

F I N A L R E P O R T

**MEPS 2010 - Wiener Neustadt**

Group 1 – Water tower

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# 1 Introduction



Figure 1 Location of the planning area

**Error! Reference source not found.** shows the location of the planning area. The water tower is located at Südtiroler Platz, which is south-east of the centre of the city. From the centre the spot is reachable within walking distance. In the following report we will describe the planning area with the occurred problems for the traffic users in section 2. Section 3 presents the planning ideas for redesigning the area around the water tower, based on the traffic surveys from 2008 and 2009, our own visual inspections and pictures and the traffic injury statistics for this area. This analysis of the actual junction and pedestrian crossing situation of the area around the water tower led to the following main goals of the planning process:

- Decrease the probability for accidents to happen
- Increase the crossing possibilities for pedestrians

- Meliorate the cyclists track situation

## 2 Status quo

The planning area around the “water tower” is facing several problems.

Firstly, there are two points with an accumulation of accidents. The first point concerns the area where the side road Günser Straße leads into Grazer Straße. Within this area the course of the road is straight, but drivers have to give the right of the way to car drivers approaching from Neukirchner Straße. A straight course of the road works as an incentive for drivers to intuitively drive on (see Figure 2), and doesn't enforce them to reduce their speed. There is also a pedestrian crossing connecting the water tower with the eastern part of Grazer Straße (see Figure 3). This junction situation led to several rear end collisions in the past.



*Figure 2 Junction of Günser Straße and Neukirchner Straße*



*Figure 3 Pedestrian crossing at Günser Straße*

Secondly, the pedestrian crossing which connects the northern part of Neukirchner Straße with the eastern part of Grazer Straße is a point which caused a lot of conflicts (see Figure 4 and Figure 5). In this area the Neukirchner Straße has three lanes and Grazer Straße two lanes. The pedestrians have to cross 5 lanes, with a traffic island in the middle, without signals. Additionally the speed is very high, which makes this crossing another dangerous accident point. Furthermore this pedestrian crossing ends into another crossing traversing Neukirchner Straße. At this point pedestrians have to share the space with car drivers and cyclists coming from the cycle track coming from the city park “Promenade” (see blue circle in Figure 4).





*Figure 4 Pedestrian crossing connecting northern Neukirchner Straße and eastern Grazer Straße*



*Figure 5 Crossing as in Figure 3 view from the opposite site*

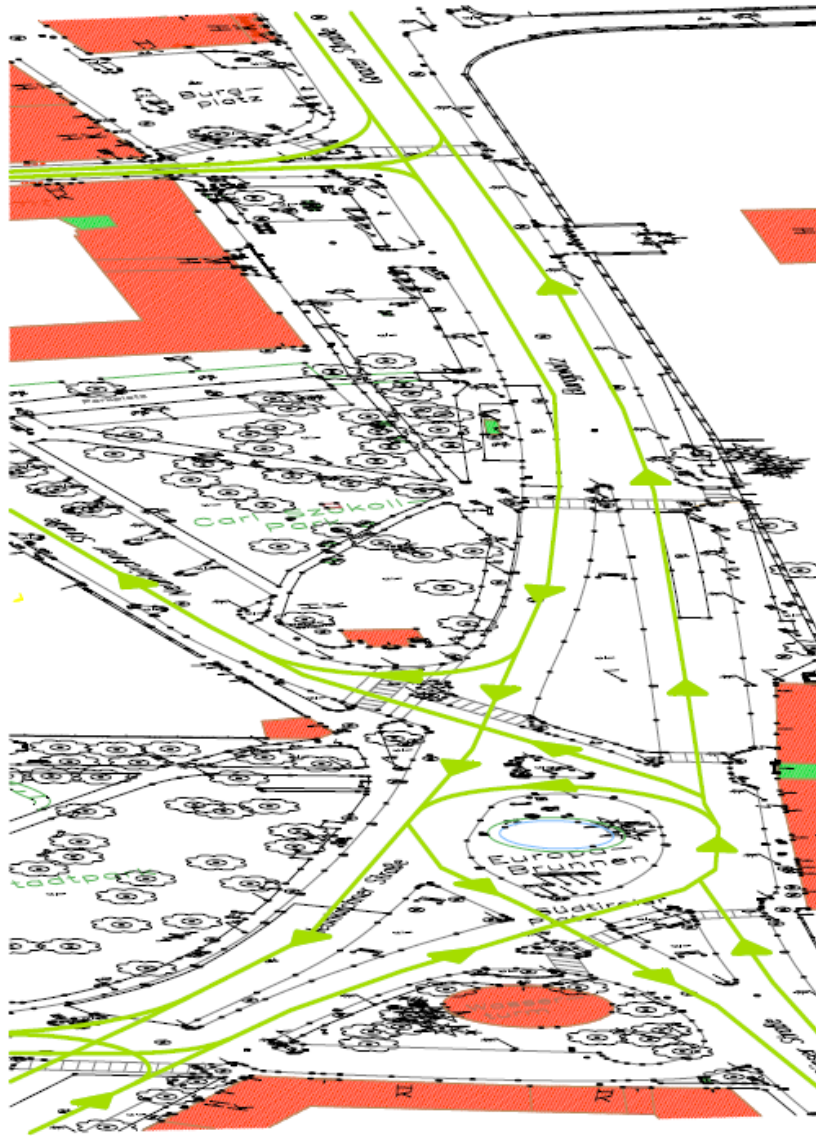
Thirdly, even the pedestrian crossing with signals at Grazer Straße led to accidents with pedestrians and cyclists, but compared to the other crossing it is relatively safe (see Figure 6).



*Figure 6 Pedestrian crossing with signals crossing Grazer Straße in front of the school area.*

Fourthly, we consider the cycle track situation as not sufficient at the moment. There is a cycle track at the west side of Grazer Straße, but there is no possibility for cyclist to access the eastern part of Grazer Straße or Günser Straße.

Figure 7 shows the traffic lane situation at the moment. The area has quite a complex structure. The lanes are very wide in Grazer Straße, giving space to two lines in each direction. Two lanes are accessing Neukirchner Straße from Grazer Straße, although this street is just a side road in this area. To summarize, one planning goal was also to clear up the junction situation.



*Figure 7 Traffic lane situation at the moment.*

During our visits at the junction area, following observations were made:

- In peak and off-peak time, there is no capacity problem at the junction.
- The area where Günser Straße leads into Grazer Straße was identified as area with high speeds, making the pedestrian crossing there very risky.
- The pedestrian crossing connecting the eastern part of Grazer Straße with Neukirchner Straße is extremely dangerous. During our visit almost an accident between a private car and a pedestrian happened.



# 3 Planning Ideas

Taking into consideration all the gathered information mentioned above we came up with a two step planning:

1. A Vision: 2 ideas for totally redeveloping the area
  - Roundabout in the middle of the former junction.
  - Splitting of the former structure into two separate junctions
2. Little planning steps, with the aim of increasing the situation for pedestrians and cyclists with as little construction works as possible. → “Minimum” scenario.

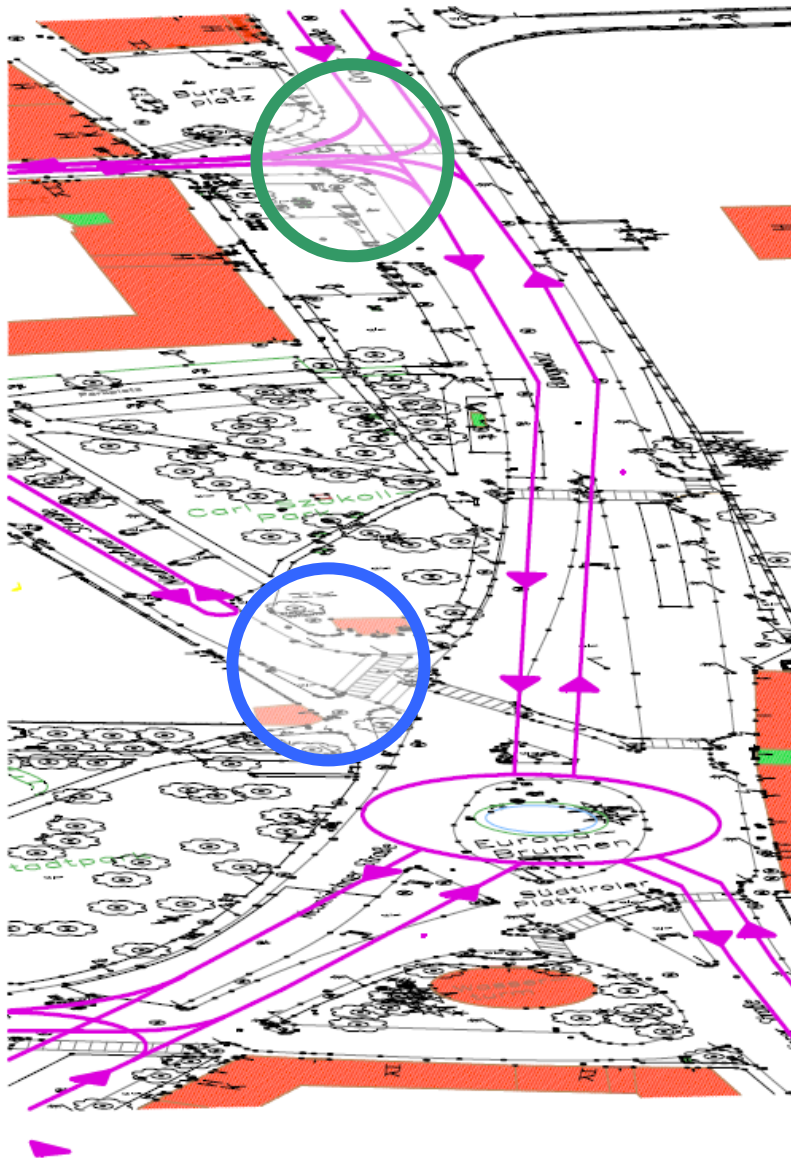
## 3.1 Solution 1 – Roundabout

In our idea we would remove the former complicated mixture of “classical junction” and “roundabout” and replace it with a roundabout with just one lane in each direction. The underlying argument would be the built bypass which makes it possible to reduce capacity on Neukirchner Straße, Maria-Theresien Ring as well as on Grazer Straße.

The main aim of this measure would be to simplify the junction situation for cars as well as to improve the situation for pedestrians who want to cross the street. This measure implies that, it is not possible to turn into the northern part of Neukirchner Straße any more.

The situation after the construction of the roundabout could be the following (see Figure 8):

We would close the part of Neukirchner Straße for traffic coming from Grazer Straße (blue encircled area in Figure 8). People who want to use the parking places in Neukirchner Straße can reach this area via the Burggasse from Grazer Straße (green encircled area in Figure 8).



*Figure 8 Traffic lane situation in solution number 1*

This aforementioned solution would improve the possibility to cross the street at this point. Firstly, one lane for each direction significantly decreases the course of the street and therefore simplifies crossing. Secondly, the closure of Neukirchner Straße gives more space for the cycle and pedestrian intersection. In this area two cycle lanes (through the city park and from the Grazer Straße) and two pedestrian crossings come together. Therefore the additional space and reduced car traffic improve the clearness of the situation.

Figure 9 and Figure 10 show the redesigned planning area in solution one. It can be seen easily that there is just one lane in each direction and that therefore the junction area is simplified for car users. Furthermore the crossing possibilities for pedestrians are meliorated. The pink lanes are the new planned cycle lanes and the orange lane in Figure 10 depicts the separate bus lane.



Figure 9 Junction area in solution 1

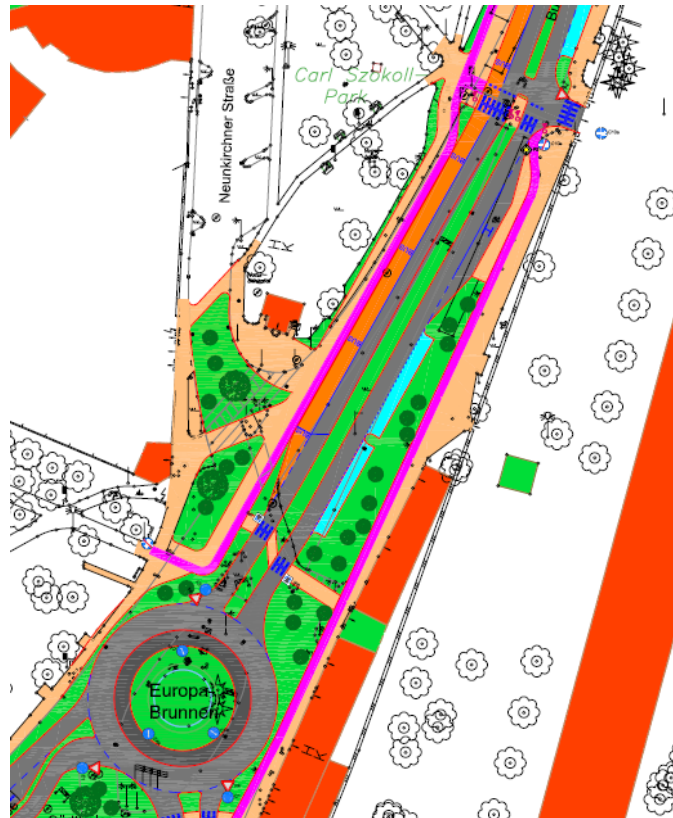
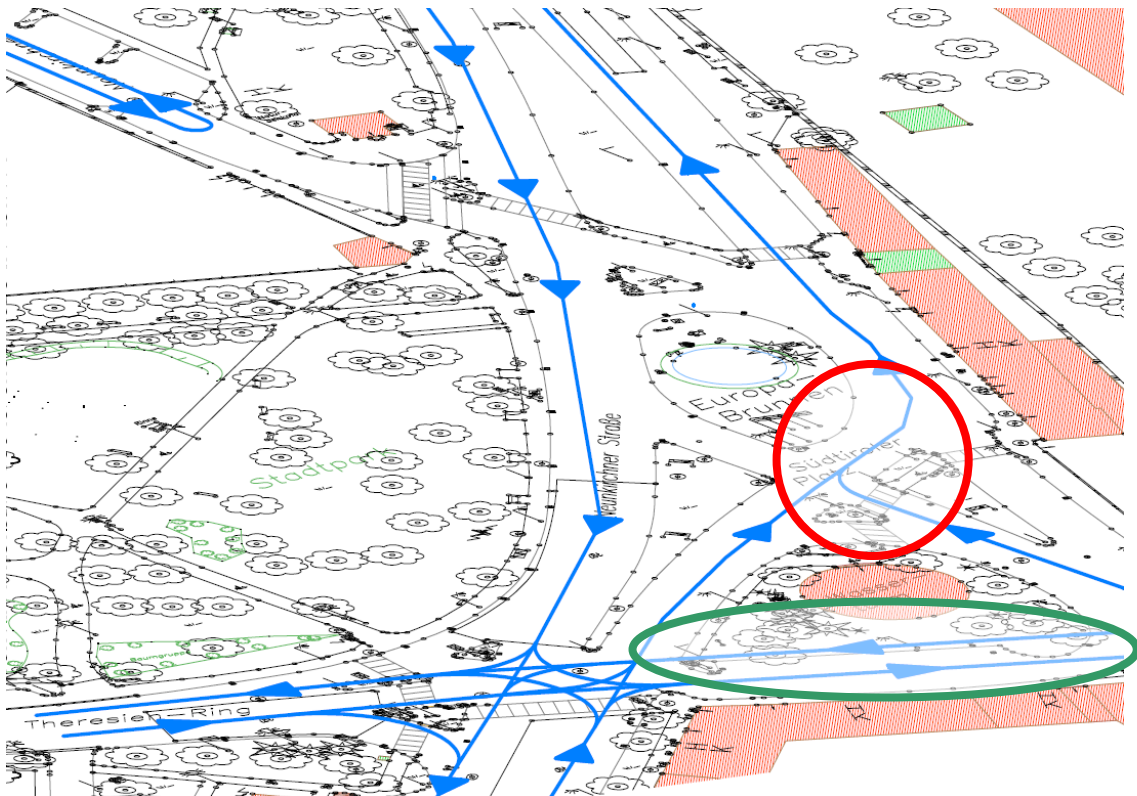


Figure 10 Northern part of the junction area in solution 1

### 3.2 Solution 2 – two separate junctions

In this solution proposal we would split up the former big junction into two separate ones. The parking space south of the water tower would be used for two lanes, one in each direction to connect to Maria-Theresien Ring and the part of Neukirchner Straße which is south of Maria-Theresien Ring (see green circle in Figure 11). Only one lane would connect Günser Straße with Grazer Straße and we would change the former straightness of this part of the road by building in a curve connecting Günser with Grazer Straße (see red circle in Figure 11).



*Figure 11 Traffic lane situation in solution number 2*

In this solution approach we would also close the northern part of Neukirchner Straße for car traffic. This measure enables us to totally reconstruct the previous complicated junction area (see Figure 12 and Figure 13). Firstly we would reduce the course section to 3 meters each lane. At the east part of Grazer Straße additionally the parking places in front of the buildings (tobacco store and doctor) are removed to give it to the cyclists, who get a cycle track towards Günser Straße, and pedestrians. The parking places north of the building would remain. Together with these measures a new pedestrian crossing and a cyclists crossing would be constructed. The reduction of the course section and the closure of the part of Neukirchner Straße would increase the safety for pedestrians and cyclists.



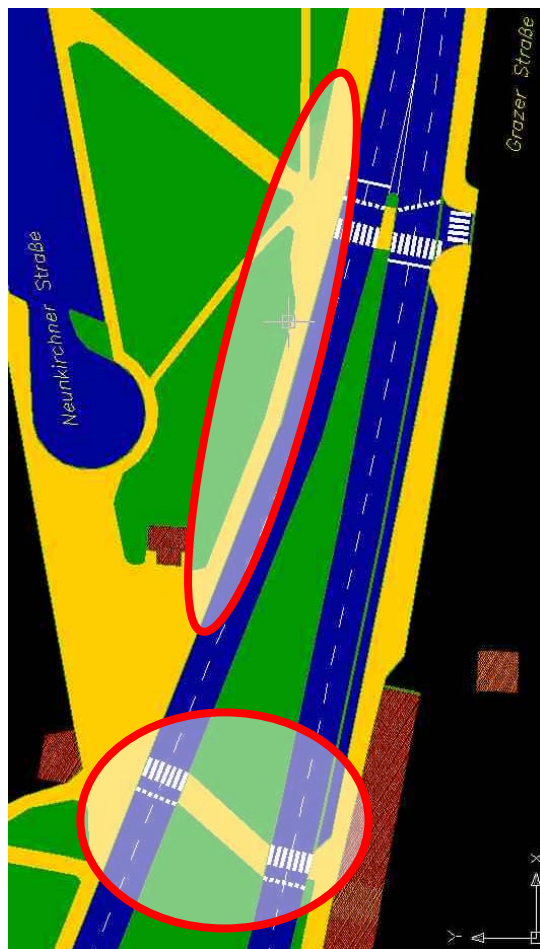


Figure 12 Map of planning solution number 3 (northern part), encircled in red improvements for pedestrians and/or cyclists.



Figure 13 Map of planning solution number 3 (southern part), encircled in red improvements for pedestrians and/or cyclists.



In the area of the pedestrian crossing with signals the actual size of the course section is 7.2 meters for one direction and 6.5 meters for the other direction. The above mentioned decrease of the course section should reduce the speed a little bit and therefore even make this crossing more secure.

### 3.3 Solution 3 – little planning steps

This planning idea represents the most feasible one, but for us it represents just a minimal scenario. We wouldn't change the junction situation at the main roads (Neukirchner Straße, Grazer Straße and Günser Straße). But still this idea includes the closure of the northern part of Neukirchner Straße. From our point of view this is necessary anyhow to meliorate the crossing situation in this area. Additionally we would create a pedestrian crossing at the end of Günser Straße. To make it still possible to reach the parking places in the area in the closed part, we plan a possibility to turn from Grazer Straße into Burggasse as in the previous solution proposals. Figure 14 represents the new junction area.



Figure 14 Map of solution number 3

# 4 Conclusions

In this report we demonstrated our ideas to redevelop the junction area around the water tower in Wiener Neustadt. From the accident analysis as well as the observations we did ourselves the biggest challenges concerned the bad situation for pedestrians and cyclists. One main goal of the new planning ideas was to meliorate the situation for those transport users. In our opinion this planning goal would be at best achieved with solution number 1 or 2. These ideas would also be the most suitable ones to decrease the car speed in the whole planning area, because they would include a reduction of the width of the car lanes. For us, solution number 3 represents just a minimum scenario.