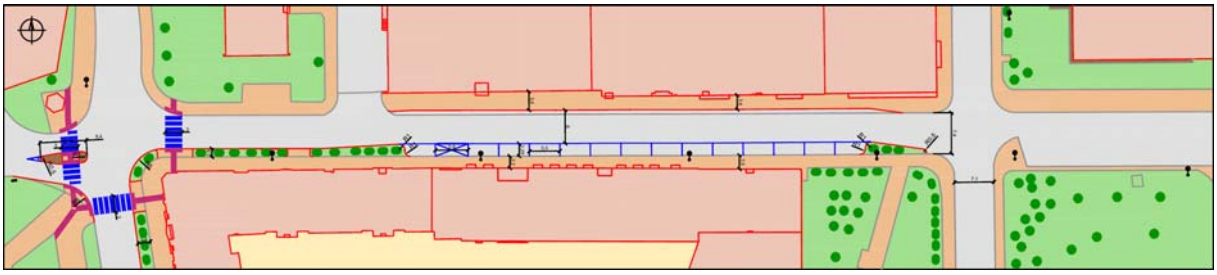


In the street Pražská I suggested to move position of bus stop and it allowed to remove the zebra crossing in front of bus stops. It also allowed to project traffic island. This solution is used in version B too.

Version B



This solution contains closure exit from roundabout to Němcové street. It should ensure higher permeability of the roundabout. The enclosured lane was used for build up the new cycle way and several parking ranks.



In present situation there is no road marking for parking. In my solution I projected one parking lane and some green areas. In intersection I tried to reduce the length zebra crossings so much as possible. At one branch I had to project traffic island for protection of pedestrians.

Vision to the future

People from town hall thinking about realization of road by-pass around the town. But there are many problems with money and also with the EIA. In the case that these all problems will be solved, by-pass will be realized in 2013.

List of used literature

[1] Internetové mapy Seznam (www.mapy.cz)

[2] Územní plán města Náchod

[3] Internetové stránky ŘSD (www.rsd.cz)

[4] Internetový vyhledávač www.google.com

[5] projekt BESIDIDO Výzkum zvyšování bezpečnosti na pozemních komunikacích, CDV Brno, 2001-2005

[6] Malina, T.: TP 135 Projektování okružních křižovatek na silnicích a místních komunikacích, V-Projekt s.r.o Ostrava, MDS ČR, 2000

[7] TP 83 Odvodnění pozemních komunikací, Pragoprojekt Praha, 1997

[8] ČSN 736102 Projektování křižovatek na silničních komunikacích

[9] ČSN 360410 Osvětlení místních komunikací

[10] TP 65 Zásady pro dopravní značení na pozemních komunikacích, CDV Brno, 2002

[11] TP 100 Zásady pro orientační dopravní značení na pozemních komunikacích, CDV Brno, 1999

[12] TP 133 Zásady pro vodorovné dopravní značení na pozemních komunikacích, CDV Brno, 2001

[13] Kotas, P.: Dopraví systémy a stavby, ČVUT Praha, 2002

[14] Kočárková, D.; Slabý, P.; Kocourek, J.; Jacura, M.: Základy dopravního inženýrství, ČVUT Praha, 2004