

Developing opportunities of bicycle tourism between Budapest and Lake Balaton

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Introduction

This paper is written about a method of developing bicycle tourism and one day circular cycle routes between Budapest and Lake Balaton, between the two main tourist destinations in Hungary. There is a significant interest in that topic because of the 1364/2011. (XI. 8.) Governmental Decision about the need to develop bike routes, which says that the Budapest–Balaton path has the priority in governmental development. My study area is assigned by the proposed Budapest–Balaton cycle path of the National Spatial Plan (Országos Területrendezési Terv) and its surroundings which is enclosed by the boundaries of the settlements within 10 kilometers (6,2 miles).

Literature Review

The proposed Budapest–Balaton cycle path is 121 km (75,2 miles) long. The first section between Budapest and the Lake Velencei is quite hilly, has a higher relative relief (difference between the highest and the lowest altitude for a given area). The average is 36 m/km² in the Zsámbék Basin, 45 m/km² in Etyek Hills and 64 m/km² in Velencei Hills. After this section the proposed cycle path reaches the Great Hungarian Plain which provides a smooth surface (average relative relief: 10-20 m/km²) for the bike path (Dövényi, 2010).

Regarding the landuse of the study area agricultural land (82%) is determining, and then there is 4% of still water, an other 4 % of deciduous forest and 3% of residential area (regarding CORINE database). There is a significant amount of natural protected area, as landscape parks, protected areas, Natura 2000 SPA and SCI sites but no national parks. In the study area 11219 landscape values got surveyed. Half of them are located in Budapest but the rest of them are spreaded out (<http://tajertektar.hu/hu/>).

Regarding bicycle tourism Hungary has prosperous capabilities because of the diverse, attractive landscape full with different kind of sights located quite close to each other, as viaduct, arboretum, bird reservation, swamp, vineyards, protected tree alley, manor houses and castles. Thanks to the temperate relief Hungary is suitable for bike tours for a wide range of people, like families, younger or older ones, experienced or nonexperienced. Biking tourism is

developing in Hungary, but there are still deficiencies. Bike roads do not necessarily create a network, except by Lake Balaton, Lake Fertő and Lake Velencei. Only a few bike roads have proper signage and connected to bike facilities (Development Strategy of Cycling Tourism 2010-2015, 2010). But the number of the cyclers and the length of the Hungarian bicycle road network are dynamically growing (<http://bringaznielmeny.hu/kiegeszitolmanyok-2/?lang=en>).

My study area is based on the proposed cycle path of the National Spatial Plan, but it is not the final route yet. Decision preparing studies are made for the Budapest–Balaton cycle path with alternative routes from what the Ministry of National Development has chosen one. For that option a feasibility study has been made so the next step would be assignment and establishment.

Goals and objectives

The purpose of this paper is to provide a method to designate areas for bicycle development and then to nominate approximate directions for one day circular cycle paths connected to the Budapest–Balaton cycle route which is a route of national significance. Furthermore I aim to show a way to designate bike routes considering the touristic attractions and the suitability, which could be useful to start a survey.

My purpose is to discover the capabilities, the possibilities and the touristic attractions of the study area, to bond the existing historical, cultural and natural interests together and make shorter and longer distances for bikers with different needs. Therefore beyond the sport and recreational goals the paths are able to be more attractive for tourists and locals as well. Hereby the opportunity is given to expand the positive effect of the Budapest–Balaton bike tourism to a bigger area.

Considering the evaluation I aim to designate varying levels of difficulty one day cycle routes about 50 km (31 miles) long or less, accessible by car and public transportation as well.

Method(s)

The evaluation of the study area is made from the perspective of suitability implementing circular day cycle routes. It was performed by a program called ArcGIS -which helps to handle geographic information- and evaluated by raster grids. The base map is a terrain model combined with the boundaries of the settlements and the proposed Budapest–Balaton cycle path of the National Spatial Plan. I drew a 10-10 km (6,2-6,2 miles) wide buffer zone along the

proposed bike path then designated the study area along the boundaries of the settlements which are intersected by the buffer zone. I laid down a raster grid on the study area which has 4091 1 km*1km (0,62 miles*0,62 miles) large rasters. Therefore all of the rasters can be evaluated one by one. By the boundaries the rasters got clipped, so the areas of those are not exactly 1 km², the results for those rasters are not representative but they have no remarkable affect for the final result.

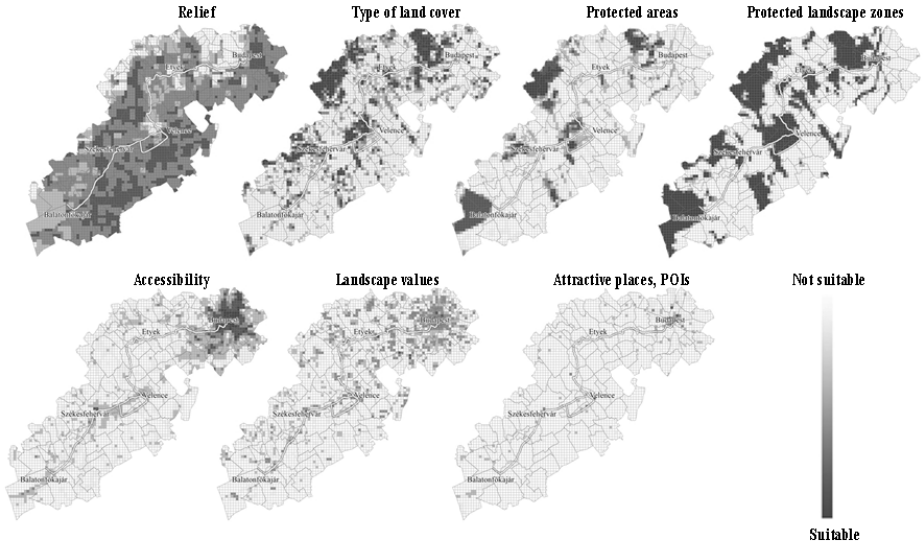


Figure 1. The seven viewpoints of the evaluation

I have chosen seven viewpoints which are significant of implementing cycle routes, as the relief, the type of land cover, the protected areas, the protected landscape zones, the accessibility, the landscape values and the information of attractive places and useful data of POI's. All of them have a separate evaluation (Figure 1.) which was made with zonal statistics and calculation of the ratio of certain area in ArcGIS. The zonal statistic is used for the relief, the accessibility, the landscape values and the POI's because they do not have area. It makes a statistic for each raster and they get scores. Regarding the polygons, as the type of land cover, the protected areas, the protected landscape zones an area calculation is used to define a ratio. I calculated the ratio of each area per raster. If the whole raster is covered it gets the maximum scores. If there is no certain kind of area on the raster, it gets no scores. If it covers only the half of it, it gets the half of the maximum scores.

Each of the evaluation results by viewpoints is shown on a map where every raster received a score between -10 and 10 apart from the land cover results (it has 15 as a maximum value). On a final map all the results got summarized. The grids which got the higher scores (dark green) are the most suitable areas for bike tourism and the grids which got the less scores or nothing (white) are the less suitable areas for bike tourism. After studying the results on the map I designated the approximate directions of the bike routes by using the existing infrastructure and connecting the attractive sights.

Results

The summarized results are shown on the Figure 2. More darker green is the color of the rasters, more suitable the area for implementing cycle routes. The white areas are not suggested for development at all because of dumps, abandoned mine or very little attractive sights. The focus points are clearly visible on the map, which are Budapest and its agglomeration, Vértes Hills, Váli Valley, Velencei Hills, Lake Velencei and its surroundings, Sárrét, Sárvíz Valley and Lake Balaton.

Based on the summarized evaluation I proposed four areas for circular day cycle routes (Figure 3.). By studying the map, the infrastructure and the sights I designated the routes on each suitable area. All of the four areas have a longer and an alternative shorter way, so the bikers can chose which one is appropriate for them depending on their age, shape, mood or time. All the routes are located close to transportation nodes and therefore are easily accessible by cars or public transportation. The designated routes can help to get to know the values of nature, culture and landscape of the surrounding area of the Budapest–Balaton bike path.

The first circular day cycle route is located on the southeastern slope of the Vértes Hill. The longer route is 47,5 km (29,5 miles) long, the shorter way is 27,2 km (16,9 miles). The tour is moderately difficult because of the terrain, easily accessible from the highway and by train as well. 1/3 of it is located in a woody area, goes along a skansen-like village and guides the bikers to an Eszterházy Castle in Csákvár, and the remains of a Haubsburg Castle in Alcsútdoboz.

The second circular day cycle route is located in the Etyek Hills and the Váli Basin. The longer route is 56,5 km (35,1 miles) long, the shorter way is 22 km (13,7 miles). The tour is moderately difficult because of the higher relief and easily accessible by car and by train as well. There is an old railway viaduct, some castles and manor houses, a remarkable Hungarian wine region and several natural sights.

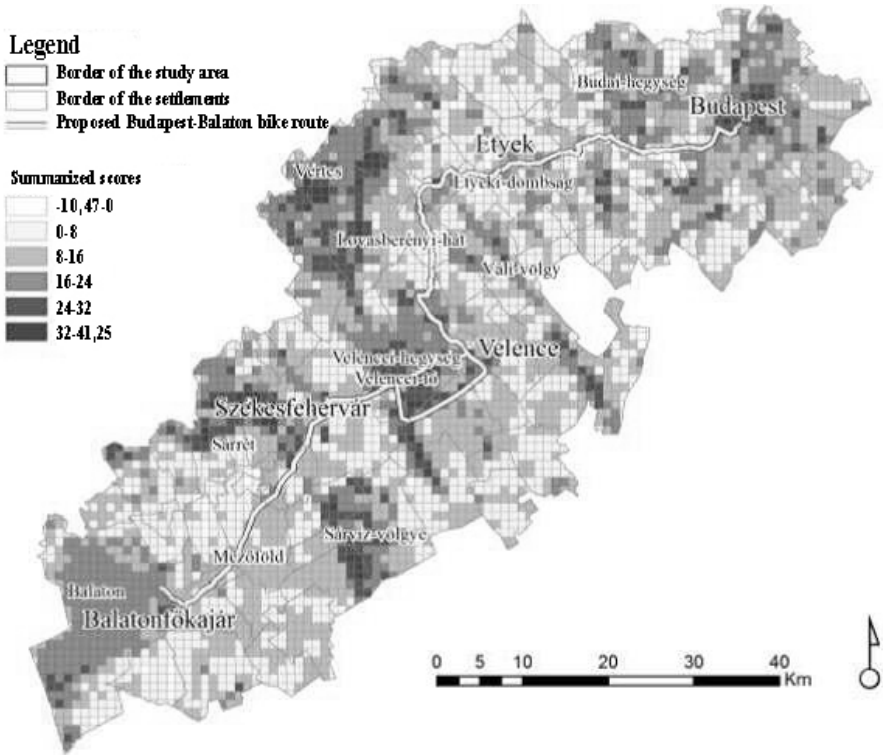


Figure 2. Summarized evaluation of the study area

The third circular day cycle route is located in Sárret, which used to be a swampy area. Therefore the name which means Mudmeadow. The longer route is 48,1 km (29,9 miles) long, the shorter way is 19,1 km (11,9 miles). The tour is easy, the terrain is quite plain. The recommended starting point is in Székesfehérvár which is a big city, offers great accessibility and there is an overlap with regional bike routes. There are three castles, a big park around one of them, many water features, meadow and turf bog not to mention the many sights in Székesfehérvár.

The fourth circular day cycle route is located in Sárviz Valley. The longer route is 48,2 km (30 miles) long, the shorter way is 26,8 km (16,7miles). The tour is easy, the terrain is quite plain. The recommended starting point is in Székesfehérvár with great accessibility. There is a swampy area which is a habitat of thousands of birds, two Zichy Castle, a hunter house, an archaeological park and remains from the 13th century among many others.

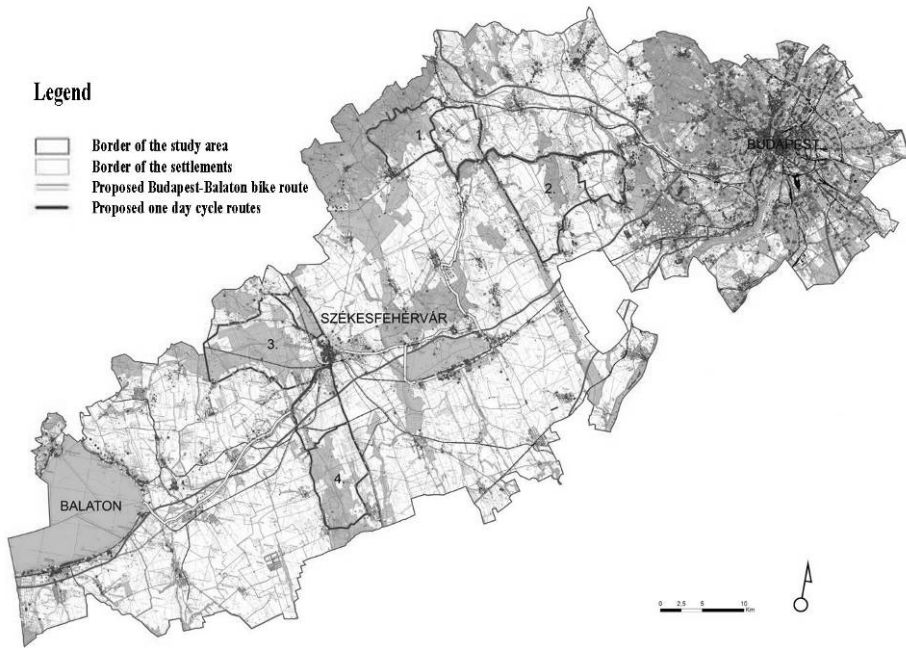


Figure 3. Proposed one day cycle routes

Discussion

The designated areas in the evaluation truly abound in natural and cultural sights. Some route of regional significance cross the dark green areas which means that my evaluation results compound with some existing plans. My evaluation method could play an important role in the decision preparing studies in the first phase. It designates the suitable areas and illustrates the results in the same time.

Then the results can be compared with the existing plans, political objectives and other arguments. That kind of evaluation method could be made for the whole country, which shows the important directions and areas for bike route developing and helps to create networks and avoid lonely bike routes without any connections.

Conclusion

This method helps to discover the valuable areas and to involve them into the bike route development. The results are illustrated on an easily understandable map which helps to make a decision where should the development take place and designate bike routes which can be analyzed in detail. My method gives the opportunity to match the bike route and the tourism development.

References

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