

## Greenways of Bratislava – Opportunities and Threats

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### Introduction

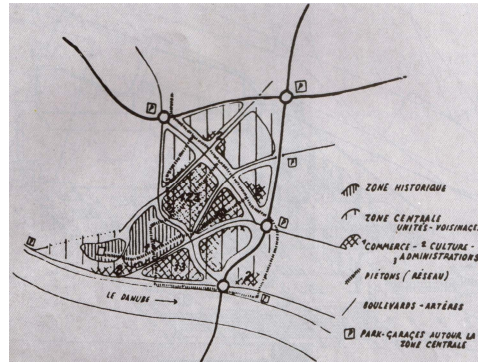
The paper aims to explore the current setting and problems of greenway planning in Bratislava, capital of Slovakia and discusses the meanings of greenways in a modern urban landscape. Bratislava's traditional landscape on the slopes of Small Carpathians and the banks of Danube witnesses a strong development pressure from nineties of last century till today, due to introduction of market economy and due to its new role as a capital since 1993. The green structures of vineyards, which played a substantial role in the image of the city and created a part of its cultural identity during centuries, disappear as they are located in the heart of the city and occupy the most valuable land for residential purposes, offering a beautiful view on the city. The green spaces along the Danube are threatened for the same reason; they occupy the embankment space - the most interesting space for development. Free open spaces within urban structure are filled by buildings. In this context rises the demand for a greener urban planning and for greenway planning, as defined by theoretical framework (Fábos, 1995, Fábos, 2004).

### Background and Literature Review

Today's knowledge in the field of landscape and green space planning, supported by ecological principles of bio-corridors, suggests that green corridors of various widths and multiple functions are needed to create a vital network of interlinked green spaces within urban areas and cities. But not only the recent knowledge, but lessons from history as well show that linear green corridors, for example alleys of Middle European baroque landscape with small sacral vernacular architecture or calvaries as pilgrims' greenways, were in history an integral part of cultural landscape, bearing inseparable aesthetic values. The greenway phenomenon as introduced in nineties (Fábos, 1995, Ahern, 1995), cover three main functions, greenways are defined as ecologically significant natural corridors, recreational areas and sites, and greenways, which provide historical heritage and cultural values (Fábos, 1995, Fábos, Ryan, 2004).

In Slovak and former Czechoslovak urban planning literature of last century the concept of green spaces linked together was pursued by architect Bohuslav Fuchs, in his theoretical work *New Zoning* from 1962, or by architect, urban planner Emanuel Hruška, who founded the Institute of Urban Planning at Slovak University of Technology in 1948 and elaborated the idea of Bratislava's green cross-axis, incorporated in master plans by Kamil Gross in 1949 and by Milan Hladký in 1955. The main idea of green cross axis (Figure 1) was to create a city boulevard 90 m

wide, from main station to the cultural centre on Danube embankment, interconnecting parks Medical Garden and Andrew's Cemetery (Vodrážka, 1991).



**Figure 1. The idea of green cross-axis of Bratislava by Emanuel Hruška (Source: Vodrážka, 1991).**

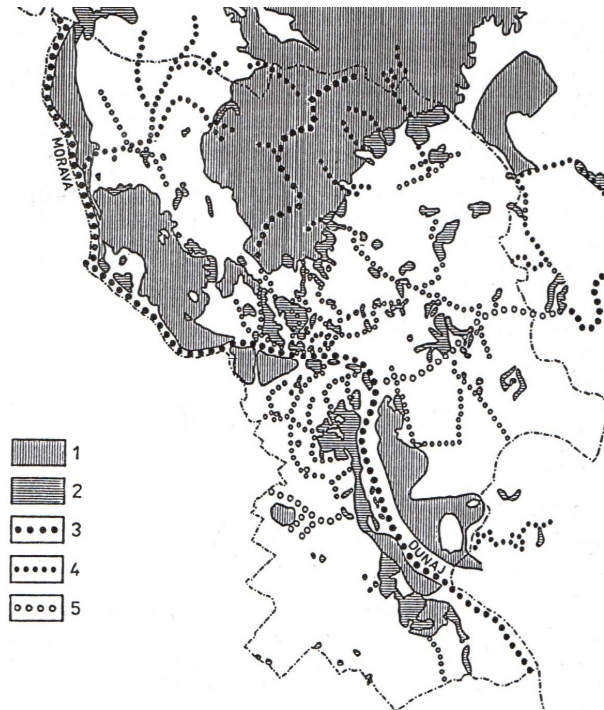
During the next communist period the ideas of greenway planning in Bratislava gradually vanished, and in urban planning literature they were not given adequate attention, too. However, for example the biggest housing estate in Bratislava, Petržalka, built since 1973 till today on the right bank of Danube, has adopted as a natural axis a fragment of Danube dead arm – Chorvatske rameno (Figure 2).



**Figure 2. Housing estate Petržalka and its green open space corridor.**

Planning for green corridors at regional level was limited, because of iron-curtain on the border with Austria, but on the other hand, due to iron curtain restricted area, riparian corridor along Danube on the border remained preserved. The main natural corridors, for example forests of small Carpathians, were protected within the legislation on nature protection. Democratic changes after 1989 meant renewal of

European connections, regional relations and opened the door for transnational cooperation and supranational planning. Nineties are also the period of ecologization of urban and spatial planning in Slovakia, although the theoretical principles of ecological networks creation have been widely elaborated earlier (Miklós, 1989, Jongman et al., 2004), landscape ecology as a science had a long tradition in former Czechoslovakia, in Slovakia represented by Ružička or Miklós. Territorial systems of ecological stability for Bratislava were elaborated, local system in 1990 and 1991 and regional system in 1994. These documents have introduced a system of bio-centres and bio-corridors, regarded as greenways with ecological functions (Figure 3).



**Figure 3. Territorial system of ecological stability in Bratislava. 1 regional bio-centre, 2 local bio-centre, 3 supraregional bio-corridor, 4 regional bio-corridor, 5 local bio-corridor (Source:Tokoš, 1994).**

System of environmental impact assessment was legalized and institutionalized in 1994, when the first act on environmental impact assessment came into force. In order to provide for the full harmonization of the Slovak legislation in the field of environmental impact assessment with the legislation of the European Union, amendment was adopted in 2000 and in 2006 the new Act No. 24/2006 Coll. came into force, reflecting new directives of European Union. Democratization of society and opportunities to draw financial support from funds of European Union since nineties enabled formation of wide range of nongovernmental organizations in the field of environment protection. These opportunities led to a revival of greenway

movement, this time directly under the name greenways, as these kinds of projects have been widely supported. Term greenway has been introduced in Slovak literature, too (Supuka, Feriancová, 2008).

### **Goals and objectives**

The main study goal is to explore the current setting and conditions for greenway planning in Bratislava and examine the use of threefold functions of greenways, and their multi-purpose use (Fábos, 1995, Fábos, Ryan, 2004), with an objective to identify the core contemporary problems of Bratislava's greenways preserving and planning and on the other hand to identify the potentials and opportunities for green corridors creation. Developed landscape ecology tradition in Slovakia and deeply elaborated territorial systems of ecological stability, favorable environment of NGOs with access to financial funds suggest, that there are a lot of opportunities in Bratislava which could lead to a successful implementation of greenway infrastructure.

### **Methods**

To identify the core contemporary problems and potentials of Bratislava's greenways preserving and planning the method of examination of present process of spatial planning, including landscape and environmental planning at local level is used. Urban or spatial planning in Slovakia is the main regulatory tool for guiding the city spatial development and land use regulation. Landscape ecological plans, territorial systems of ecological stability or general plans of greenery serve just as a base for preparation of spatial master plan, legally binding document, reflecting the current and the future development of the city and integrating partial planning processes for example transport, technical infrastructure or green system planning. Several examples of green network of Bratislava arranged along corridors were examined with connected socio-economical factors and management policies at municipal and regional level, with the aim to identify the core restraints of greenway planning and implementation. The research focused on legal, institutional, and economic aspects of landscape, urban and environmental planning of greenway networks and their management policies, too. For example study by Ryan et al. (2006) using the method of in-depth interviews found four key strategies important to implementing greenway projects across multi-jurisdictional boundaries: establishment of partnerships with a broad array of stakeholders, clearly stating the project goals and visions, importance of public involvement; and necessity of regional governance.

### **Greenways in Bratislava Master Plans**

Bratislava's governance comprises of three levels: regional, municipal and city parts level. The main guiding documents are the Master Plan of Bratislava Region at

regional and Master Plan of Bratislava at municipal level. Local governments of city parts procure mainly regulation plans at zonal level.

In Master Plan for Bratislava Region greenways with ecological function are represented by the basic elements of regional territorial system of ecological stability. While regional bio-centres are the areas which mainly correspond with protected areas under the system of nature protection (few newly identified are proposed for protection) and their areas and borders are clearly stated, greenways – regional bio-corridors are expressed as ideal lines without clear statement of their physical parameters, borders or width. This is the main problem of linear corridors, translated further to zonal levels, that they miss the tool for decision making to preserve their full functions as greenways. In the case of Bratislava they remain often as thought virtual lines in a built up area. For example in the case of Small Danube, bio-corridor formulated just as a line in the axis of the river cannot cover the full meanings of riparian corridor with accompanying vegetation functions.

Planning for recreational greenways is included in regional master plan in the form of cycling trails (Figure 4), the main route is the international trail connecting Passau, Vienna, Hainburg, Bratislava, Gabčíkovo, Komárno, Štúrovo, Budapest, several other cycling routes are incorporating places of historical heritage and places of cultural interest.



**Figure 4. Recreational greenways - cycling routes (black line), using riparian corridor of Danube.**

The main problem of cycling routes are collision points, often the network has to use roads, and trails through urban areas is difficult to call greenways. In fact, in Slovakia the word greenway in English is used mainly as a synonym for recreational use, cycling and other green traffic routes, where non-profit and non-governmental organizations are active, for example the Ecopolis foundation with the project Greenways has supported implementation of several local recreational cycling and

pedestrian paths. Municipal government is also active in building cycling trails. There are around 200 km of cycling routes today, in comparison with around 85 kms in 2006.

At city level the Master Plan of Bratislava, approved in 2007, is a basic document for guiding investment and for spatial decision making (Figure 5)



**Figure 5. Green network (dark grey) in the spatial plan of Bratislava (Vranková, O., Drobniaková, D. et al., 2007).**

For its preparation and other purposes, for example management of urban green space a big amount of studies and research on greenery in Bratislava have been elaborated, mainly inventories, evaluations of greenery (Reháčková et al., 2007, Reháčková and Pauditšová 2006) and works with reporting character, ecological assessments and general greenery plan etc. These works on greenery concentrated mainly on inventory and evaluation of existing greenery and less towards a vision incorporating the green structures into the urban structure of the city and towards designing new green structures. Then their results are not effectively adopted into the philosophy of master spatial plan, which is the main document guiding the town spatial development. Master Plan of Bratislava lays out 24 bio-corridors, ecological

greenways, all of regional or supra-regional, one of provincial importance. It has not shifted the issue of bio-corridor planning into local – city level. In the text part of document it states the difficulties with legislative and spatial declaration of the theoretical concept of bio-corridors in urban areas. Recreational greenways are represented again as cycling routes similarly as in regional plan (13 cycle trails are mentioned, from that two international routes, Danubian and Moravian). Philosophy of planning for linear continuous green corridors is not mentioned, there are examples of existing open spaces within urban structure, for example mentioned corridor of Chorvátske rameno in Petržalka, where concentration of urban structure is proposed. However, in another city part Devínska Nová Ves, new areas for urban development respect existing structure of water canals, creating a linear green network within urbanized area.

## **Results**

The main problem or threat of greenways in Bratislava spatial planning system has been identified as an inability to incorporate and translate the ecological concept of bio-corridors into the language of urban planning regulations enabling spatial decision making. The primary role of local government in urban planning and in guiding development is to preserve open green linear physical structures in urban areas, as this anticipates that they will serve as multi-purpose corridors fulfilling all the expected functions and benefits (Fábos, 1995, Fábos, Ryan, 2004). Recreational uses, as cycle or other paths, usually cleverly find opportunities offered by nature infrastructure and usually can be implemented by non-governmental agencies, or private sector, where the role of government is to support or coordinate implementation of these greenways as individual projects (Ryder, 1995). The examination of multiple uses in Bratislava case suggest, that existing green corridors in urban area are usually multiply used.

## **Discussion and conclusion**

It could seem that an emphasis on ecological aspects in Slovakia will help to incorporate the idea of greenways into urban and spatial planning, but the case of Bratislava shows the problems of translating the ecological concept into effective urban planning regulatory tools. State of the Environment Report of the Slovak Republic 2008 (Klinda, Lieskovská et al., 2008) have found, that expected elaboration of territorial systems of ecological stability to local levels in Slovakia was not successful. There are gaps in comprehension of greenways and planning for linear corridors between landscape ecologists, landscape architects and urban planners. Architects - urban planners usually guiding the multidisciplinary spatial planning teams in Slovakia are not educated in the field of landscape ecology as landscape architects nowadays are. The prevailing tendency is to accept bio-corridors as virtual lines, without will to translate them into spatial regulations. Landscape ecologists without experience in spatial planning are not able to evolve the methodology meeting the spatial decision making. It seems to be the landscape

architects who should bridge the gaps and pursue their green visions in spatial planning of urban areas. Collaborative approach and enhancement of greenways perception as multifunctional corridors seem to be the right way to reduce the gaps, greenways appear to be a useful strategy for planning (Ahern, 1995) in Slovak case, too, with a potential to bring the ecological concepts of territorial systems of ecological stability closer to the needs of spatial planning and urban management policies.

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