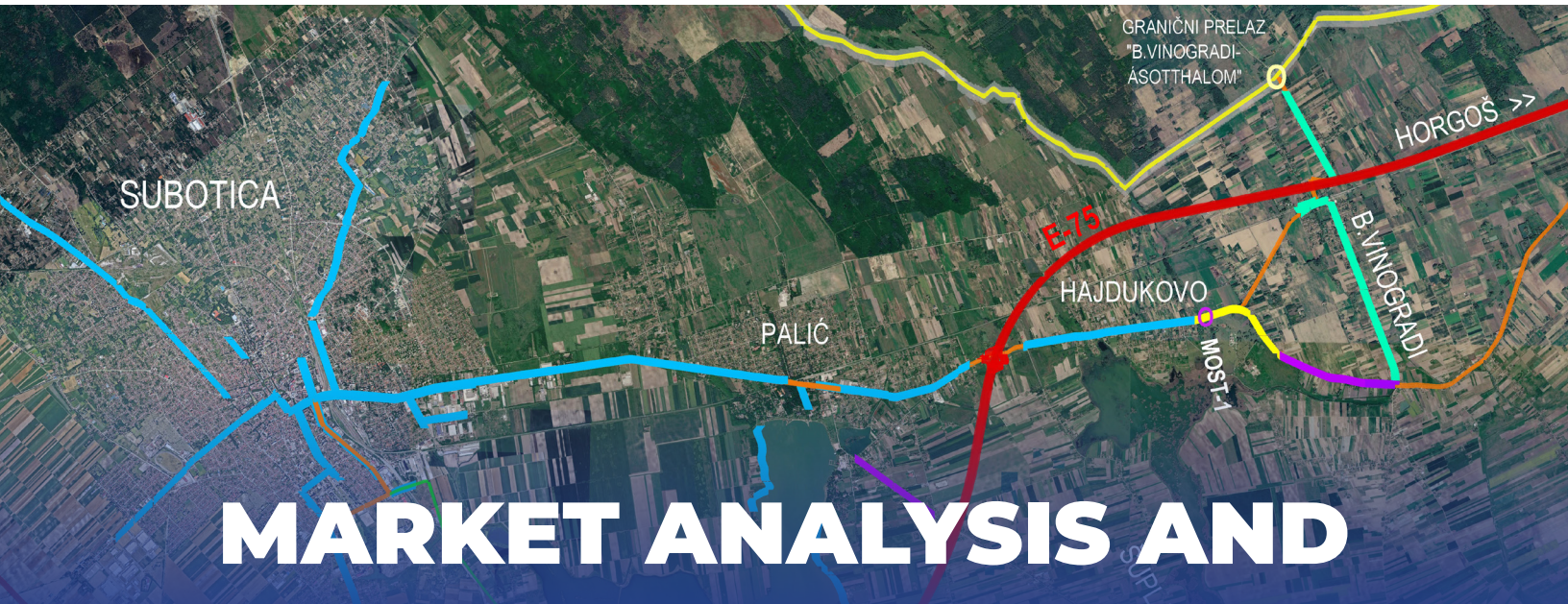
Interreg IPA Hungary - Serbia
Co-funded by the European Union

Joint development of cross-border cycling tourism along EuroVelo 13

OPTI-BIKE 3



MARKET ANALYSIS AND DEVELOPMENT OF THE CYCLE TOURISM BRAND AND TOURISM PRODUCT ALONG EUROVELO 13 FOR THE OPTI-BIKE 3 PROJECT

Good neighbours creating ***common future***

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This study was prepared within the framework of the OPTI-BIKE 3 project and was co-funded by the Interreg IPA Hungary–Serbia Cross-Border Cooperation Programme

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SIGILLUM LIBERE ET REGIE CIVITATIS MARIA THERESIOPOLIS


TOMPA

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The City of Subotica, together with its Hungarian partner, the Municipality of Tompa, is jointly implementing *Joint development of cross-border cycling tourism along the EuroVelo 13 cycling route, i.e. OPTI-BIKE 3 (project ID: HUSRB/23R/22/067)*, which is a continuation of the previously successfully completed OPTI-BIKE and OPTI-BIKE 2 IPA projects and received funding within the framework of the Interreg–IPA Hungary–Serbia Cross-border Cooperation Programme.

The lead beneficiary of the programme is the City of Subotica, while Beneficiary 1 is the Municipality of Tompa.

The *EuroVelo 13* cycling route stretches from the northern European coasts to the Black Sea and, among other places, crosses the border between Serbia and Hungary, providing cyclists with an excellent opportunity to discover the history and landscapes of the region and serving as a bridge between different cultures and peoples. Along the border section between Serbia and Hungary, the route runs along quiet rural roads connecting the *OPTI BIKE 3* project partners, namely Subotica in Serbia and Tompa in Hungary.

Subotica, one of the cities along the route, is known for its Art Nouveau architecture, multicultural spirit and rich history. Cyclists following the *EuroVelo 13* route have the opportunity to discover this beautiful city, enjoy its cafés and restaurants, and visit nearby Palić to relax by the lakeside and take a walk in the nature park. From Subotica, the route continues north through the Southern Great Plain, where cyclists can explore the flatland landscapes and enjoy the peace and beauty of nature. Along this section of the *EuroVelo 13* route, cyclists can find various accommodation facilities and restaurants in both Serbia and Hungary, making multi-day tours easy to plan. The aim of the project is to make cycling easier and faster and to create additional tourism content in North Vojvodina and Bács-Kiskun County.

In order to achieve the objectives of the project, the following tasks need to be carried out:

- In the territory of the City of Subotica, 4.226 metres of cycle path will be constructed (2.827 metres in Bački vinogradi, on Segedinski Road, and 1.400,32 metres in Palić, on Kanjiški Road), as well as a cycling bridge at the exit of Hajdukovo. In addition, a bicycle stop equipped with an interactive board, three bicycle service points and two bicycle traffic counters will be established. In parallel, a mobile application for cyclists will also be developed containing data on the tourism offer of the region, and several events will be held to present the project and to promote the tourism offer of the region and cycling as a way of life.
- In Tompa, 764 metres of cycle path will be constructed along Main Road 53. A bicycle stop equipped with an interactive board, two bicycle service points and two bicycle traffic counters will also be established here. In Tompa, great emphasis will also be placed on presenting the project and promoting cycling tourism and the *EuroVelo 13* route.

The investment will be implemented from 1 September 2024 to 31 August 2027.

The total value of the project is 2.348.999,64 euros, of which the EU contribution amounts to 1.996.649,69 euros, while 209.879,50 euros in own contribution has been allocated for this purpose from the budget of the City of Subotica. The EU funds allocated to the City of Subotica amount to 1.189.317,14 euros.

CHAPTER I

1. Subject of the Project, Sustainable Transport, and Cycling in Urban Mobility

1.1. INFORMATION ON THE SUBJECT OF THE OPTI-BIKE 3 PROJECT

The OPTI-BIKE 3 project is being implemented within the Interreg IPA Hungary-Serbia Cross-Border Cooperation Programme for the 2024-2026 period and represents the logical continuation of previously initiated and successful activities aimed at developing cycle tourism in the border area. The lead partner is the City of Subotica, in cooperation with partners from Hungary, including the town of Tompa.

The project forms an organic whole and further develops the achievements of earlier cross-border cooperation programmes (OPTI-BIKE and OPTI-BIKE 2) related to the EuroVelo 13 cycle route.

The development of sustainable tourism and the improvement of cross-border cooperation are key priorities of contemporary European Union regional policies. In this context, cycle routes are particularly important as instruments for connecting territories, protecting the environment and developing local economies. One of the most significant European routes is EuroVelo 13, also known as the Iron Curtain Trail, which follows the former dividing line of Europe during the Cold War. Its symbolism is especially powerful: what once divided European societies during a dark period of history now connects and integrates them.

The European EuroVelo route network provides a strategic framework for the development of cycle tourism, with the aim of connecting European countries through standardised and safe infrastructure. EuroVelo 13 is of additional importance because it links historical heritage with contemporary tourism flows.

Figure 1. Transporting children by bicycle[1]

[1] https://biciklo.me/, by Radlobby

The main objective of the project is to improve the quality and accessibility of cycling infrastructure along the EuroVelo 13 route and to develop a joint tourism product that will increase the attractiveness of the region. It is focused on the development of sustainable and inclusive cross-border cycle tourism and continues the previous phases (OPTI-BIKE 1 and 2), with the task of upgrading the existing infrastructure and turning it into a recognisable tourism brand.

The importance of the project is particularly reflected in the achievement of its specific objectives.

The specific objectives of the project include:

- development and modernisation of cycle paths,
- improvement of tourism signage and supporting infrastructure,
- digitalisation of the tourism offer,
- strengthening the promotion of cycle tourism,
- improvement of cross-border cooperation.

1.1.1. Main Activities in the Implementation of the OPTI-BIKE 3 Project

The project includes numerous activities that have a direct impact on the development of the EuroVelo 13 route:

- construction and reconstruction of cycle paths in the border area,
- installation of rest areas, service stations and information boards,
- development of mobile applications and digital platforms,
- organisation of promotional events and cycling tours,
- education of the local population and tourism stakeholders.

Particular emphasis is placed on connecting tourist attractions such as Lake Palić and Subotica with the international route.

OPTI-BIKE 3 plays an important role in improving the functionality and attractiveness of EuroVelo 13. It not only upgrades the infrastructure, but also introduces additional amenities that make the route more competitive in the European cycle-tourism market. The project contributes to the creation of alternative routes and local detours, thereby providing tourists with a richer experience.

In addition to the indisputable fact that cycling as a form of tourism contributes to public health and reduces traffic congestion and pollution, the implementation of the project provides a range of immediate and cumulative advantages and benefits for the cross-border region. Given the complexity of the project, its significance is multifaceted and is realised through several dimensions, including economic, environmental, social and spatial development.

From an economic perspective, the project contributes to the development of the local economy by increasing tourism expenditure and encouraging entrepreneurship in the service sector.

The environmental dimension is reflected in the development of bicycle transport, which helps reduce harmful gas emissions and supports the sustainable management of resources.

The project's social significance lies in strengthening cooperation between local communities and encouraging social cohesion in cross-border regions.

The project's spatial significance is reflected in improved infrastructure and better connections between rural and urban areas.

1.1.2. Phased Objectives of the OPTI-BIKE 3 Project and Continuity with Previous Phases

On the one hand, the implementation of OPTI-BIKE 3 consolidates the experience gained through previous OPTI-BIKE projects; on the other, it represents a step forward in the practical application of new knowledge.

This project continues initiatives aimed at improving cycling infrastructure, sustainable mobility and the development of tourism products along international routes such as EuroVelo 13.

The implementation of OPTI-BIKE 3, in its function of improving the EuroVelo 13 route, can be viewed through several interconnected phases, from strategic planning to sustainable management.

The preparatory phase forms the foundation of the project. During this phase, strategic objectives are defined, existing resources are analysed and key stakeholders are identified. It includes a detailed analysis of the current condition of cycling infrastructure, tourism potential and institutional capacity. Partnerships are also established between local authorities, tourism organisations and international partners, while project and technical documentation is prepared and sources of funding are secured. Particular importance is attached to aligning the project with European sustainable-mobility standards and regional development strategies.

The infrastructure phase includes concrete works to improve the cycling network. This involves the construction and reconstruction of cycle paths and the installation of signage, rest areas, service stations and supporting equipment. Particular attention is paid to user safety, connections with existing transport systems, and integration with natural and cultural resources along the route. High-quality infrastructure provides the basis for the further development of the tourism offer and for increasing the attractiveness of the region.

The tourism-product development phase focuses on creating specific tourism content connected with the cycling routes. This includes the development of themed routes and service packages (accommodation, gastronomy and guided tours), as well as the involvement of the local community and small businesses. The aim is for cycling to be viewed not merely as a mode of transport, but as an integral part of the tourism experience. During this phase, destination brands are developed and service quality is improved in line with the needs of modern cycle tourists.

The product digitalisation and promotion phase involves the application of modern information technologies to increase the visibility and accessibility of the tourism offer. Digital platforms, mobile applications, interactive maps and navigation systems are developed to make trip planning easier for users. Promotional activities include online campaigns, social media and cooperation with international tourism networks. Digitalisation improves the connection between users and the destination and increases the project's competitiveness in the global market.

The management and sustainability phase is the final, yet continuous, part of the project and is focused on the long-term operation and improvement of its results. During this phase, management models, monitoring and evaluation systems, and mechanisms for financial sustainability are established. Particular emphasis is placed on environmental protection, the rational use of resources and the active involvement of the local community. A sustainable approach enables

the project to generate lasting positive effects on the economy, tourism and quality of life in the region.

Viewed as a whole, through these phases the OPTI-BIKE 3 project represents an integrated development model that connects infrastructure, tourism, digitalisation and sustainability, thereby helping to position the region on the European cycle-tourism map.

The OPTI-BIKE 3 project cannot be viewed as an isolated initiative, but rather as the logical continuation and upgrading of the previous development phases embodied in the OPTI-BIKE and OPTI-BIKE 2 projects. Their interconnection reflects the principle of phased and strategic development, in which each subsequent stage uses the results of the previous one, deepens them and broadens their impact, particularly in the context of developing cycle tourism along European corridors such as EuroVelo 13.

OPTI-BIKE 1 was the initial, pioneering phase, aimed primarily at identifying potential and laying the foundations for the development of cycling infrastructure and cycle tourism. The key focus during this phase was on mapping routes, analysing the existing situation and raising awareness among relevant stakeholders, from local authorities to tourism organisations. The first forms of cross-border cooperation were also established, which was of decisive importance for projects relying on international routes.

Building on the foundations laid by OPTI-BIKE 1, the OPTI-BIKE 2 project represented the phase of concretisation and operationalisation. This stage brought visible infrastructure improvements and the development of the first structured tourism products. The focus shifted from analysis to implementation: building and marking paths, developing quality standards and strengthening the capacities of local stakeholders. Institutional cooperation and coordination between partners were also improved, creating the conditions for more serious positioning of the region on the tourism map.

OPTI-BIKE 3 builds on these results but goes one step further, moving from the development phase to optimisation, integration and long-term sustainability. While the previous projects laid the foundations and developed the basic infrastructure and offer, OPTI-BIKE 3 seeks to connect these elements into a single, competitive and internationally recognisable tourism product. Particular emphasis is placed on digitalisation, improving the user experience and stronger promotion, thereby increasing the visibility and attractiveness of the destination.

The relationship between the three projects can also be viewed through continuity of objectives: from initial mapping and planning (OPTI-BIKE 1), through implementation and development (OPTI-BIKE 2), to optimisation and sustainable management (OPTI-BIKE 3). This approach enables the rational use of resources, risk reduction and the achievement of long-term effects, both in tourism and in the broader context of regional development and sustainable mobility.

In conclusion, OPTI-BIKE 3 represents the culmination of previous efforts: a phase in which the results of OPTI-BIKE 1 and 2 are not only consolidated, but elevated to a higher level through innovation, digital tools and strategic management. It is precisely this connection and continuity that make the project an example of good practice in the development of cycle tourism and sustainable infrastructure in the European context.

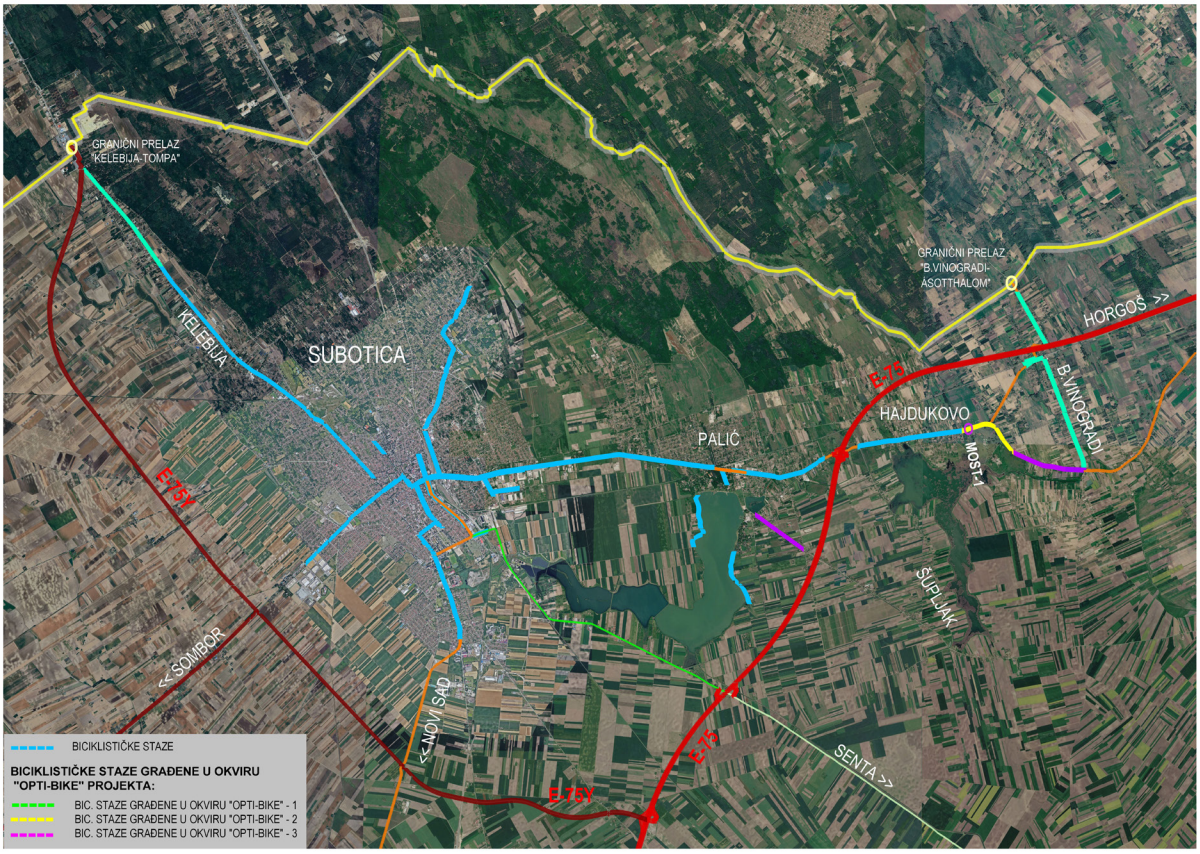


Figure 2. Constructed cycle paths in the territory of the City of Subotica

1.2. SUSTAINABLE SOCIETY – SUSTAINABLE TRANSPORT

Cycling is one of the key pillars of sustainable urban mobility in modern cities. In the context of increasingly pronounced problems such as traffic congestion, air pollution, climate change and declining quality of life in urban areas, the bicycle emerges as an efficient, environmentally friendly and socially beneficial means of transport. Its role goes beyond an individual mode of travel and becomes an important element in the strategic planning of sustainable cities.

One of the most important advantages of cycling is its positive impact on the environment. Unlike motor vehicles, bicycles emit no harmful gases and therefore directly contribute to reducing carbon-dioxide emissions and other pollutants. In this respect, the development of cycling infrastructure represents a significant step towards achieving the objectives defined by European Union policies on sustainable development and the fight against climate change.

In addition to its environmental benefits, cycling also offers significant economic advantages. The costs of purchasing and maintaining a bicycle are many times lower than those associated with a car, while public expenditure on the construction and maintenance of transport infrastructure is also reduced. Cities that invest in cycle paths, bicycle parking and public bicycle systems achieve long-term savings and increase the efficiency of the transport system.

From a social perspective, cycling contributes to improved public health. Regular physical activity reduces the risk of numerous diseases, including cardiovascular disease, obesity and stress. This eases pressure

on the healthcare system, while citizens become more active and productive. Bicycles also contribute to social inclusion because they are accessible to a broad range of the population, regardless of income.

From an urban-planning perspective, integrating cycling into the transport system contributes to the creation of more humane and accessible cities. Cities such as Copenhagen and Amsterdam are examples of good practice, with cycling playing a central role in the everyday lives of residents. These cities have developed high-quality infrastructure, including separated cycle lanes, signage and safety measures, which encourages residents to use bicycles as their primary means of transport. The City of Subotica can also take pride in its long tradition of bicycle use in transport. In this case, tradition and contemporary scientific theory are fully aligned, to the benefit of our residents.

However, the development of cycling also faces certain challenges. A lack of adequate infrastructure, traffic-safety risks and insufficient public awareness often hinder wider acceptance of the bicycle. It is therefore necessary to implement integrated policies that include education, planning and investment. Initiatives such as the European Cyclists' Federation further contribute to promoting cycling internationally. This project represents one piece of the overall mosaic of sustainable urban mobility.

Cycling plays multiple roles in the development of sustainable urban mobility. It contributes to environmental protection, improved public health, economic savings and the creation of higher-quality urban space. In the future, cities that successfully integrate cycling into their transport systems will have a significant advantage in achieving sustainable development and a better quality of life for their residents.

Improving citizens' quality of life, raising environmental awareness and concern for the environment, and combining tourism experiences with relaxation form a strategic direction that demonstrates the close connection between the objectives of the OPTI-BIKE 3 project and the theoretical foundations of sustainability.

1.2.1. The Concept and Importance of Sustainable Development

Over the past several decades, the sustainability of traditional frameworks of life has repeatedly been called into question, whether in relation to individuals or society as a whole. From family farms to multinational corporations, the same conclusion applies: survival, and especially development, are impossible if resources are used irresponsibly. The underlying logic of a prudent family-farm owner and that of the manager of a structurally complex international company is essentially the same. In this sense, sustainability is an inseparable part of entrepreneurship as well as everyday life.2

Sustainable development is a concept that means meeting the needs of present generations without compromising the ability of future generations to meet their own needs. The concept encompasses a balance between three fundamental pillars:

1. Economic development - Encouraging growth and prosperity while using resources efficiently.
2. Social equity - Ensuring equality and justice and improving quality of life for all people.
3. Environmental protection - Preserving nature and using natural resources responsibly in order to prevent pollution and degradation.

[2] Alexander Haim. (1990). The Vest-Pocket CEO. Prentice Hall, p. 11.

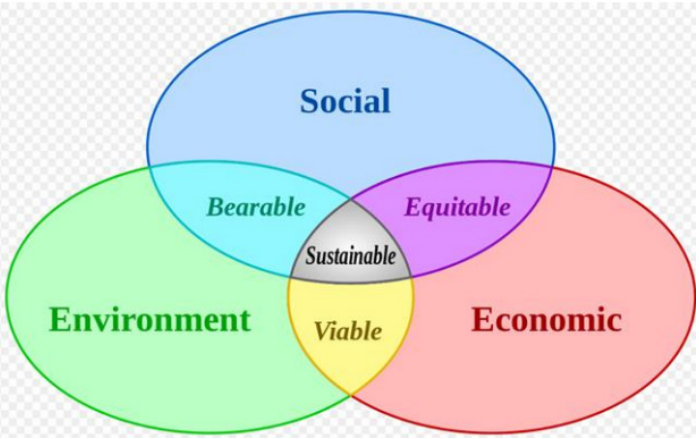


Figure 3. Sustainable development[3]

The importance of sustainable development:

- Resource conservation: Natural resources such as water, air and land are limited. Sustainable development enables their rational use and preservation for future generations.
- Pollution reduction: The application of sustainable practices in industry and everyday life reduces emissions of harmful gases and waste, thereby contributing to a healthier environment.
- Social stability: Sustainable development promotes equality and the fight against poverty, leading to more stable and just societies.
- Economic resilience: An economy based on sustainable principles has a greater capacity to adapt to global challenges such as climate change or economic crises.
- Long-term perspective: Instead of short-term gains, sustainable development focuses on long-term benefits for humanity as a whole and for the planet.

Sustainable development has become a key topic in global discussions, particularly following the adoption of the 2030 Agenda and the United Nations' 17 Sustainable Development Goals, which cover areas such as eradicating poverty, clean energy, climate action and ecosystem conservation.

1.2.2. The Origin and Evolution of the Conceptual Definition of Sustainability

Given that the resources on our planet are limited and that their consumption is increasing dramatically, this issue has acquired a complex and multidisciplinary character with potentially far-reaching consequences at the global level. As early as the 1960s, the Club of Rome was established as an international non-governmental organisation with the aim of researching and raising awareness of the specific features of accelerated development and its consequences for human society. The term sustainable development first appeared in the professional literature in 1982 in the work of Lester[4]. In that work, the author examined development not only from an economic perspective, but used a systems approach to

[3] https://commons.wikimedia.org/wiki/File:Developpement_durable.jpg.

[4] Lester R. Brown (1982). Building a Sustainable Society. W. W. Norton & Co. Inc., pp. 27-31.

consider its effects on society and the environment as a whole. Researchers soon became aware that these areas were also the pillars of sustainable development. Shortly afterwards, global sustainability problems came into the focus of the United Nations (UN). The establishment of expert UN commissions, such as the World Commission on Environment and Development, better known as the Brundtland Commission, further increased global public interest in the problems of sustainability in development. On the proposal of the Brundtland Commission, an international conference was held under UN auspices in Rio de Janeiro in 1992, where Agenda 21 was defined[5]: a set of tasks in 40 chapters aimed at harmonising development and environmental protection.

- Combating poverty,
- Changing consumption patterns,
- Protecting and improving human health,
- Sustainable development of human settlements,
- Integrating environment and development into decision-making processes,
- Protecting the atmosphere,
- An integrated approach to available resources,
- Combating deforestation,
- Combating drought,
- Sustainable development in mountain regions,
- Promoting sustainable agriculture and rural development,
- Conserving biological diversity; protecting drinking-water resources,
- Managing toxic and chemical substances,
- Preventing the illegal trade in toxic and hazardous materials,
- Managing solid waste and wastewater,
- The global movement for women's rights,
- The global movement for sustainable and balanced development,
- Recognising the importance and role of indigenous communities and peoples,
- Development in education and training, as well as awareness-raising.

Following these ambitious beginnings, development strategies continued to be defined at both global and national levels. Over time, the definition of sustainable development also evolved without departing significantly from the original concept. Nevertheless, it remained imperative that priority be given to meeting the needs of the poor and to limiting resource consumption. Fundamentally, account must be taken of the fact that our environment must meet the needs not only of present generations, but also of future generations[6].

5 https://sustainabledevelopment.un.org/Agenda21.

6 János Szlávik, Sustainable Business Activity, CompLex, Budapest, 2013, p. 37.

Figure 4. Agenda 2030 - 17 Sustainable Development Goals[7]

1.2.3. Fundamental Objectives and Principles of Sustainable Development

The successful functioning of national economies is also reflected in achieving the necessary compromise between meeting the needs of individuals, communities and business entities within the framework of the general social interest and applicable legal norms. In a broader sense, sustainable development refers to development processes in the economic, environmental and social spheres, while in a narrower sense it refers to the conservation of natural resources, primarily renewable resources (water), non-renewable resources (minerals) and partly renewable resources (waste management). It is logical that consuming renewable resources more intensively than their capacity for regeneration leads to disastrous consequences, while non-renewable resources should be exploited rationally. In 2015, the United Nations defined the Global Goals for sustainable development, known as the 2030 Agenda, with the intention of eradicating poverty, protecting the planet and achieving peace and prosperity by 2030 at the latest.

The Member States agreed on 17 goals, taking into account the interests of the poorest:

- No poverty.
- Zero hunger.
- Good health and well-being.
- Quality education.
- Gender equality.
- Clean water and sanitation.
- Affordable and clean energy.
- Decent work and economic growth.
- Industry, innovation and infrastructure.

[7] https://unglobalcompact.ge/en/sustainable-development-goals/

- Reduced inequalities.
- Sustainable cities and communities.
- Responsible consumption and production.
- Climate action.
- Life below water.
- Life on land.
- Peace, justice and strong institutions.
- Partnerships for the goals.

On the basis of the United Nations 2030 Agenda, the Republic of Serbia established a framework strategy in this field. In 2008, the National Sustainable Development Strategy was adopted as the fundamental document in this area. The objectives of the OPTI-BIKE 3 project are fully aligned with the National Sustainable Development Strategy and represent a clear example of its implementation.

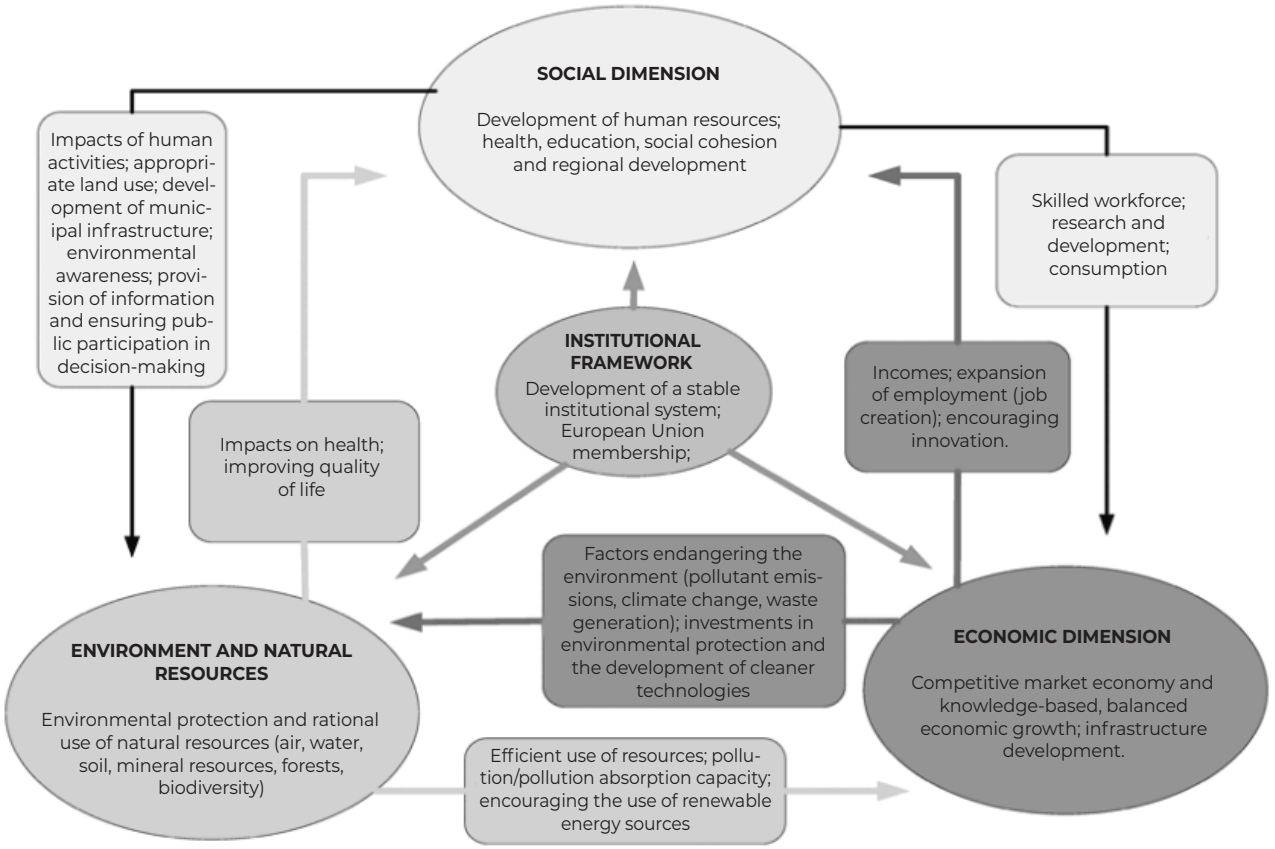


Figure 5. Functional relationships between the elements of the Sustainable Development Strategy[8]

[8] National Sustainable Development Strategy, Official Gazette of the Republic of Serbia, No. 57/2008.

1.3. BICYCLE TRANSPORT WITHIN URBAN MOBILITY

Bicycle transport is occupying an increasingly important place in the concept of sustainable urban mobility, which entails the development of transport systems aligned with the environmental, economic and social objectives of modern cities. In this context, the bicycle emerges as one of the most efficient, accessible and environmentally friendly means of transport. Above all, bicycle transport plays a key role in reducing the negative environmental impacts of transport. Unlike motor vehicles, bicycles emit no harmful gases such as carbon dioxide (CO_2), thereby directly contributing to the fight against climate change and to improved air quality in urban areas. They also reduce noise levels, which further improves citizens' quality of life. In terms of efficiency, bicycles are particularly suitable for short and medium distances, which account for a large proportion of daily journeys in cities. Their use helps reduce traffic congestion and relieves pressure on existing transport networks. Combined with public transport, the bicycle becomes an important component of intermodal transport, providing easier access to stations and greater flexibility of movement. From an economic perspective, bicycle transport requires considerably less investment in infrastructure than motorised forms of transport. Cycle paths, bicycle parking and supporting infrastructure are cheaper to build and maintain. Bicycle users also incur minimal transport costs, making cycling particularly suitable for a broad section of the population. The social dimension of bicycle transport is reflected in its positive impact on human health. Regular cycling encourages physical activity, reduces stress and helps prevent numerous diseases. Furthermore, the development of a cycling culture promotes social inclusion and more equitable access to mobility. However, the full integration of bicycle transport into urban transport systems requires planned action. This includes developing safe and connected infrastructure, educating road users, and adopting appropriate policies and strategies that favour sustainable modes of travel. Examples of good practice from European cities show that systematic support for cycling can significantly change the modal split in favour of sustainable forms of transport.

Bicycle transport is unquestionably an important pillar of sustainable urban mobility. Its role goes beyond being merely a means of transport, since it contributes to environmental protection, improved public health, lower costs and the creation of more humane cities. Its further improvement and integration into urban policies are therefore of key importance for the sustainable development of modern cities.

1.3.1. Conceptual Framework of the Urban Mobility Plan

The mobility of people and goods is an integral part of everyday life. Transport within cities is of particular importance and complexity because of the large population, high population density, the exceptionally diverse need of residents to move between locations within the city, the complexity and interconnection of roads and streets, and the resulting burden on transport infrastructure. Even the best transport-infrastructure system with a suitable range of transport modes will face insurmountable obstacles in practice unless there is a well-systematised database that makes it possible to organise citizens' mobility efficiently and in accordance with environmental requirements (Renouard, 2015). Such a database includes information on the existing condition and plans for transport infrastructure, an overview of all means of transport, traffic volumes on all urban routes with particular attention to overloaded routes, the operation of traffic-control systems, and especially the movement of people on transport routes. In seeking effective urban mobility, most researchers begin with the existing infrastructure, the availability of alternative means of transport and traffic regulation. Some authors approach efficient urban-mobility organisation from a different perspective, arguing that, in addition to optimising transport for citizens'

given needs and habits, an even greater effect can be achieved by reorganising the entire urban system and infrastructure so as to reduce residents' need for mobility (e.g. Firnkorn, 2015).

Urban transport can generally be divided into two groups: individually organised transport and public transport. Individual transport is arranged by residents themselves using their own or rented means of transport (car, motorcycle or bicycle), at times and along routes of their own choosing. Public urban transport carries groups of passengers either on fixed routes according to a predefined timetable (city buses, trolleybuses, trams, urban railways, underground railways, cable cars and vessels) or according to individual choice (taxi services).

Figure 6. Sustainable urban mobility: fewer cars, more bicycles and greenery[9]

Despite the availability of public transport, modern cities are burdened by cars, in some cases to a critical extent: congestion, traffic jams, overcrowding, slow traffic flow, enormous losses of time and pollution. People's motives are clear and simple: their own car is always close at hand and available whenever needed. Traffic jams and congestion in cities are a constant source of problems involving lost time and unnecessary costs. A large number of authors have addressed these issues (e.g. Anderson and Mohring, 1997; Liu and McDonald, 1998; Santos, 2000; Safirova and Gillingham, 2003; Weisbrod, Vary and Treyz, 2003; BTRE, 2007; European Conference of Ministers of Transport, 2007; CEBR, 2013; Bandara, 2017), and some studies have provided data on the potential costs of congestion compared with free-flowing traffic. The Texas Transportation Institute published estimates according to which these costs amounted to USD 4.1 billion for Chicago and USD 1.3 billion for Philadelphia in 2001 (Shrank and Lomax, 2001). The same institute estimated the corresponding cost for the entire United States in 2005 at USD 78.2 billion. A study by the American institute CityLab reported that these costs had risen to USD 305 billion in the United States by 2017. In the same year, the average time drivers spent waiting because of

[9] https://novizeleniprostori.rs/wp-content/uploads/2025/08/Odrziva-urbana-mobilnost-manje-automobila-vise-bicikala-i-zelenila-1024x576-1050x600.jpg

congestion was estimated at 102 hours in Los Angeles and 91 hours in New York. The situation was no better in other major cities around the world: the average annual waiting time per vehicle was also substantial in Moscow (91 hours), São Paulo (86 hours), Bogotá (75 hours), London (74 hours), Paris (69 hours), Istanbul (59 hours), Zurich (51 hours), Munich (51 hours), and elsewhere (Schneider, 2018).

To solve, or at least mitigate, the consequences of these problems, smart urban mobility must be organised successfully. This means offering solutions that provide easy access to public transport, advance information on the fastest routes, and the ability to use a combination of transport modes with a single registration or validation in order to reach the destination. As Debnath et al. (2013) state, introducing smart technologies for better urban-transport management is a common strategy. It is not enough merely to provide possibilities, however; public opinion must also be shaped appropriately. A change in public awareness is a prerequisite for changing habits and accepting solutions that guarantee rationality and the long-term sustainability of urban life as a whole.

For several decades, international organisations have addressed the sustainable development of urban settlements, with the problem of urban transport placed in the foreground. The UN Action Plan contained in the Vancouver Declaration on Human Settlements, adopted in 1976 (UN, 1976b), includes a section on transport and communications. On the basis of the results of the Habitat II conference held in 1992, the UN General Assembly adopted a declaration planning an action plan that was to include programmes and subprogrammes relating to new technologies in urban transport (UN, 1992). In preparation for the Habitat III conference, the UN organised a thematic meeting at which the Montreal Declaration on Metropolitan Areas was adopted. The declaration highlights the growing importance of transport infrastructure in a situation where, under conditions of increasing urbanisation and the creation of new suburbs, cities become parts of large metropolitan areas and transport development is necessary both for the movement of goods and for passenger travel over greater distances. It establishes the position that transport and population mobility occupy a central place in the sustainable development of large cities. Accordingly, it emphasises the free mobility of people and goods, while requiring safe transport infrastructure that is accessible to all, respects environmental protection and contributes to the well-being of the urban community. One section of the declaration is devoted to the future of transport in large cities and stresses the importance of non-motorised mobility through the planning and promotion of pedestrian and cycling infrastructure.

The institutions of the European Union continuously monitor conditions and trends within the Union and worldwide and, in response to change, adopt a large number of documents regulating relations within the Union and with the rest of the world. All official European Union documents are published on the EUR-Lex website. By October 2018, the site had accumulated 111,771 documents directly or indirectly related to transport activities, of which 77,122 were legislative documents. The regulations cover a wide range of issues relating to the transport of passengers and goods, including the development of the trans-European transport network, the Union's single transport system, a single railway network, common electronic toll collection, a single multimodal passenger-information service, a unified information system for vehicle servicing and maintenance, transport infrastructure, means of transport, traffic regulation, driving licences, passenger rights, public passenger transport, transport innovation, intelligent transport systems, standardisation of intelligent transport systems in urban areas, the energy efficiency of road vehicles, fuel types and quality, the use of alternative fuels, hydrogen-powered motor vehicles, reductions in harmful exhaust emissions and vehicle noise, environmental protection, and other matters. The most important EU documents dealing with transport are the founding Treaty (1957), the White Paper (2001), the Green Paper (2007), the Action Plan on

Urban Mobility (2009), the White Paper (2011), the European Commission Communication (2013), and the Annex to the Communication - A Concept for Sustainable Urban Mobility Plans (2013).

In 1957, Belgium, France, Italy, Luxembourg, the Netherlands and West Germany signed the Treaty of Rome establishing the European Economic Community, which entered into force on 1 January 1958. The treaty provided for the reduction of customs duties, the creation of a customs union, the establishment of a single market for goods, labour, services and capital, the introduction of common agricultural and transport policies, and the establishment of the European Social Fund; the European Commission was established at the same time. Transport issues were addressed in Articles 74-84 of the treaty and concerned the creation of common rules applicable to transport within the Union, with particular emphasis on harmonising transport prices, tolls and charges. The adopted rules applied to rail, road and inland-waterway transport, while the European Commission planned to introduce rules for maritime and air transport at a later stage.

The principal document that served as the basis and starting point for implementing the European Union's medium-term transport policy was the White Paper - European Transport Policy for 2010: Time to Decide, adopted by the European Commission in 2001. The Commission considered that the Member States had not sufficiently complied with rules dating back to the Treaty of Rome and therefore decided to adopt this new document. Its basic premise was: ‚Transport is a key factor in the modern economy; however, there is a permanent contradiction between society, which demands ever greater mobility, and public opinion, which is becoming increasingly intolerant of delays and the poor quality of transport services' (CEC, 2001). The Commission concluded that the solution lay not only in investment in new infrastructure, but in developing an optimal transport system that met the requirements of sustainable development from both a social and an environmental perspective. The first part of the document concerns the balanced development of different transport modes and analyses the improvement of road transport quality (restructuring, regulation, controls and penalties), the revitalisation of rail transport (integration into the international market, optimal use of infrastructure and modernisation), control of air-transport development (air-route saturation, airport capacity and utilisation, the relationship between air transport and environmental protection, and security measures), and the creation of an interconnected maritime, inland-waterway and rail network. The second part contains an action plan for eliminating transport bottlenecks (multimodal freight corridors, high-speed passenger transport and financing through common funds). The third part addresses users of transport services (safety and accidents, the costs of using transport infrastructure, harmonisation of fuel taxes, integrated passenger-ticketing systems, baggage handling, journey continuity, passenger rights and obligations, the quality of public services, and urban transport). The fourth part discusses the challenges of transport globalisation.

Figure 7. Batteries at the crossroads: What does the new EU regulation mean for cycling and recycling?[10]

The above-mentioned 2001 White Paper contains a separate chapter devoted to the rationalisation of urban transport. The inadequate development of public transport is identified as the main source of urban-mobility problems, as a result of which cars, as individual means of transport, have gained a virtual monopoly. The problem is intensified by the fact that cars not only offer citizens greater freedom and comfort of movement, but residents are unfortunately also concerned about insufficient safety on public transport, particularly in certain parts of cities or at certain times of day. More intensive traffic leads to increased fuel consumption, accidents, pollution and consequent illness.

On 25 September 2007, the European Commission adopted a special document entitled Green Paper - Towards a New Culture for Urban Mobility (CEC, 2007). The importance of urban mobility lies in the fact that urban areas are home to the majority of the European Union's population (60%) and generate around 85% of the Union's total gross domestic product. European cities differ from one another, but all face similar mobility problems and therefore seek common solutions. According to Commission estimates, around 1% of GDP is lost each year because of traffic congestion and the resulting pollution and traffic accidents in EU cities. During preparation of the document, the Commission conducted public-opinion research through questionnaires and the internet, organised two conferences and four workshops, and accepted suggestions from the European Economic and Social Committee. According to the research results, the main objectives of modernising urban transport include the optimal combination of different urban transport modes for collective travel (train, tram, underground railway, bus and taxi) and individual travel (car, motorcycle, bicycle and walking), guaranteeing mobility, quality of life and environmental protection, and harmonising passenger and freight traffic in urban conditions. The activities required to create a new culture of urban mobility require financial investment, for which local authorities are responsible. Part of

[10] https://ekocikl.rs/wp-content/uploads/2026/03/Gemini_Generated_Image_ij7ntkij7ntkij7n.jpg

the funding is to be provided from local sources (taxes, parking charges, budgetary resources and non-governmental organisations), and part from EU funds such as the Structural Funds, the Cohesion Fund and European Investment Bank financing. According to 2007 data, the Bank granted loans of EUR 2.5 billion annually for urban-mobility programmes.

At the time the Green Paper was adopted, the European Union also supported Member States through its projects:

- The Seventh Framework Programme for Research and Technological Development (FP7) included activities relating to urban mobility, energy issues in transport, clean urban transport and sustainable mobility for all citizens.
- The CIVITAS Initiative (City Vitality and Sustainability) is a programme, in operation since 2002, for introducing transport policies and technologies that provide more sustainable, cleaner and more energy-efficient transport systems in cities. By 2007, the programme had provided financial assistance to 36 EU cities in a total amount of EUR 100 million.
- The Competitiveness and Innovation Programme (CIP) included the Intelligent Energy Europe Programme (IEE), which contained the ALTENER and STEER subprogrammes supporting initiatives related to new and renewable energy sources, alternative fuels and energy-efficient transport.

At the end of the document, the Commission issued a public call for the views of all interested parties by 15 March 2008, with the aim of shaping a vision for the future of EU urban-transport policy.

On 30 September 2009, the European Commission adopted the Action Plan on Urban Mobility (CEC, 2009). The plan was based on research by various EU institutions, analyses of opinions submitted by citizens in response to the public call, a report by the Gallup public-opinion research institute (Gallup, 2007), and the official report of the Directorate-General for Energy and Transport (COM, 2009/279).

At the request of the EU Directorate-General for Energy and Transport, the Gallup Institute surveyed approximately 26,000 citizens in the Union's 27 countries in May 2007, by telephone or face to face. The results were published in July of the same year in the EU Flash Eurobarometer series under the title Attitudes on Issues Related to EU Transport Policy (Gallup, 2007). The questions concerned the following matters: comparison of car use and public transport; understanding the relationship between the type and manner of vehicle use, on the one hand, and environmental protection and traffic congestion, on the other; opinions on how to improve traffic conditions; measures to reduce harmful exhaust emissions; opinions on environmental damage caused by transport and who should bear the resulting costs; and opinions on security controls at airports and on the rights and obligations of air passengers. An important finding indicating the areas requiring special attention in future transport policy was that, on average, more than half of the EU population - specifically 53% - used motorised transport (a car or motorcycle) for individual urban travel, 23% used non-motorised mobility (cycling or walking), and public transport was least popular, being used by only 21% of residents. In addition, the great majority of residents (90%) believed that measures were necessary to improve transport in their part of the city. Within this group, 49% saw the solution in improving public transport, including regular departures, longer operating hours, more routes, more stops closer to residential areas, and improved security and safety on urban public transport. Nevertheless, despite all possible improvements, as many as 22% of respondents stated that they would under no circumstances give up using their cars in order to switch to urban public transport.

The official report of the Directorate-General for Energy and Transport, A Sustainable Future for Transport: Towards an Integrated, Technology-led and User-friendly System (COM, 2009/279), defines the objectives of implementing sustainable transport in the European Union: high-quality, safe and secure transport; an integrated transport network of elements (infrastructure, vehicles and equipment, information and communication technology, services, and operational and administrative procedures) maintained to a high standard; environmentally responsible transport; retention of the EU's leading position in transport technology innovation, including intelligent transport systems for roads (ITS), the European Rail Traffic Management System (ERTMS) and the Single European Sky ATM Research programme (SESAR), all supported by the Galileo satellite system; protection and development of human capital; a fair and intelligent transport-pricing system; and improved accessibility. The instruments planned for achieving these objectives are the maintenance, development and integration of different modal transport networks; the creation of appropriate funding sources for sustainable transport; technology and global innovation in transport; a legal framework, market openness and stronger competition; effective and well-coordinated action by public authorities; and a unified approach by all EU countries.

The European Commission's 2009 Action Plan on Urban Mobility (CEC, 2009) defines a programme of activities supporting sustainable urban transport. It covers the following themes: promoting integrated transport policies; placing citizens at the centre; urban transport compatible with environmental protection; funding; sharing experience and knowledge; and optimising urban mobility. Deadlines were established for the implementation of individual activities aimed at optimising urban mobility.

The activity on this list entitled ‚Preparation of Sustainable Urban Mobility Plans for Cities' in fact represents the most important message to local authorities for achieving the stated objectives. The European Union establishes the framework, formulates principles and rules, and adopts regulations that can be implemented in practice within individual EU cities. In 2011, there were 829 cities in the EU, including Iceland, Norway and Switzerland. Of these, 616 participated in the Sustainable Urban Mobility Plan system.

A new transport White Paper was adopted in 2011 under the title Roadmap to a Single European Transport Area - Towards a Competitive and Resource-Efficient Transport System (CEC, 2011). The document contains the European Commission's decision to adopt forty specific initiatives for building a competitive transport system in Europe that would increase mobility and employment, while removing all obstacles to development in key areas and preventing growth in fuel consumption. The planned measures were intended to reduce Europe's dependence on imported oil and to cut carbon-dioxide emissions from exhaust gases by 60% by 2050. To achieve these objectives, all conventionally fuelled vehicles were to be eliminated from cities by 2050; the share of sustainable low-carbon fuels in aviation was to be increased to 40%; emissions in shipping were to be reduced by 40%; and half of medium-distance intercity passenger and freight transport was to be shifted from road to rail and waterways. On 1 July 2016, the European Commission published a working document on the implementation to date of the plans set out in the White Paper, The Implementation of the 2011 White Paper on Transport (CEC, 2016). The report emphasised that the negative externalities of transport remained problematic, that unresolved social issues were a major obstacle to creating a single European transport area, and that the necessary conditions for smart transport had still not been established in terms of standardisation, interoperability and data exchange.

The European Commission Communication Together towards Competitive and Resource-Efficient Urban Mobility (CEC Urban Transport, 2013), adopted on 17 December 2013, promotes the

preparation of sustainable urban mobility plans within a broader urban and territorial strategy in every European city, through cooperation between different policies and stakeholder groups and taking into account transport, land use, spatial planning, environmental protection, economic development, social policy, health, road safety and other fields. The document states that the European Commission planned to publish an appropriate platform for preparing sustainable urban mobility plans and to provide advisory and financial support to European cities for this purpose.

The annex to the European Commission's 2013 Communication contains the above-mentioned platform, entitled A Concept for Sustainable Urban Mobility Plans (CEC Annex, 2013), published on 17 December 2013. The main objective of the plans is to improve access to urban areas while providing high-quality and sustainable transport to and within the urban area, understood as the functional city and its hinterland rather than an administrative region. The concept envisages the preparation of plans by the management of individual cities for periods of three to ten years, with sources of funding and the responsibilities of decision-makers and implementers clearly defined. The preparation and implementation of a plan should include an analysis of the current situation, the definition of objectives and monitoring of implementation performance. Sustainable urban mobility plans are expected to balance the use of different transport modes and facilitate a shift towards those providing a higher level of sustainability. Particular topics to be addressed include public transport, non-motorised transport, intermodality, urban road safety, optimisation of the existing urban road network, urban logistics, mobility management and intelligent transport systems. In January 2014, the European Commission published Guidelines: Developing and Implementing a Sustainable Urban Mobility Plan (EC Guidelines, 2014), which describe in detail the procedures and activities related to preparatory work, the rational setting of objectives, and the development and implementation of the plan.

Within the European Commission, transport matters are the responsibility of the Directorate-General for Mobility and Transport and its associated agencies: the European Maritime Safety Agency (EMSA), the European Aviation Safety Agency (EASA), the European Railway Agency (ERA), and the Innovation and Networks Executive Agency (INEA). The Directorate-General for Mobility and Transport deals with a range of transport-related issues, including the theme ‚Clean Transport, Urban Transport' (EC Transport, 2018). The following matters are addressed:

- Use of bicycles in urban mobility
- Strategy for the use of alternative fuels for transport and clean and energy-efficient vehicles', in accordance with the EU document Directive on the Promotion of Clean and Energy-Efficient Road Transport Vehicles (EC Directive, 2013), which promotes the introduction of biofuels, hydrogen fuel and electric propulsion.
- European initiative for the deployment of clean vehicles', in accordance with the EU document Declaration of Intent on Promoting Large-Scale Deployment of Clean, Alternatively Fuelled Buses in Europe (EC Declaration, 2017).
- ‚Urban mobility', with the following published groups of documents:

  Urban Mobility Package, comprising the following:
  - ✓ 2013 Communication
  - ✓ Annex to the 2013 Communication
  - ✓ Working document: Urban Logistics
  - ✓ Working document: Regulations on Access to Urban Areas
  - ✓ Working document: Developing Intelligent Transport Systems in Urban Areas
  - ✓ Working document: Urban Road Safety

Urban mobility actions:

- ✓ Sustainable Urban Mobility Plans
  – Annex to the 2013 Communication
  – 2014 Guidelines
  – Link to the ELTIS portal (Urban Mobility Observatory)
- ✓ Public transport
  – Link to the ELTIS portal
  – Link to the CIVITAS portal (a network of European cities seeking cleaner and better transport)
- ✓ Urban logistics
- ✓ Green zones – urban areas closed to motor vehicles
- ✓ Alternative fuels for sustainable mobility in Europe
- ✓ 2009 Action Plan on Urban Mobility
- ✓ 2007 Green Paper on Urban Mobility
- ✓ European Commission support

European Commission financial support for the development of urban mobility is diverse and includes the following sources:

Within EU cohesion policy:

1. European Structural and Investment Funds
2. JASPERS (Joint Assistance to Support Projects in European Regions)
3. INTERREG Europe 2014-2020 - support for interregional cooperation
4. URBACT III (European Territorial Cooperation Programme for Sustainable Integrated Urban Development in Cities across Europe)
5. Innovative actions in sustainable urban development

From the European Investment Bank:

1. Loans and guarantees
2. ELENA (European Local Energy Assistance)
3. JESSICA (Joint European Support for Sustainable Investment in City Areas)
4. European Energy Efficiency Fund

Other funding sources:

1. LIFE (Environment and Climate Action)
2. Connecting Europe Facility funding programmes
3. Horizon 2020 (EU Research Framework Programme)
4. European Fund for Strategic Investments
5. Projects related to the use of hydrogen as a fuel

1.3.2. Objectives and Effects of Sustainable Urban Mobility

The mobility of people is an integral part of everyday life, while its organisation and implementation are associated with a range of problems and obstacles that require a systematic approach and comprehensive solutions. Organising the transport of people and goods in urban conditions involves numerous issues connected with infrastructure, means of transport, people's needs and environmental protection. Sustainable urban mobility should provide all interested users with unrestricted access to means of transport and infrastructure facilities and should enable journeys to be made on time, comfortably, safely and at acceptable cost.

The most important positions concerning the objectives and results of sustainable urban mobility are contained in official EU documents. The 2001 White Paper (CEC, 2001) emphasises the free flow of traffic in cities and environmental protection. As alternatives, it proposes the introduction of clean vehicles with low emissions and reduced noise, as well as the development of high-quality public passenger transport. Favourable effects are expected from introducing stricter anti-pollution standards for motor vehicles and fuel quality. Further action is envisaged to introduce alternative fuels in urban transport, including natural gas, biodiesel, sulphur-free diesel, hydrogen, and electric and hybrid propulsion, initially for public-transport vehicles such as city buses and subsequently for cars. High-quality urban public transport requires well-developed infrastructure, including metro lines, trams, cycle paths and traffic lanes reserved for public transport, as well as improved service quality in terms of punctuality, speed, comfort and passenger information. Urban traffic congestion can be reduced through additional measures by city authorities or company management, such as partial or full financing of public-transport costs, reducing the number of parking spaces, imposing high charges on cars using certain urban routes and parking areas, and prohibiting car traffic on particular routes.

The 2007 EU Green Paper (CEC, 2007) sets out activities to create a new culture of urban mobility in EU Member States. According to the document, these activities have clearly defined objectives and a range of expected effects. Action must be taken to combat traffic congestion. Possible solutions include promoting walking and cycling, optimising car use and organising freight traffic more effectively. Pollution is to be addressed through the application of new technologies; giving preference to the procurement of public-transport vehicles and fuels from manufacturers that observe the highest environmental standards throughout the production process, known as green procurement; environmentally responsible driving, including additional driver training, reduced fuel consumption, electronic driver-assistance devices and improved traffic signalling; and traffic restrictions, such as banning private vehicles from certain parts of a city. Increased demand for passenger and freight transport in cities cannot be met solely by expanding transport infrastructure because of limited space and environmental-protection requirements. A possible solution for effective urban-mobility management lies in making better use of Intelligent Transport Systems (ITS). Processing traffic data can provide information and support to all road users. Personal mobility is a key factor in the independence of urban residents. Urban transport should therefore be organised so that everyone, including children, older people and persons with limited mobility, has access to public transport. Road safety must be ensured, as must personal security on public-transport vehicles, at stops and in the streets. The planned measures include additional training for road users to encourage safer and more considerate driving, regulations on safety equipment, modernisation of roads and pedestrian and cycle paths, improved street lighting, and strengthened police patrols. New traffic-planning and management methods and tools must also be applied, requiring the training of transport employees, while public campaigns are needed to promote changes in mobility habits.

Vermote and Lens (2009) begin from the premise that sustainable transport is a prerequisite for sustainable development in general. They examine various environmental, economic, social and transport indicators of urban-transport sustainability and identify objectives to be achieved through city-management activities. These include reducing air pollution and noise levels to protect the health of urban residents; limiting the share of total urban territory used for traffic and parking, estimated at around 50% in the EU; improving road safety on urban streets, particularly for pedestrians and cyclists; eliminating social exclusion by ensuring mobility under equal conditions for members of households without a car, which account for an average of 40% of EU households, and by facilitating access to public transport for children, older people and persons with disabilities; and minimising congestion and delays in urban traffic through an appropriate information base, traffic-flow monitoring and adapted traffic signalling. Kelemen-Erdős (2012) sees the solution to accumulated urban-mobility problems in strengthening urban public passenger transport. In addition to suitable infrastructure and vehicles, this requires public education to raise awareness of the need to rationalise energy consumption and protect the environment. Barua et al. (2013) propose the modal integration of different transport methods in cities to create a coordinated urban public-transport system, including an integrated network of routes and timetables, convenient transfers between modes, common ticketing and an integrated passenger-information system. The benefits would include reduced congestion and improved urban passenger transport. Debnath et al. place smart technology at the core of the smart urban-transport system. This is an independent and automatic corrective system with minimal human involvement, consisting of sensors, command and control units and actuators that record and process data, make decisions, undertake corrective action and communicate. Hosu et al. (2015) propose an integrated centralised information platform for creating a smart urban public-transport system. Lageland (2015) sees rational and sustainable urban mobility as requiring the gradual, and ultimately drastic, reduction of private-car use in favour of public transport, cycling and walking. This is also the subject of the work of Matan et al. (2015), who examine the effect of the predominant mode of urban mobility, reflected in the level of physical activity, on citizens' general health, comparing the effects of cycling, walking and public transport with those of private-car use. In the study Urban Mobility in the Smart City Age (Aoun, ed., 2015), the objectives of smart urban transport are defined as reducing fuel consumption, thereby improving environmental protection; reducing traffic congestion, thereby lowering road-user frustration; and introducing a coordinated, efficient and effective system for operating and maintaining the transport system, benefiting both transport operators and passengers and reducing the burden on transport infrastructure in densely populated urban areas.

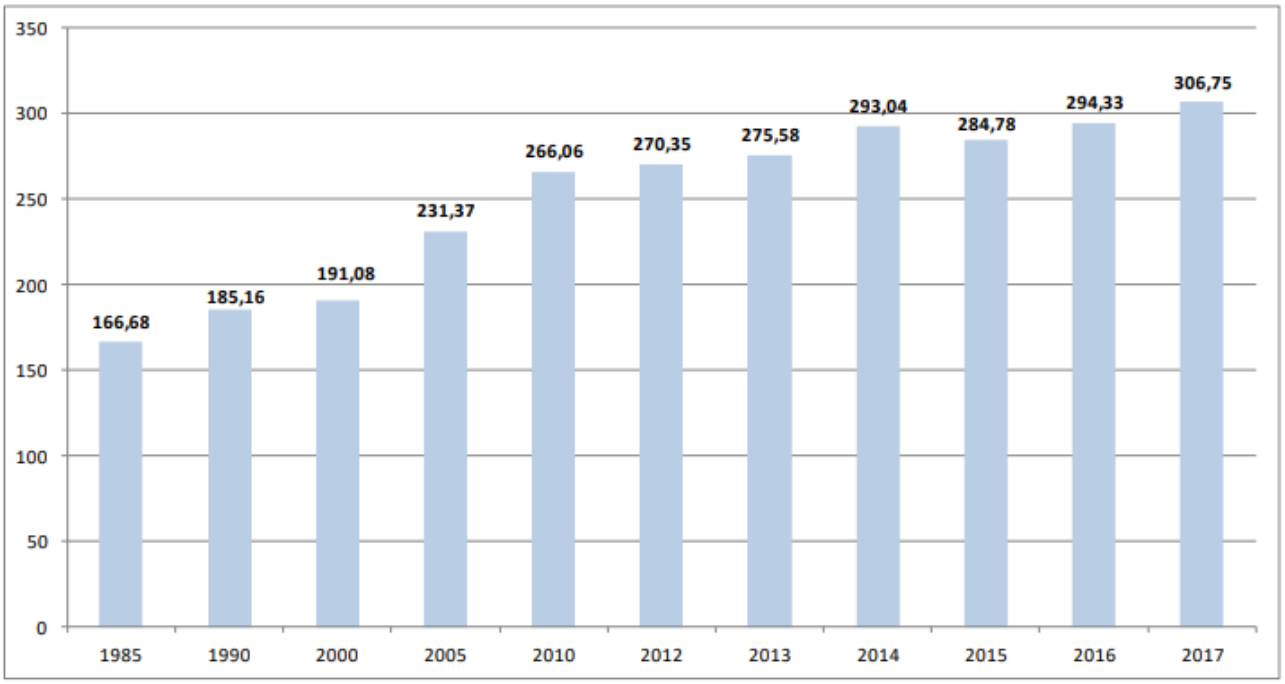


Figure 8. Change in the level of motorisation in the City of Belgrade[11]

The objectives to be achieved through sustainable urban mobility can be defined as follows:

1. Ensuring the free flow of traffic without congestion or delays, thereby minimising travel time and the cost of transporting people and goods.
2. Meeting all passenger- and freight-transport requirements without unnecessary waiting.
3. Providing information to all road users, enabling users of transport services to make the most rational decisions concerning routes, combinations of transport modes and journey times.
4. Ensuring free and direct access to transport routes and means of transport for all road users, thereby meeting the needs of every social group within the population.
5. Ensuring public and personal security for all road users.
6. Ensuring a high level of safety for all road users.
7. Ensuring the comfort and satisfaction of users of transport services.
8. Reducing fuel consumption, exhaust emissions and noise levels, thereby contributing to environmental protection and improving public health.

These objectives are intertwined and interdependent. The achievement of one objective is conditional on the achievement of another and, at the same time, contributes to reaching the next.

[11] Urban Development Planning Centre, SUMP for the City of Belgrade, Official Gazette of the City of Belgrade 60/19 (2019).

1.3.3. Factors Required to Achieve Sustainable Urban Mobility

To implement sustainable urban mobility and achieve the defined objectives, the following are necessary:

1. Completion of high-quality urban transport infrastructure for different transport modes while minimising the use of urban land. Transport infrastructure should be supported by an appropriate electronic traffic-monitoring and control system and by traffic-signalling equipment automated to the required degree.
2. Use of means of transport whose operating technology and consumption of fuel and energy meet environmental requirements.
3. Combination of different transport modes and priority for public transport, while favouring cycling and walking for individual mobility.
4. Directing the manner in which mobility is carried out by closing routes or parts of the city, creating green zones, restricting car use in certain areas, or introducing high traffic and parking charges.
5. Collecting data and creating an information base on roads, vehicles and the movement of people, to be used by professionals responsible for transport organisation, transport-service providers and users - the citizens.
6. Use of information and communication technologies for the integrated organisation of the city's transport system and for traffic management.
7. Development of citizens' traffic culture and increased awareness of the need to protect the environment, which can be achieved by changing behaviour and using environmentally and economically favourable modes of transport.

1.3.4. The Role of the TEN-T Network and Sustainable Urban Mobility Planning in the Development of a Modern Transport System

Modern transport systems face numerous challenges, including growing urbanisation, an increased need for the mobility of people and goods, and the imperative of environmental protection. In this context, the European Union developed the concept of the TEN-T network, the trans-European transport network, as a key instrument for connecting the European area through efficient, sustainable and multimodal transport. In parallel, the concept of the **Sustainable Urban Mobility Plan** (SUMP) was developed with the aim of improving mobility in urban areas while respecting the principles of sustainability.

The TEN-T network is a comprehensive infrastructure system that includes roads, railways, ports, airports and intermodal terminals. Its fundamental purpose is to enable the uninterrupted movement of people and goods throughout Europe while reducing traffic congestion and improving territorial cohesion. The TEN-T structure is divided into a core network and a comprehensive network, with the core network encompassing the most important transport corridors of strategic importance to the European Union. Urban nodes - cities that represent key points for connecting different modes of transport - are of particular importance within this network.

The role of cities is particularly evident in the obligation to prepare sustainable urban mobility plans. These plans are strategic documents that integrate the needs of the population and the economy with the aim of improving quality of life in urban areas. The SUMP approach covers the entire functional urban area, including daily commuting zones, and requires coordination between different levels of government and sectoral policies. An important element of this approach is the

involvement of citizens and stakeholders in the planning process, ensuring transparency and the effective implementation of measures.

The revised TEN-T Regulation further emphasises the importance of sustainable urban mobility by requiring urban nodes to adopt SUMPs and monitor urban-mobility indicators. These indicators cover sustainability, safety and accessibility and enable continuous monitoring of transport-system performance. In this way, the strengths and weaknesses of existing solutions can be identified, enabling timely corrective measures and improvements to the mobility system.

Particular emphasis is placed on developing zero-emission transport, increasing the share of public transport and active modes of travel such as cycling and walking, and improving urban logistics. These objectives directly contribute to reducing the negative environmental impact of transport and improving quality of life in cities. At the same time, better connections between urban and rural areas contribute to more balanced regional development.

Although it is not a member of the European Union, the Republic of Serbia plays a significant role within the extended TEN-T network, primarily through key pan-European corridors. Integration into this system enables the improvement of national transport infrastructure, greater economic competitiveness and stronger regional connectivity. In this respect, applying the principles of sustainable urban mobility represents an important step towards alignment with European standards.

In conclusion, the synergy between the TEN-T network and sustainable urban mobility planning forms the foundation for the development of a modern, efficient and sustainable transport system. While TEN-T provides the infrastructure framework at European level, SUMP enables its effective implementation at local level, thereby achieving a balance between economic development, social needs and environmental protection.

The theoretical foundations of the OPTI-BIKE 3 project draw on the above achievements, and the project represents a segment of the practical implementation of a sustainable relationship with nature and healthy, non-motorised human movement in the service of improving quality of life in the urban environment.

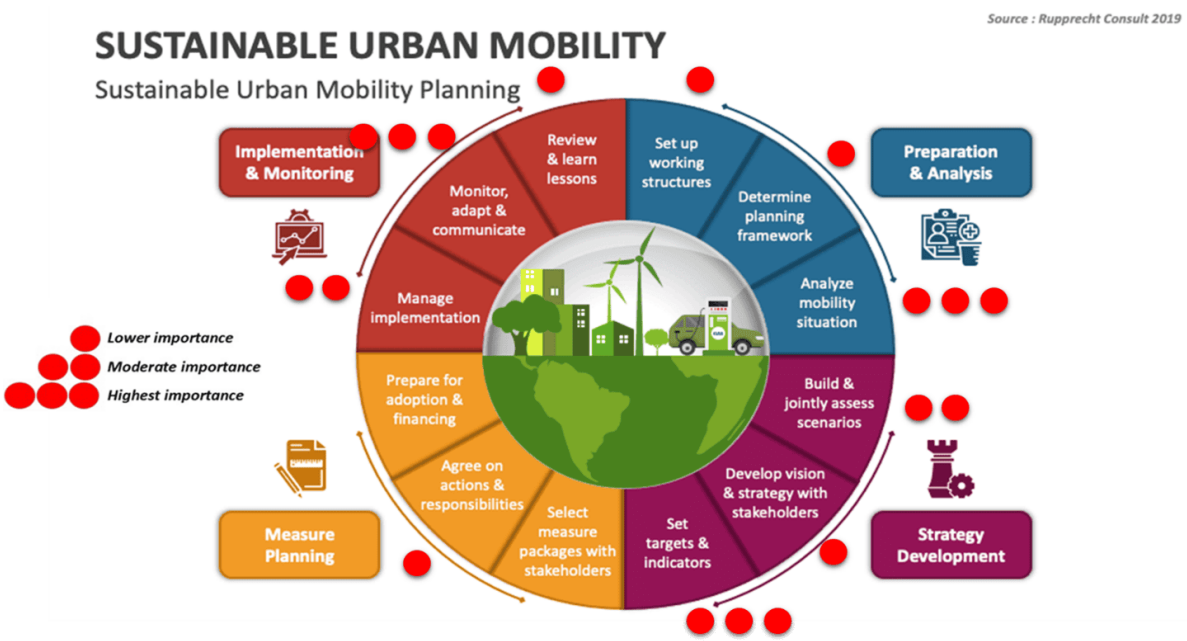


Figure 9. Sustainable Urban Mobility Planning, photo by Rupprecht Consult

CHAPTER II

2. The Role of Cycle Tourism in the Tourism Development of the Microregion

2.1. Definitions of Terms

2.1.1. Key Terms

Sports recreation is a freely chosen physical-culture activity undertaken during leisure time according to personal preference and need. It includes elements of professionally organised recreation and enriches people both physically and mentally. It does not consist solely of entertainment and leisure activities, but also involves regular, systematic physical exercise.

Recreation is a broader concept than sports recreation and refers to the use of leisure time in a way that restores both body and mind. It also includes activities that are not sporting in nature, such as travelling, watching television, listening to music, dancing and reading books. Recreation is also associated with physically active rest, owing to the increasingly sedentary way of life and the need to spend leisure time in a meaningful manner. The word itself comes from Latin and means restoration, refreshment, amusement and creation.

Cycle tourism (bicycle tourism) is a form of active tourism based on using the bicycle as the principal means of transport for travelling, exploring destinations and experiencing the surrounding environment. It combines physical activity, environmental awareness and cultural discovery, giving travellers a sense of freedom, a slower pace of movement and opportunities to stop and rest while enjoying nature, local culture and contact with residents.

The key characteristics of cycle tourism are:

- the bicycle as a means of transport: unlike sport cycling, the bicycle is used primarily for travelling between tourist attractions;
- environmental sustainability: it is an environmentally friendly form of tourism;
- experiencing the destination: the focus is on discovering hidden places, landscapes and cultural heritage;
- a combination of physical activity and rest: it provides adventure, exercise and a distinctive experience.

It is therefore **a form of travel involving a bicycle, whose purpose is the enjoyment and observation of landscapes and urban attractions.**

LOHAS tourists: ‚Lifestyles of Health and Sustainability' tourists, a distinct group of cycle tourists with clearly defined attitudes, needs and approaches to travel as a way of life.

Tourist route: a physical section of road, a marked and tangible itinerary.

Tourist tour: a form of pre-planned and organised movement or travel that includes visits to a sequence of designated places, particularly as part of an organised group accompanied by a guide.

Thematic tourism is travel for recreation, experiences and participation in various activities, driven by the particular and specific interests of an individual or group; cycle tourism is one of its forms.

Itinerary: a travel plan or description of a journey, with detailed stops, distances, places for breaks, roads and attractions.

Destination: the ***word destination*** (from *the Latin* destinatio) means the *place to* which tourists travel and where they stay for several days.

Sustainable tourism: a concept of travel that takes account of the care and responsible use of all local resources so that they can be renewed. This form of tourism seeks to prevent the degradation of resources while still providing a comprehensive tourism experience.

Landscape: scenery or countryside with its own distinctive features, producing a particular visual impression and the atmosphere of a unique story; it is exceptionally important to cycle tourists.

Tourism valorisation of resources: valorisation is a professional and methodological process for determining or assessing the value of attractions, facilities, phenomena, areas, natural assets and landscapes for tourism purposes. In addition to their inherent characteristics, these resources are of interest to tourists and generate economic benefits.

2.1.2. Methodology and Tools Used in the Study; Hypothesis, Vision, Mission and Strategic Directions for Cycle Tourism in the Region

The aim of the study is to identify local and cross-border cycling tours on existing cycle paths and roads, together with a comprehensive range of services and available facilities, that can be combined into a tourism offer.

The outcome of the study is the identification of resources that can be valorised through newly designed thematic routes, in conjunction with existing tourist attractions, in order to create an integrated regional cycle-tourism product. The study provides conclusions and recommendations concerning the future development of cycle tourism, both in terms of infrastructure and the enhancement of service quality.

The study will use available secondary sources of information and the normative method, including observation, comparison and examination of secondary data, analysis and synthesis, inductive and deductive reasoning, as well as the results of earlier projects related to cycle tourism in the region.

The vision for the development of cycle tourism in the cross-border region and the project's local destinations is:

- to attract the LOHAS target group from the wider region;
- to encourage residents of the cross-border region to make regular use of the individual routes in their leisure time;
- to encourage international cycle tourists arriving via EuroVelo routes to spend more time exploring the project routes;
- to promote the continued construction of cycle paths in the urban area and on the outskirts of the city, connecting and expanding the network of paths.

The mission of the study is to identify the target groups of cycle tourists, their needs and wishes, the services that are important for this form of tourism, the cycle routes in the cross-border region, and opportunities to create integrated tourism products.

The strategic directions for the development of cycle tourism in the cross-border region should include:

- promoting the defined cycle routes among the target groups;
- developing modern marketing and providing information to the target groups;
- developing the services required for cycle tourism and broadening their range;
- introducing service-quality standards for cycle tourists based on EuroVelo recommendations;
- installing appropriate signage along the routes and maintaining it;
- constructing cycle paths.

Hypothesis: the OPTI-BIKE 3 project, based on the Tompa-Kelebija (Hungary)-Kelebija (Serbia)-Subotica-Bački Vinogradi-Ásotthalom cross-border region, has historical, geographical, cultural and landscape significance. In addition to the resources already in use, other resources suitable for tourism valorisation can attract a greater number of cycle tourists. Shared characteristics provide the basis for developing a comprehensive cycle-tourism offer. The defined cycle routes will strengthen ties among local residents and attract international cycle tourists.

2.1.3. Cycling and Recreation in General and Opportunities for Tourism Valorisation in the Microregion

The bicycle serves as a means of transport and tourist travel and offers numerous advantages:

- it is economical, suitable for all age groups and enables relatively quick travel to both nearby and more distant destinations;
- during urban traffic congestion, parking problems are avoided; six bicycles can fit into an area of 1.6 m^2, they occupy little public space, and only bicycle racks are required;
- cycling in nature has health benefits: it improves cardiovascular function, supports better metabolism, delivers more oxygen to the body, reduces stress and stimulates immune-cell activity;
- it has positive effects on social interaction and communication and brings people together;
- bicycle maintenance is not complicated.
- There are several types and models of bicycles suitable for tourist travel:
- road bicycles, with several gears;
- city bicycles, suitable for carrying lighter shopping;
- cruiser bicycles, with a modern retro design;
- fixie or fixed-speed bicycles, with fixed gearing;
- BMX bicycles;
- MTB or mountain-cross bicycles;
- electric bicycles and similar models.

Cycle tourism is a form of active recreation aimed at enjoyment, visiting different destinations and exploring attractions and unusual places. There are more than one billion bicycles worldwide, twice as many as cars. Cycling has been an Olympic sport since 1896. In addition to conventional mechanical bicycles, electric bicycles are also used. Their popularity is growing worldwide, and charging stations and rental points have consequently been established. Paris has more than 20,000 electric bicycles at docking stations, while Hangzhou in China was the first city in the world to operate such a system with 60,000 bicycles. Electric bicycles are becoming an indispensable part of cycle tourism.

The tourism valorisation of the cross-border microregional area for cycle tourism includes an assessment of its geographical position, aesthetically valuable natural settings, the level of facilities available to meet the needs of potential tourists, and the safety and security of selected local routes and facilities. Cycle tourism has the potential to be combined with other forms of tourism and tourism products that already exist and are developed in the microregion, such as gastronomic and wine routes and eco-routes.

2.2. Tradition and Historical Points of Interest Relating to Cycling in the Microregion

The bicycle became popular in the microregion as soon as the velocipede appeared on the streets of Subotica. The velocipede is an archaic form of bicycle; the word derives from the Latin velox (fast) and pes (foot), literally meaning ‚swift foot'. The models of the time required considerable riding skill. The design of the velocipede gradually evolved, and today there are numerous models for different age groups and surfaces, ranging from racing, mountain, velodrome, biathlon and cyclo-cross bicycles to stylish bicycles for urban riding.

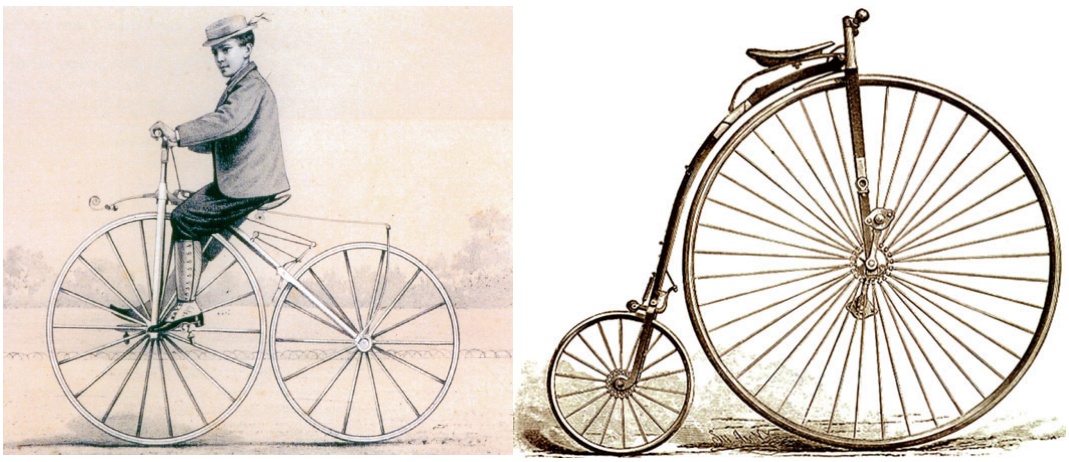


Figure 10. Velocipedes

A great admirer of the ancient spirit of the Olympic Games, Lajos Vermes - an athlete, innovator, competitor and educator - organised sporting competitions at Palić in 1880 under the name ‚Palić Olympics'. In addition to various sporting disciplines, he organised a cycling competition. In 1884, Vermes built a 225-metre ellipsoidal competition track from his own funds, followed in 1891 by a circular asphalt cycling and athletics track. Part of this track still exists in Vermes Park at Palić. At the time, only London and Leipzig had comparable tracks. After acquiring a velocipede, he modified

it and designed a jointed tandem. He also used a bicycle with a dynamo to generate electricity so that meetings could be held under artificial light. He organised the first cycling routes from Palić to Novi Sad, Bosanski Šamac and Rijeka. Taking advantage of the frozen surface of Lake Palić, he devised bicycle-skating competitions on the ice and, during the summer, bicycle races on sand. He frequently won these competitions.

Journalist István Valihora collected photographs, texts and other material for the bilingual brochure The Palić Pre-Olympic Games (2008), in which he also described cycling and paid tribute to Vermes's vision.

Alongside this brochure, the novel Mr Vermes's Velocipede by the poet Marija Šimoković immortalised the compelling story of Lajos Vermes, an intellectual of genuine sensitivity, founder and promoter of the first revived Olympic Games, athlete and builder who embraced velocipede riding.

Figure 11. Lajos Vermes

The history of the Subotica microregion includes another exceptional inventor and designer, Ivan Sarić, whose monument stands in the city near the City Library. Sarić is known as an aircraft designer, but he was also an active competitive cyclist. He finished second in an international race in Pécs in 1886; won the 10-kilometre Hungarian Championship in 1897 and 1898; and won a 25-kilometre race in Vienna in 1899. In 1900, he again took first place in a 100-kilometre race in Budapest, as well as five second places in other disciplines. He also won a 100-kilometre race in Novi Sad and the 25-kilometre and one-kilometre events in Belgrade. At that time, he was champion in three countries.

Figure 12. Ivan Sarić

Building on the legacy of these great figures, the Spartak Cycling Club of Subotica has operated for many years and takes part in numerous national and international road-racing competitions, achieving excellent results, particularly in the under-13, cadet and junior categories. Outstanding male and female competitive cyclists emerge from these age groups.

Subotica is a city of bicycles for people of all ages. In the urban area and on its outskirts, in both summer and winter, people use bicycles for various purposes:

- travelling to and from work;
- transporting shopping;
- going on excursions;
- visiting relatives;
- sightseeing and recreation in the immediate and wider surroundings;
- recreation and maintaining physical fitness.

Cycling is a way of life. This is also confirmed by the distant year 1888, when a bicycle factory was established as the joint-stock company ‚Partizan *Bicycle Factory, a state-owned enterprise for the manufacture of bicycles, bicycle parts and other metal products and for* wholesale and retail trade'. It operated until 2006. In addition to bicycles, it produced mopeds under licence, including the well-known Solex and Pony Express. Its best-known bicycles were the Pony, city racing models with five and ten gears, classic bicycles and BMX bicycles, which became a symbol of the generation of the 1980s. The factory exported bicycles of very high quality that lasted for generations. Many residents of the city still own its models, which are becoming valued vintage items, particularly because of the trend towards reviving an era in which durable, high-quality products were manufactured.

Figure 14. Source: Logo of the Partizan Bicycle Factory, Subotica
Source: http://www.gradsubotica.co.rs/suboticki-motocikl-partizan-m-50/

Today, many associations organise bicycle excursions and tours of the surrounding area, often combined with walking, as part of their activities; the Spartak Mountaineering Club is one example. All the prerequisites exist for cross-border cycle routes to become sustainable and, in the future, an integral part of residents' activities in the microregion, including as organised events.

One such traditional event is the May Day ride around Lake Palić, a recreational event with a history of more than forty years, called ‚By Bicycle into Nature - Trim', formerly ‚Trimbi'. The route leads from Subotica through meadows and along farm tracks beside Lake Palić, passing through the nature park and finishing in the tourist area of the lake. Checkpoints are marked along the route, and each participant receives confirmation that they have passed each checkpoint so that the number on their card can be entered into a prize draw. The prizes are, of course, bicycles.

2.2.1. Natural and Traditional Resources and the Cycling Dimension

Cycle tourism has a beneficial impact on the microregion:

- it can attract new visitors who remain longer at the destination;
- it supports the local economy, trade and entrepreneurship in rural areas;
- it has a minimal negative impact on the environment and supports sustainability;
- it makes use of existing facilities, including those that are underused;
- in addition to purpose-built cycle paths, it uses paved roads as well as farm tracks, forest and meadow paths, quiet nature trails, embankments and disused railway lines;
- it encourages local residents to cycle more frequently and to use forgotten paths.

Cycle tourists' holidays can be divided into:

- stays at a destination ranging from one to several nights;
- multi-night stays where the purpose of the holiday is to explore a destination and stay in different places;
- cycling as an additional activity within a broader tourism package;
- day tours using either one's own bicycle or a rented bicycle;
- tours from accommodation in one place to another location, whether in a natural or urban setting;
- excursions and rides undertaken during weekends, public holidays or within a single day. These rides last more than three hours and take place during leisure time as a form of recreation. One-day excursions are particularly common during holidays.

To provide cycle tourists with this broad range of opportunities, suitable natural, man-made and traditional resources must be valorised for tourism purposes.

The microdestination has exceptional natural resources: four protected natural areas with diverse landscapes managed by the Palić-Ludaš Public Enterprise. These natural assets have different levels of protection, and an optimum number of visitors must be maintained in order to preserve natural processes and prevent degradation.

According to their level of protection, the natural resources of interest to cycle tourists are:

1. Lake Ludaš, a wetland protected under the Ramsar Convention and a special nature reserve with areas under the highest level of protection. Beside the lake are the Visitor Centre, Roka Farmstead, a nineteenth-century farmstead, part of the Ludaški Šor settlement, a cyclists' rest area with a birdwatching tower, and the Zvonko Bogdan Farmstead. The lake has exceptional biodiversity, serves as a bird corridor and provides habitat for a large number of endangered species. It can be approached from two directions: from Palić through the villages of Šupljak and Ludaški Šor, or from Bački Vinogradi through Hajdukovo. The lakeshore can be explored along farm and earth roads that also include an educational trail.

2. Lake Palić and the Palić Nature Park form a protected natural area with zones under the first and third levels of protection. The lake can be reached by cycle path from Subotica and circled partly on a purpose-built path and partly on the ring road around the lake. The northern shore is a tourist area with more than 180 years of tourism tradition and Art Nouveau buildings. It contains two parks: an English landscape park and the Baroque-style Great Park in the central area. The lake's third sector contains bird islands, a migration stop for birds and a large number of protected species; 207 bird species have been recorded.

3. Along the border on the northern outskirts of the city, from the village of Kelebija in Serbia towards Tompa and Kelebia in Hungary, extends the steppe, sandy and wooded landscape of the Subotica Sands, a protected natural area. The research zone is under the highest level of protection, while the zones under the second and third levels are open to visitors. Its distinctive mosaic of biodiversity is exceptionally important to the project's cross-border microregions. A cycle path runs from the villages of Tompa and Kelebija to the city of Subotica, while within the Sands there are farm and earth roads suitable for walking and mountain biking. The area contains traditional farmsteads and preserved vegetable, fruit-growing and wine-growing activities.

4. The Selevenj Heaths area lies on the eastern edge of the Subotica-Horgoš Sands. It is a special nature reserve and a typical Pannonian grassland heath, with rich birdlife and protected species, including some of Europe's most endangered species. A cycle path runs from Bački Vinogradi to Hajdukovo.
5. In addition to these protected natural areas, a small lake known as Krvavo Jezero (Bloody Lake) lies beside Lake Palić. It takes its name from the distinctive red algae that colour the water during summer; some people also call it Omladinsko Jezero (Youth Lake). Its southern and eastern sections are protected because of their distinctive biodiversity and protected species. The lake can be passed on the route towards Šupljak and Ludaš.

Among the man-made and traditional resources, priority should be given to the already valorised Art Nouveau buildings in the city centre and at Palić, buildings representing other architectural styles, examples of rural architecture such as those along Ludaški Šor, and Pannonian-style buildings in all the villages along the Kelebija-Tompa-Kelebia route. Together with gardens, meadows and wooded oases, these give cycle tourists a distinctive experience of peace, quiet and rural pastoral scenery. A very similar atmosphere can be found in the villages of Hajdukovo, Bački Vinogradi and Nosa and along the route towards Horgoš.

2.2.2. Overview of the Existing Situation, Connections with EuroVelo Routes and Existing Local Tours Developed under Another Project

The microregion has excellent connections with the EuroVelo routes, but several areas need to be improved and coordinated for cycle tourism:

- the cycle-path network must be continuously maintained, extended and connected with new paths in both urban and rural areas;
- additional cycling infrastructure, such as parking areas, rest stops and information boards, has not been developed at every location;
- bicycle servicing and repair services are limited to a small number of providers, while storage and rental services are still in their infancy;
- cycling infrastructure is financed mainly through individual projects, and additional permanent sources of funding are required;
- hospitality and tourism service providers do not yet take a sufficiently bike-friendly approach to cycle tourism;
- local road-based public-transport operators show insufficient interest in adapting their services to cyclists' specific needs;
- there are no statistical data or primary studies of cycle tourists at microregional level that would support evidence-based decision-making and the preparation of a cycle-tourism development strategy;
- clubs and associations most often initiate the sharing of information and contacts with potential international visitors;
- incoming-tourism agencies do not offer permanent cycle-tourism packages.

With regard to carrying bicycles on public transport, safe bicycle transport by train is available on the Subotica-Szeged and Subotica-Novi Sad-Belgrade routes, and bicycle transport on the Subotica-Buda-

pest line is also expected soon. These are new high-speed railway lines with several departures in both directions each day.

The EuroVelo cycle-route network is important for the development of cycle tourism in the microregion. The EuroVelo routes crossing Europe are designed to meet the specific needs of cycle tourists. Many cycle paths have already been built along individual routes, while others are under construction. Routes 6, 11 and 13 pass through Vojvodina. All three meet in the Belgrade area. Routes 11 and 13 meet near Horgoš, while Routes 6 and 13 meet near Sombor in the Upper Danube region. Route 6 continues along the Danube to Belgrade, where all three routes meet again before continuing on their respective courses. Routes 11 and 13 are particularly important to the project microregion.

EuroVelo 11 (the East Europe Route) connects the far north of Norway with Athens and passes through eleven European countries. The entire route is 6,550 kilometres long.

EuroVelo 13 (the Iron Curtain Trail) follows the boundary between the two blocs of the Cold War period. It is 9,950 kilometres long and connects twenty countries, frequently crossing from one country to another as it follows national borders.

EuroVelo 11 enters Serbia along the River Tisza and passes through Novi Bečej, Zrenjanin and Pančevo before crossing the Danube near Smederevo and continuing southwards through Serbia. Following the Great Morava, it passes Jagodina and continues to Niš, then via Leskovac and Vranje to the border with North Macedonia.

Figure 15. Map of cycle routes - Source: www.eurovelo.com

EuroVelo 13 enters Serbia at the tripoint of Serbia, Hungary and Croatia and then follows the national borders with Hungary and Romania, repeatedly crossing between the countries and passing through Kikinda and Vršac. Before entering the Đerdap Gorge, it divides into a Serbian and a Romanian branch, which rejoin near Negotin. It then continues through eastern Serbia via Zaječar, Knjaževac and Pirot before crossing into Bulgaria near Dimitrovgrad.

The sections of EuroVelo 11 and EuroVelo 13 that enter Serbia overlap for a short distance, from the point where they re-enter Serbia to Novi Kneževac in Banat. Over a longer section in Serbia, EuroVelo 13 enters very close to Subotica in the Subotica Sands Landscape of Outstanding Features. The route passes near the Palić Nature Park, the Lake Ludaš Special Nature Reserve and the Selevenj Heaths Special Nature Reserve, where it leaves Serbia and crosses into Hungary. A possible detour could include the Kamaraš Nature Park near Horgoš. After re-entering Serbia, the route passes close to the Great Bustard Pastures Special Nature Reserve near Novi Kneževac.

Local tours have been developed around EuroVelo Routes 11 and 13. Purpose-built cycle paths are available and cyclists can also use paved roads, while sandy and earth roads provide options for mountain bikes.

Within the EcoVeloTour project, funded through the Danube Transnational Programme, three routes were designed: the Sand Route, the Water Route and the Banat Adventure. These routes are based primarily on protected natural areas and focus on nature lovers, birdwatching, biodiversity and photographic safaris. Special ecological features and rarities are placed in the foreground. As part of the project, a cyclists' rest area with a birdwatching tower was constructed from natural materials on the southern shore of Lake Ludaš, together with the necessary amenities and facilities.

Because of the length of these routes, cycle tourists may use public transport when travelling to other, more distant destinations. Modern local trains already provide space for carrying and storing bicycles as part of passenger transport, representing progress in this area. In the case of buses, the possibilities depend on the operator and on whether bicycles can be placed in the luggage compartment. Owing to these limitations, cycle tourists travelling long distances along EuroVelo routes sometimes carry their bicycles on camper vans and use them to explore local areas, while at other times they rent bicycles locally to tour the destination.

2.2.3. Cycle-Tourism Target Groups, Target-Group Profiles, the Special Needs of Cycle Tourists, Stakeholders, and the Development and Characteristics of the Cycle-Tourism Market

Cycle-tourism target groups can be classified according to their preferred riding terrain and the bicycle models adapted to it:

- cross-country cyclists, who use mountain bikes on uneven terrain;
- road cyclists, who use vintage bicycles and bicycles designed for paved paths;
- touring cyclists, who use trekking bicycles;
- downhill mountain bikers, who use specialised bicycles.

The average cycle tourist has specific needs and expectations, and the typical profile of such tourists includes the following characteristics:

- they come from the upper-middle class, are educated and socially aware, and originate predominantly from EU and Nordic countries where cycle tourism is expanding, well developed and supported by an established cycling culture; they readily combine cycling with other forms of tourism along the route, including ecotourism, gastronomic and wine tourism, and event tourism;
- middle-aged men most often take purpose-specific tours and prefer circular routes because of their particular interests;
- when the objective is to explore a wider region with breaks during the ride, the difference between the numbers of male and female cycle tourists becomes smaller;
- middle-aged cycle tourists often take shorter routes with their families, frequently as groups of friends whose children also participate;
- younger adult men tend to undertake longer routes individually, in groups or as members of clubs;
- they spend more per day than the average tourist, particularly on good food and small items that they can carry with them;
- they enjoy visiting shops selling cycling equipment along the route;
- they are open to local culture and are particularly inspired by the landscape.

Residents living near the border are extremely important to cross-border routes. They include young people; families with children; older people who are physically fit and cycle regularly; middle-aged people who undertake longer recreational rides as a challenge; and cyclists from the wider region who wish to discover something new.

An important task is to attract international visitors to the cross-border routes, particularly **LOHAS** tourists (Lifestyles of Health and Sustainability), who have the following characteristics:

- they are highly educated and environmentally aware and choose small hotels and resorts offering healthy food and facilities such as spas and swimming pools;
- the security of their bicycles and equipment, which they expect to be able to store indoors, is exceptionally important to them;
- they choose cycle paths and options that have the least possible negative impact on the environment;
- they enjoy visiting local attractions, both natural and man-made;
- they are open to local culture and seek contact with residents;
- they research and make bookings online;
- they avoid mass-tourism destinations and instead choose little-known and unexplored places;
- they expect high-quality service at the destination and the ability to reach repair services, a doctor or the police relatively quickly;
- they are experienced and financially secure tourists with a strong appreciation of service quality and value for money;
- they spend more than the average tourist and purchase most of what they need at the destination because they carry only the minimum necessary belongings.

Service providers along cycle routes - the stakeholders or other interested parties - are responsible for creating a bike-friendly environment in every respect and for providing services suited to cycle tourists. These include clear signage for the facility, bicycle racks, the possibility of minor repairs, access to essential information, food and drink suitable for cyclists, comfortable and simple but not necessarily luxurious accommodation, facilities for washing and drying clothing and bicycles, and secure bicycle storage.

Cycle tourists also include visitors who travel to a selected destination and rent a bicycle there in order to explore the surrounding area. Bike-friendly accommodation providers should therefore be able either to rent bicycles directly or to direct guests to a bicycle-rental station.

The cycle-tourism market developed in Western Europe at the end of the nineteenth century. The first long-distance route was Paris-Brest-Paris, which also inspired the well-known dessert still enjoyed in traditional Parisian patisseries. Europe is estimated to have more than sixty million active cycle tourists. Cycle tourism is one of the fastest-growing branches of tourism and is expected to continue expanding. The European cycle-tourism market is worth EUR 44 billion annually, more than the cruise industry. In view of these figures, cross-border routes linking the microregions gain even greater importance and can enter the cycle-tourism market with their own offer.

2.2.4. What Cycle Tourists Can See and Experience in the Microregion

The entire project microregion has exceptional landscape features, ranging from steppe and woodland scenery and sandy terrain to protected natural areas, some of which extend across both sides of the Serbian-Hungarian border. Its many protected plant and animal species are attractions in their own right, including the Palić gull, European pond turtles, numerous bird species and the fauna of steppe butterflies. The flora includes shrubs, orchids, lichens, characteristic grasses, meadow flowers, irises, hydrophilic species and endemic plants. The most beautiful meadows are found in the Selevenj, Jasenovača and Daščara forests and on the surrounding sand dunes. While passing through these sandy, grassy and wooded landscapes, cycle tourists experience a wealth of colours, especially in autumn, together with silence and tranquillity and the distinctive fragrances produced when black locust, poplar, pedunculate oak and shrub vegetation are in bloom. The characteristic smell of humus in the woodland areas can also be sensed from the cycle path while passing the protected natural sites. Cycle tourists can stop, take photographs and enjoy the moment as though time had stood still. Most are nature lovers and enjoy resting on the grass, warm sand, in the shade of trees or beside the water. Information boards are recommended, featuring descriptions and images of selected examples of flora and fauna that characterise the landscapes along the route.

Cycle tourists will enjoy the vineyard and orchard landscapes and will gladly visit a distinctive traditional farmstead or a garden with greenhouses used for flower cultivation.

The water resources along the routes provide cycle tourists with a sense of freshness. In addition to their natural rarities, parts of the microregion have legends and anecdotes that enrich the visitor experience. Lake Ludaš is associated with mystical legends of supernatural phenomena appearing when mist covers the lake, stories about the hideout of the outlaw Sándor Rózsa, and accounts of residents hiding among the marsh reeds during Ottoman incursions.

The urban and rural architectural ensembles contain both exceptional tangible heritage and valuable intangible heritage. Historical information, stories, anecdotes and interesting details about people and events provide an additional element that attracts cycle tourists. Residents on both sides of the border have relatives, friends, family ties and roots in the microregion and are particularly

interested in its shared past. When cycle routes are enriched with such content, the experience acquires an additional dimension.

Architectural ensembles that cycle tourists can visit along the routes include:

- Art Nouveau architecture in the city centre and at Palić, including the villas of Palić;
- Classicism, Neo-Renaissance, Art Deco and International Modernism in the city and at Palić;
- archaic examples of rural architecture at Ludaški Šor;
- Pannonian houses in the wider urban area and in the villages along the routes.

Conclusion: the microregion possesses exceptional landscape characteristics, architectural ensembles of enduring value and water resources that will enrich cycle tourists' experiences along the routes. These tourist attractions can evoke admiration, a sense of beauty and peace, the feeling of a slower pace of life, unexpected experiences or familiar memories, new knowledge, time well spent and, ultimately, satisfaction.

After carrying out their own research, cycle tourists sometimes design routes according to their wishes and expectations, using the following principles:

- a linear ride from point A to point B, with an attraction or activity at point B;
- a circular ride in which the starting point and destination are the same;
- rural routes covering no more than 50 kilometres per day, following rivers and flat roads;
- short urban routes in different locations;
- routes through protected natural areas;
- scenic routes on the outskirts of cities or between settlements.

The local routes recommended by the project will apply these principles when individual routes and their alternatives are designed.

2.2.5. Development of New Local Routes and Maps

The microregion has a network of cycle paths and several tours focused on natural areas, landscapes and ecology. The project is designing routes that will integrate existing tours, bring tourism products together and establish four new principal routes with several alternatives, primarily using purpose-built cycle paths and paved roads.

The local routes focus on:

- existing cycle paths and the path to be constructed within the OPTI-BIKE 3 project;
- paved roads used by motor vehicles;
- the possibility of connecting and overlapping the proposed principal routes in order to create different modes, itineraries and tour alternatives, including a gastronomic and wine option already incorporated into the routes as an existing wine tour;
- presenting the multiple layers of the tourism experience that attract cycle tourists;

- allowing cycle tourists to design their own itineraries by moving from one recommended principal route to another, thereby creating an additional sense of independent exploration and adventure;
- integrating the new routes smoothly with those already designed;
- providing opportunities for expansion and the creation of new routes in future periods and projects.

Principal routes:

2.2.5.1. **ROUTE: Architectural and Historical Route - City Centre and Palić**

The architectural and historical heritage route begins at the City Hall as its central point and continues through the city, visiting primarily Art Nouveau buildings.

Route 1 - Architectural Styles of the City Centre

The City Hall is a masterpiece of Hungarian Art Nouveau, decorated with patterns of stylised flowers, floral ornaments in ceramics and wrought iron, and Zsolnay ceramics. It is the central landmark and symbol of Subotica. Built between 1908 and 1912, it was designed by architects Marcell Komor and Dezső Jakab. The City Hall tower and viewing platform is 45 metres high and offers an exceptional view of the surrounding area. The interior is inspired by Hungarian folk motifs. The Great Council Chamber contains outstanding stained-glass windows by the glass artist Miksa Róth and the painter Sándor Nagy. The interior of the City Hall provides a special experience, particularly when entered through the ceremonial entrance. The building has four inner courtyards and four entrances.

After visiting the City Hall, cycle tourists can pass the buildings along Korzo, then the Raichle Palace and the villas opposite the railway station in Ferenc Raichle Park Street. They can continue along Đure Đakovića Street, pass through Korvin Street, view the small street of old crafts and proceed past the Open University. The route then leads towards the Synagogue and the Museum, continuing along Dimitrija Tucovića Street to the Grammar School building, the monument to Dezső Kosztolányi and the house of Géza Csáth. Passing the monument in Victims of Fascism Square and the Cathedral of St Teresa of Ávila, the route continues along Matka Vukovića Street, lined with palaces, to Štrosmajerova Street and the Classical-style Music School. From there it passes through the park to the library and continues along the cycle path towards Palić.

Korzo contains a number of buildings worth observing.

Korzo 1: the rental palace of junior Máté Vojnić, the city public prosecutor, built in the Neo-Gothic style in 1893 to the design of architect János Jedlička. The building has a central atrium and, unusually for the period, originally had two lifts. The coat of arms of the Vojnić family appears on the front of its triangular terrace. The building has been declared a protected cultural monument.

Korzo 2: **the National Theatre,** with six large Corinthian columns on its façade. The building was constructed between 1845 and 1853 to the design of János Skultéty. The section facing Korzo originally served as a hotel. Between 1904 and 1907, the architect Ferenc Raichle carried out alterations, at which time the inscription ‚City Theatre' was added. The theatre dominated its surroundings, which then consisted of muddy, unlit streets, and signalled the importance of culture to development. The theatre hall burned down in 1915 and was restored in 1926. New reconstruction plans and

works began in 2006, and the building has been regarded as an important cultural monument since 1991.

Korzo 3: the Golden Lamb Hotel, now the Army **Centre,** built in 1854 by an unknown architect in the spirit of Munich Art Nouveau. In 1886, the hospitality section was reconstructed according to plans by Géza Koczka. It was later remodelled again by the well-known Subotica architect Titus Mačković, producing the appearance for which the building is known today. Three Art Nouveau arches decorate the front of the façade. The building was declared an important cultural monument in 1986.

Korzo 4: the former palace of the Subotica Commercial Bank, designed by Marcell Komor and Dezső Jakab, two architects who left a major mark on the city. The building is a unique Art Nouveau monument and a particularly accomplished work of beauty. Its façade features Art Nouveau motifs, including a female figure, and motifs from Hungarian embroidery, such as tulips and hearts. A small courtyard lies within the palace. Shops and the bank occupied the ground floor, while the upper floor was designed for residential use. The building was declared an important cultural monument in 1986.

Korzo 5: the rental palace of Alajos Poljaković, a grammar-school teacher, built in the Neo-Renaissance style to the design of Mihály Tóth. The building was purchased in 1894 by Sándor Vojnić, who renovated it. In 1911 it became the property of the Southern Lowlands Commercial Bank, which had it reconstructed again according to designs by Marcell Komor and Dezső Jakab, giving it its present appearance. The façade combines Renaissance, Classical and Viennese Art Nouveau ornament. The building was damaged during the bombing of 1944 and reconstructed in 1976 according to plans by architect Goran Martinović. It has been regarded as a cultural monument since 1986.

Korzo 6: the rental palace of lawyer János Dimitrijević, built in the Neo-Renaissance style around 1881. Filigree ornament on the façade softens its otherwise strict lines. This type of decoration is characteristic of the architect Titus Mačković, who had the courage to overcome the rigid rules of contemporary construction. The building has been regarded as a cultural monument since 1986.

Korzo 7: the rental palace of the Subotica Construction Company, built in 1912 with an inner courtyard as two identical residential and commercial buildings, colloquially known as ‚the twins'. The overall design was considered innovative because it was the city's first building in the International Modernist style, with clear and simple lines. International Modernism did not become widespread until the middle of the twentieth century. Large window surfaces divided by slender supports give the buildings elegance. At the end of the twentieth century, additional floors were added to one of the buildings according to the original plan by architect Zsigmond Sziklai. The other retained its lower height, and the nickname ‚the twins' consequently fell out of use. The buildings were declared cultural monuments in 1985.

Korzo 8: the rental palace of Szánkó Manojlović, built in 1881 in the Neo-Renaissance style with restrained ornamentation, according to plans by Titus Mačković. The palace is decorated by two female figures above the window pediments and by its roof structure. The architect's creativity is also evident in the functional arrangement, with commercial premises on the ground floor and apartments above. The palace is further distinguished by its beautiful entrance and richly painted staircase in a wide range of colours. It was declared an important cultural monument.

Korzo 9: the rental palace of Adolf Halbrohr, built in the Neo-Renaissance style by the architect Géza Koczka. The symmetry of the façade is broken by the entrance for carriages and pedestrians, which is decorated with delicate plaster ornament. The palace was declared a cultural monument in 1986.

Korzo 10: the National Hotel, built in 1882 in the Neo-Renaissance and Classical styles to the design

of Géza Koczka. Its windows provide the principal decorative feature of the harmonious façade. The building was financed by the large landowner Mór Halbrohr as his third hotel, with a café on the ground floor and guest rooms above. The symmetrical façade conveyed the elegance and luxury of the hotel. In 1895, the young architect Ferenc Raichle modernised the interior. The building was declared a cultural monument in 1986.

Korzo 11: the rental palace of Simon Dominus, designed in the Neo-Baroque style by Titus Mačković. This smaller building is symmetrical, with a terrace extending above the gateway and ornament in the form of open shells and a crescent moon. It was declared a cultural monument in 1986.

Korzo 12: the residence of the family of lawyer György Manojlović, built in the Neo-Renaissance style in 1881 to the design of Titus Mačković. A composition of cubic forms gives harmony to the façade. The building is characterised by austere simplicity, while its wrought-iron railings were an innovative construction feature. It was declared an important cultural monument in 1991.

Korzo 13: the Belgrade Department Store, built on the site of a steam mill dating from 1873 that was demolished in 1971. The department store was constructed in 1987 according to designs by László Kolozsi and Dezső Ludasi. Its façade imitates the styles of the houses along Korzo, with carefully matched heights and functional treatment, so that the cubic form of the department store is concealed and blends into the streetscape. The Raffles department store has operated there since 2017.

Korzo 15: the rental palace of Mihály Prokes, built in 1888 in the Neo-Renaissance style by architect Géza Koczka. The two-storey building has a harmonious and somewhat restrained façade. The first floor contained four- and five-room apartments, which were luxurious for the period, while the second floor contained two-room apartments. Géza Koczka also had his studio here, and in the 1980s the world-renowned travel writer and explorer Tibor Sekelj lived in the building.

At the end of Korzo stands the Art Deco Sokolski Dom, a sports building **constructed in** 1936 and at the time the city's largest sports centre. Today, the building houses the Children's Theatre, successor to the former Puppet Theatre. The large sports hall was converted into the Jadran Cinema and later became the temporary home of the National Theatre. The plans for Sokolski Dom were prepared by a team of engineers, architects and artists: Konstantin Kosta Petrović, Oton Tomanić, Franjo De Negri, Baltazar Dulić, Velja Stefanović and the painter Savo Rajković, whose triptych of murals in the entrance hall remains beneath layers of paint.

Behind the Prokes Palace, in Đure Đakovića Street at 5 **Ferenc Raichle Park,** stands the Ferenc Raichle Palace, an outstanding work of Hungarian Art Nouveau. The architect built the palace as his family home. Specialists in architecture and art regard the Subotica palace as the masterpiece of his career. The central section and entrance portal attract the greatest attention, edged with Zsolnay ceramics from Pécs and Murano glass from Italy. Today it houses the Likovni Susret Gallery of Contemporary Art. Its courtyard contains the garden of the Boss hospitality venue, which complements the palace's architectural setting.

The palaces on the northern side of Ferenc Raichle Park, located on the former Rogina Pond, include:

- No. 7, built in 1892 for Mayor Lazar Mamužić to the design of Titus Mačković. This L-shaped Renaissance-style corner building has an oriel window resembling a traditional ‚kibic fenster' and is a cultural monument;
- No. 11, the rental palace of Simeon Leović, designed in the Art Nouveau style by Ödön Lechner and Gyula Pártos. The Leović Palace may be regarded as the first transitional building in Subotica, marking the shift from Historicism to Art Nouveau. It was built in 1893;

- No. 13, built in 1898 for Ferenc Simegi in the Neo-Gothic style to the design of Titus Mačković. This single-storey corner building has the entrance to its commercial section on the corner, a terrace covered by a pyramidal tower, and floral ornament around the windows. It is a cultural monument.

Continuing along the cycle path in Đure Đakovića Street, visitors pass several notable houses:

- the house of Sava Međanski, 1 Đure Đakovića Street, designed by Ferenc Raichle in 1903;
- the rental house of József Ungar, 10 Đure Đakovića Street, designed by Titus Mačković in 1910;
- the rental house of Ernest Lendvai, 19 Đure Đakovića Street, designed by Titus Mačković in 1909.

Among these houses stands an International Modernist commercial building belonging to the DDOR insurance company, with a particularly attractive mosaic on its façade.

The next notable street, lined with cafés and restaurants, is Korvin Street, known for its exceptional atmosphere and its small street of old crafts. S. Sonnenberg's Art Nouveau palace stands at 10 Korvin Street, while another of his palaces is located at 3 Đure Đakovića Street.

From Korvin Street, the route leads **towards the Open** University, an International Modernist building known for the Palić European Film Festival and the International Festival of Children's Theatres. Passing the Franciscan Church and the oldest preserved building in Subotica, **the Baroque house of Luka Sučić,** built in 1730 at 11 Emperor Jovan Nenad Square, the route reaches the turn into the next street.

On leaving the square, before entering Dimitrija Tucovića Street, the following buildings can be seen:

- the Palace of the Hungarian General Credit Bank, 2 Republic Square, designed by Alfréd Hajós and built in 1911;
- the Lončarević House, 10 Republic Square, designed by Géza Koczka in 1907 in the Viennese Art Nouveau style. In addition to its rich Art Nouveau ornament, a particularly interesting feature is the corner oriel window supported by a large shell.

Dimitrija Tucovića Street contains a series of palaces with notable façades, among which the following are especially prominent:

- the Palace of the Austro-Hungarian Bank at 15 Dimitrija Tucovića Street, a massive single-storey building conveying an impression of security and stability, designed by Ferenc Raichle in 1901. The influence of Art Nouveau can be seen in its numerous decorative elements, including female faces, heads of Mercury, sunflowers, a beehive, a key and a sphinx-shaped door handle, symbolically expressing wealth, security and the confidentiality of deposits;
- the building of the Jewish Community of Subotica, erected in 1902 at the same time as the Synagogue. Jewish residents have lived in Subotica since 1775.

At the end of the street towards Marshal Tito Avenue, International Modernist residential buildings can be seen, including the high-rise Antić Towers. Around the corner stands the Synagogue.

The Synagogue is one of the finest examples of Hungarian Art Nouveau and is unique in Europe. Its façade and interior feature floral decoration in the form of peacock feathers, tulips, stylised roses and lilies. The stained-glass windows were produced in Miksa Róth's Budapest workshop, while the façade ceramics and roof tiles came from the Zsolnay factory. The interior, designed in the form of the biblical Tabernacle, has exceptional acoustics. The entire structure was avant-garde and innovative. It was restored in 2018.

Opposite the Synagogue is the City **Museum, housed in the** former family residence of Dr Miksa Dömötör, designed in the Darmstadt Art Nouveau style. The museum was founded in 1892 and re-established in 1948. It holds and preserves archaeological, ethnological, natural-history, artistic and historical collections of artefacts and legacies. The museum presents permanent and temporary displays, exhibitions and events and carries out extensive research.

From Komor and Jakab Square, the Grammar School **building** and the park containing the monument to Dezső Kosztolányi can be seen. The building is designed in the Historicist style. The Grammar School continues the tradition of a grammar school founded by the Franciscans in 1747. It has an outstanding history and was attended by Dezső Kosztolányi, whose father Árpád Kosztolányi served as its headmaster for many years, Géza Csáth, the writer Dušan Radović, the poet Stevan Raičković, the linguist Professor Pavle Ivić and many others who contributed through their work to the culture and economy of the city.

Passing the Grammar School along Petőfi Sándor Street, formerly the city's main street, the route reaches a memorial plaque to Géza Csáth on the building that now houses the polyclinic. Victims of Fascism Square is immediately visible, with its monumental memorial, park and the Cathedral of St Teresa of Ávila. To the right, near the roundabout at 4 Lajos Kossuth Square, stands the Népkör building, constructed in the Art Nouveau style. It houses the Hungarian cultural centre, which has operated continuously since 1871 and has a rich history and a broad programme dedicated to preserving Hungarian culture.

The cycle path in Matka Vukovića Street returns past fine palaces and the Chapel **of St Roch, the** city's patron saint and protector against plague, built in 1738 and designated a cultural monument of great importance, before reaching the Music School in Štrosmajerova Street.

Štrosmajerova Street contains rental palaces built in the Classical style:

- No. 3, the rental house of Imre Magyar, now **the Music** School, built in 1847;
- No. 4, the rental house of Luka Aradski, designed by Titus Mačković;
- No. 7, the two-storey house of Florian Pavelka, built in 1847;
- No. 8, erected in 1827 on the site of an eighteenth-century inn. It was built for András Vinkler as a two-storey inn with six guest rooms, a dining room and a ballroom. The building is a cultural monument and combines Baroque and Classical stylistic features;
- No. 10, the house of the Zomborčević family, built in 1846;
- No. 16, the two-storey house of Benedek Mačković;
- No. 22, a palace designed in 1909 by the Subotica architect Titus Mačković. It is the only three-level building and the only Art Nouveau building in the entire street. Its façade, like those of Mačković's other Art Nouveau buildings, was inspired by the Art Nouveau architecture of Vienna and Darmstadt, not directly but through the influence of the Vágó brothers, architects from Budapest;
- the **Yellow** House at the end of the street, formerly the Savings Bank of the National Bank, built between 1880 and 1883 and designated a cultural monument of great importance. Designed by Titus Mačković, it is a single-storey Neo-Renaissance building originally intended for a financial institution. Over time, it acquired other functions that caused a degree of damage and alteration, including the opening of new entrances that have since been closed. The building is associated with several historical events from the Second World War, when it housed the special police and military headquarters, as well as a prison and torture facility. It now accommodates the Faculty of Teacher Education.

Route 1.1. – Architectural Styles of the City Centre

From Štrosmajerova Street, the route passes a park containing busts of important Subotica writers and reaches the City Library and the Municipal Rental Palace.

- The City **Library** was originally the National Casino, built in 1896, and is designated a cultural monument of great importance. Designed by Ferenc Raichle, it is a corner building in the Eclectic style. At the entrance from Freedom Square are two Atlas figures by the sculptor Ede Telcs, supporting the balcony above. The main façade was restored in 2022. The reading room is exceptionally ornate, as is the staircase leading to it. At the turn of the twentieth century, the room was originally intended for the social life of Subotica's intellectuals, who gathered in the National Casino under the auspices of the Free Lyceum. Dezső Kosztolányi describes the social circumstances and atmosphere of this room in his novel Skylark (Pacsirta).
- The Municipal **Rental Palace was** designed in the spirit of Viennese Art Nouveau by the architect Pál Vadász. Construction of this residential building was completed in 1913.

Passing the library, the route reaches the monument to Ivan Sarić, opposite the International Modernist residential complex known as ‚Tokyo'. The cycle path then continues directly beneath the underpass towards Palić.

Route 2 – A Relaxing Cycle Ride through Palić: Art Nouveau Architecture and Other Styles

The cycle path reaches the centre of Palić, immediately recognisable by its colourful Water Tower, built **in the Art** Nouveau style in 1910. From the tower, a promenade leads through the English Park to the lake. The Water Tower is a multifunctional building that served as an electric-tram stop and the entrance to the spa and has become a symbol of Palić. Its vivid palette is dominated by ochre, light blue, **green and the famous** Palić red, combined with wrought-iron ornament and decorative wooden elements. Art historian Béla Duránci considers the ornate gates of Kalotaszeg, a treasure-house of Hungarian folk art, to have been the source of inspiration.

Following the promenade through the English Park and taking the wooded path on the right, visitors reach the **Summer Stage, built** in the forest in 1950 to the design of Baltazar Dulić. It hosts various events during the summer. The amphitheatre-shaped venue has excellent acoustics and is used for the Palić Film Festival. Behind the Summer Stage are the courts of the Palić 1878 Tennis Club, named after **the year in which tennis was** first played at Palić. Numerous tournaments are held there today. The changing-room building and terrace are designed in the Art Nouveau style.

Continuing through the English Park, established in 1840, from the Water Tower, the cyclist passes the Grand Terrace and reaches the Memorial Fountain.

The Grand Terrace is a well-known Art Nouveau building constructed in 1912 to the designs of Marcell Komor and Dezső Jakab. Its upper floor contained a parquet-floored ballroom that also served as an indoor tennis court; today it is a congress centre. Floral elements are prominent, with Palić red particularly emphasised. The ground floor originally contained a restaurant and patisserie.

Opposite the Grand Terrace stands the Art Nouveau **Music Pavilion** from the same period, used for promenade concerts. The Memorial Fountain is immediately **beside it.** When construction of the Art Nouveau buildings at Palić was completed in 1912, verses by Kosztolányi were **carved into** the fountain's original stone cladding. They were later replaced by inscriptions describing the history of Palić.

Following the path westwards beside the Baroque-style park, **visitors reach the** Women's Lido, an exceptional Art Nouveau building with changing cabins, a pier and a café, offering an uninterrupted view to the horizon. Floral ornament and Palić red are again prominent.

Continuing westwards along the lakeshore, the route reaches Villa Lujza, Bagolyvár, the monument to Lajos Vermes, the remains of the asphalt cycle track, the Riblja Čarda restaurant, built in an imitation Art Nouveau style, and the sailing club. A purpose-built path then follows the lake past a fishing lookout, traditional farmsteads and houses with gardens towards the embankment separating the third sector of Lake Palić.

Villa Lujza was built by Lajos Vermes for his mother on the occasion of the founding of the Palić Games. It was designed in the then fashionable Swiss villa style, with Zsolnay roof tiles, extensive use of timber and two terraces. The former cycle track, grandstands, training pavilions and a tavern were also located here. Today, the villa serves as luxury accommodation.

Bagolyvár, or the Owl Tower, was built in 1892 as part of the sports complex created by Lajos Vermes, the distinguished athlete and founder of the Palić Olympics in 1880. The villa was constructed in the fashionable Swiss style, with extensive use of timber and roof tiles made from renowned Zsolnay ceramics. It served as competitors' changing rooms and accommodation for judges.

The monument to Lajos Vermes in Lajos Vermes Park commemorates a man of wide-ranging interests who organised sports games at Palić between 1880 and 1914, inspired by the Olympic spirit.

After passing Villa Lujza, visitors reach the Palić villas **and** the zoo, founded in 1949 and now regarded as one of Palić's attractions.

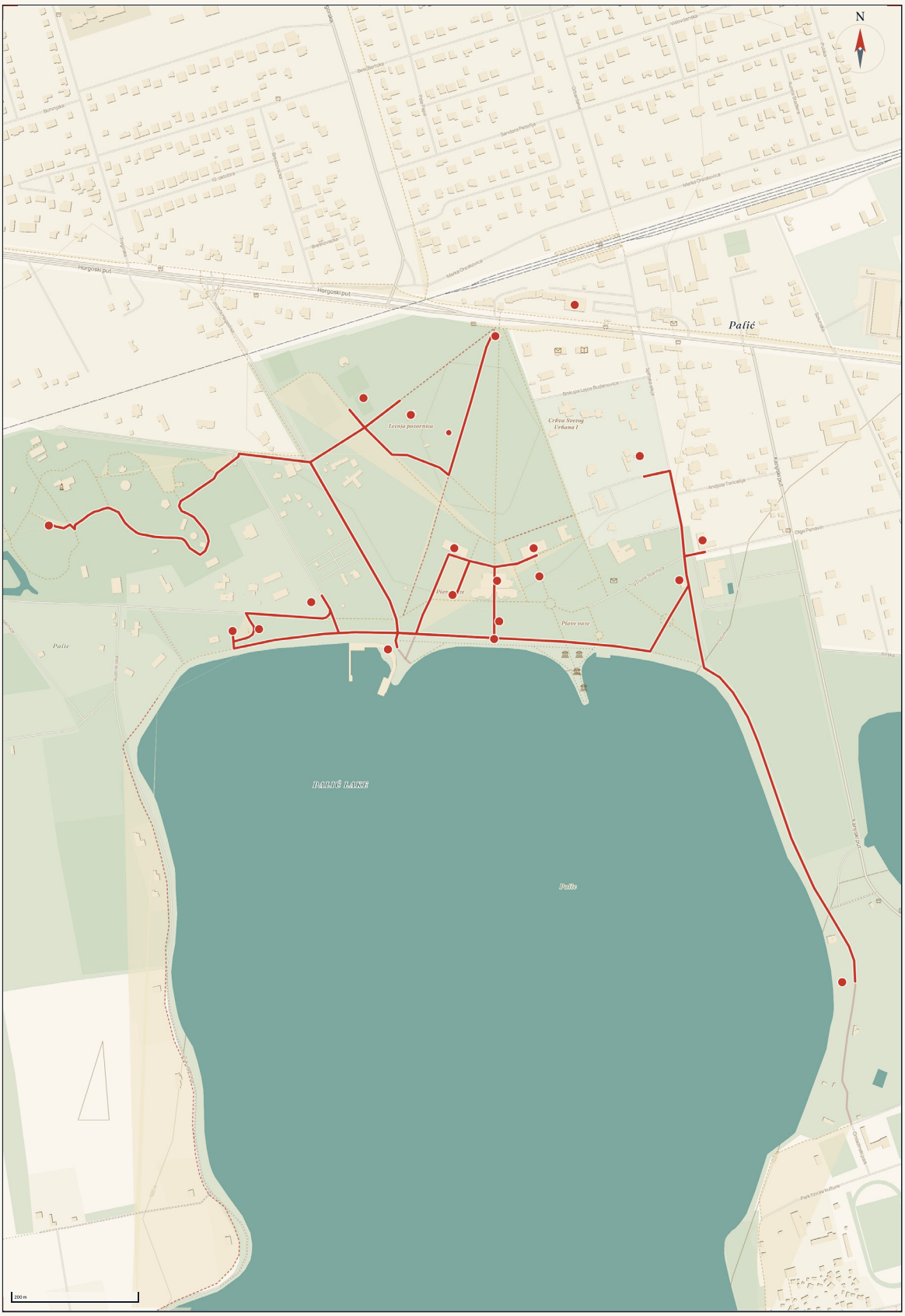
Following the Palić promenade eastwards through the Baroque-style park, visitors can see:

- two hotel buildings: Hotel **Park, a** protected cultural monument built in the Classical style in 1860, during the period when the Palić spa was renowned; and the Hotel Jezero annexe, **designed in** the same style;
- two **rare blue vases,** one standing in front of each hotel and representing the God of Water. Made from Zsolnay ceramics, they were donated in 1910 by the factory owner Miklós Zsolnay;
- a stone fountain;
- sculptures and monuments;
- the **tram station, built** in 1897 as the terminus at Palić and now serving as the Tourist Information Centre;
- the Abazija **building,** constructed in 1925. It first operated as a restaurant and later as the oldest cinema; today it again serves the same purpose and forms part of the legally protected architectural ensemble of Palić Park;
- the **Palić villas** in Splitska Avenue, designed after Swiss villas, and the private villas of successful city entrepreneurs from the late nineteenth and early twentieth centuries beside the Water Tower, now used as the library, post office and pharmacy.

The walk can end at the Men's **Lido, where** a pier, a fish restaurant, cafés and restaurants extend to the end of the sandy beach.

Opposite the Water Tower stand a car park, business centre and department store in the International Modernist style, designed by Karlo De Negri.

Route 1.2. – A Relaxing Cycle Ride through Palić



2.2.5.2. ROUTE: Towards the Sunset - A Landscape Route

Dezső Kosztolányi: Poem to Géza Csáth

„Now Lake Palić gleams like lead,
and on the henbane and wild wolfberries
the light lies sleeping."

Cycle tourists seeking tranquillity, peace, silence and enjoyment of nature can choose between two sunset routes: one offering a wealth of colours reflected on the lake's surface and across the sky, and the other passing through the pastoral rural landscape around the lake.

Route 1 – The Palić-Ludaš Sunset

Following the cycle path to Palić from the starting point at the City Hall, cycle tourists can turn at the first entrance to Palić, continue along the street past the Palić villas and tennis courts, turn by the zoo and reach the lake near Villa Lujza. From there, the promenade leads to the sailing club, which has a large seating and rest area overlooking the lake, where wild ducks and swans can be seen. The eastern side of the lake, however, provides the true Palić sunset experience. Visitors should pass the Women's Lido and continue to the Men's Lido, where they can find a place on the pier or on a bench to watch and enjoy the view. The silence is broken by the calls of the protected Palić gull. From here, the entire landscape on the opposite side of the lake can be seen, with greenery and tall trees. This restful moment provides renewed energy for further exploration well into the twilight.

From the Men's Lido, a purpose-built path leads towards the southern part of the lake, passing the rowing club and small-sports courts to the sandy beach, and then continuing beside the Weekend Settlement to the Petra Winery. Several shelters for resting are located along this section, and the view of the lake is uninterrupted. Beside the fisherman's hut stands a book-shaped information board showing fish species, some of which can be found in both Lake Palić and Lake Ludaš.

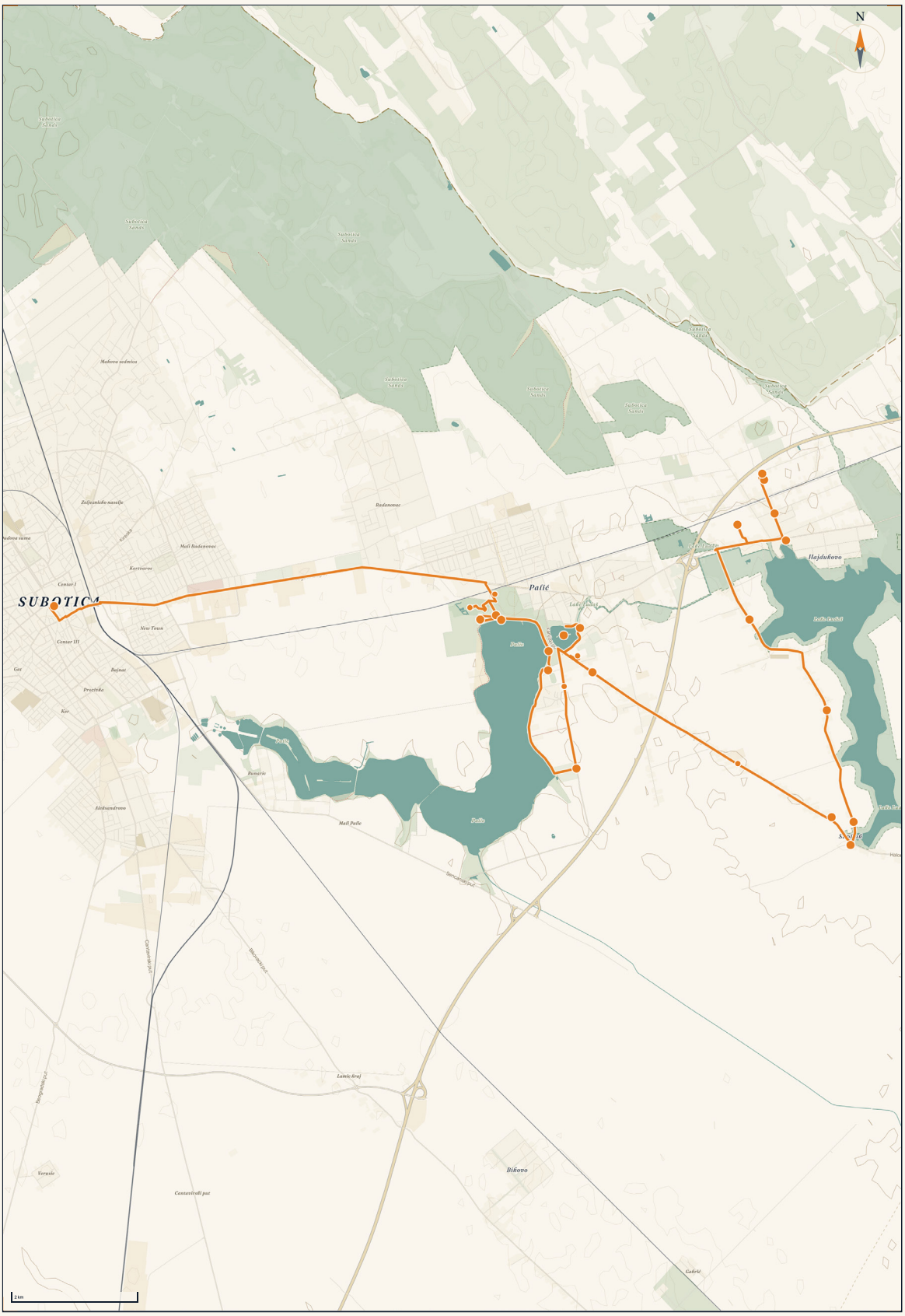
After reaching the Petra Winery, visitors are advised to join the circular paved road around the lake, which passes through the natural landscape, and travel north towards Krvavo Jezero. The lake is small and can be circled quickly. Its southern section is protected, while the northern section is open for swimming and fishing. The Palić sunset can still be observed from here. A paved road then leads towards the villages of Šupljak, also known as Ludaš, and Ludaški Šor and onwards to Lake Ludaš, passing the Navigator facility and the Youth Settlement. The landscape changes continually, with alternating areas of greenery, houses and gardens, orchards and fields. The route passes the Zvonko Bogdan Winery, farms, an adventure park and the Furioso stud farm. At the exit from Šupljak, it reaches the southern shore of Lake Ludaš and the Kosztolányi family summer house. This house is an important cultural monument. The celebrated writer Dezső Kosztolányi spent his summers there and described the landscapes around the lake. The building served as the medical practice and home of the writer's brother, while the main street bears the name of their father, Árpád Kosztolányi.

Following the paved road northwards beside the lake, visitors reach a cyclists' rest area with a bird-watching tower. It provides facilities for resting and information boards presenting longer existing routes in the surrounding area. Cycle tourists have access to suitable amenities, including toilets, a bicycle-repair point, a small kitchenette, two shelters and an outdoor fire area. They can observe wildlife and its activity at dusk, admire the mystical spectrum of sunlight over Lake Ludaš and enjoy unspoilt nature that survives alongside the village's agricultural activity because nature-protection requirements are respected. Evening at Ludaš may bring mist rising from the water, a phenomenon associated with local legends.

Continuing northwards along the paved road, the route passes the Zvonko Bogdan Farmstead and other rural holdings before reaching the Guljaš Čarda OLD restaurant, which has a small zoo and an artificial fishing lake beside the shore of Lake Ludaš. Leaving Ludaški Šor, the route joins the road towards Hajdukovo, passing Vinski Dvor and the Jazzik café. A short distance north of the village centre are the Hedera restaurant, the Maurer Winery, flower growers with numerous greenhouses and, at the end of the village beside the railway line, Ingus Castle. Built in 1920 in a combination of Art Nouveau and Early Modern styles, the castle is now in very poor condition.

Following the same road through Hajdukovo towards Bački Vinogradi, cycle tourists can observe the care residents take in maintaining their properties and public green areas. The somewhat melancholic and mystical scenery around Lake Ludaš and its peaceful sunsets give way to a busier, though still traditional, rural life and to landscapes of orchards and vineyards known for apple production, where the evening light is reflected across sandy terrain.

Route 2.1. – The Palić–Ludaš Sunset



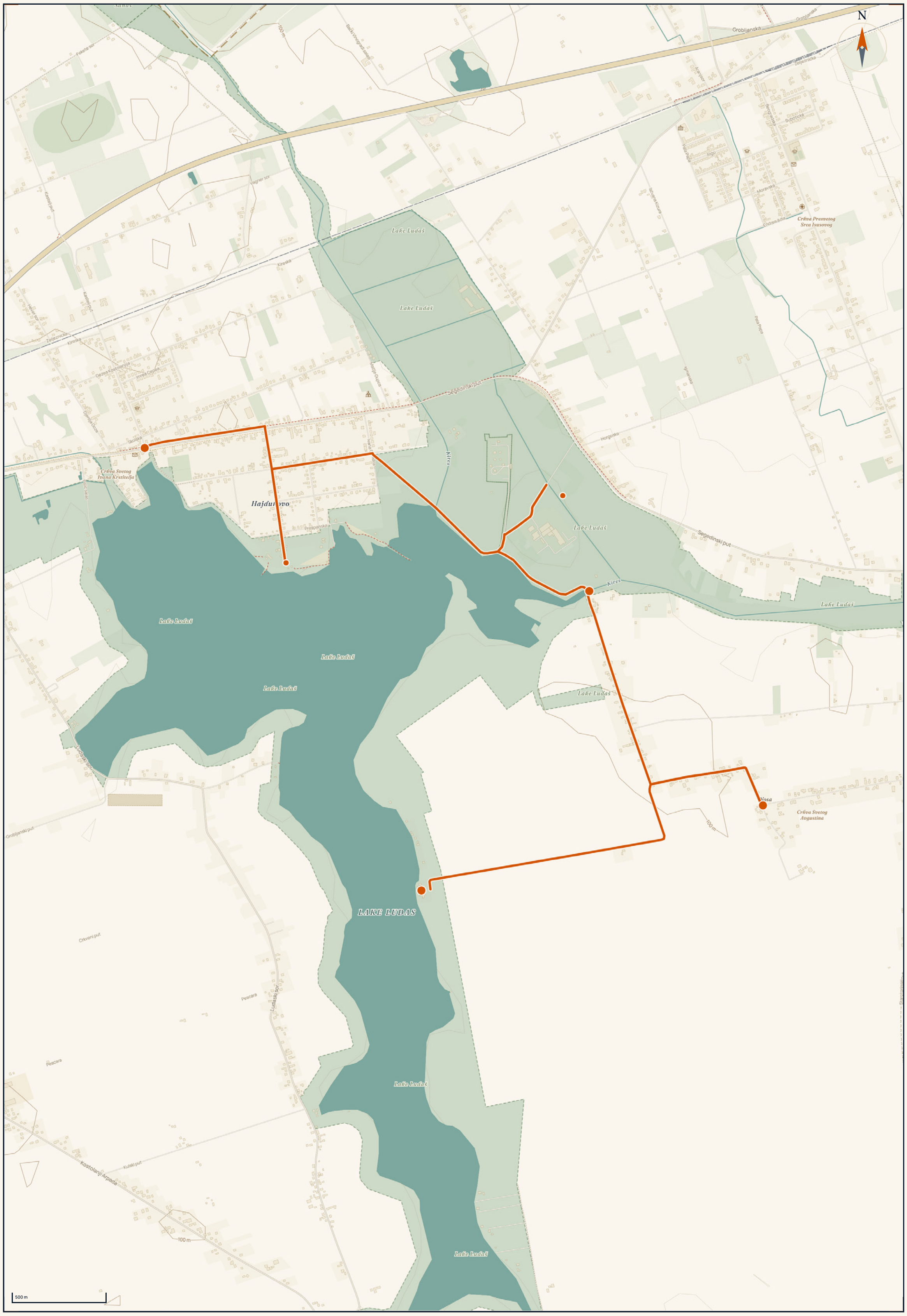
Route 2 - The Ludaš Sunset

After passing through the centre of Hajdukovo, cyclists will see a sign directing them to the Visitor Centre on the shore of Lake Ludaš. The centre **conducts research and** education and works to protect the lake's biodiversity. It was designed by civil engineer Vilmos Tóth of Kanjiža and constructed under an Interreg programme. A ranger service operates from the centre, and several visitor footpaths surround the lake: Ludaš-Čurgo, the western trail; Ludaš-Kireš, the eastern trail; and Ludaš-Selevenj Heaths, leading towards the protected natural area. These walking trails are between 2.3 and 4 kilometres long and can partly be used by bicycles. The lake and wetland landscape lies on a steppe and sandy plateau and contains exceptional biodiversity and countless protected species, about which cycle tourists can learn at the centre. From the shore beside the centre, beyond the tall reeds at the end of the pier, visitors can see the so-called ***Sándor Rózsa Island,*** where legend says the outlaw once hid; it is also known as Devil's Island. Sunset at the Visitor Centre is a special experience, combining unspoilt nature, changing light among the reeds and views of bird colonies, including great egrets, gulls and terns. ‚Floating tables' made of reeds and the strictly protected Eurasian otter (Lutra lutra) may also be seen. The settlements of Hajdukovo, Ludaš and Nosa surround the lake, whose shores are rich in archaeological sites. Cycle tourists can travel through these settlements on paved roads. Along the lake's eastern trail are the Pereš pastures and meadows, where a herd of *Hungarian grey cattle,* ***Bos*** primigenius taurus hungaricus, grazes.

The eastern side of Lake Ludaš has a sandy earth road branching from the turn towards Nosa. Cycle tourists can follow it to Roka Farmstead. The road to Nosa touches the Pereš meadows and reaches the Kireš stream, beside which an earth road continues to the settlement of Male Pijace. Roka Farmstead is a nineteenth-century traditional farmstead with numerous exhibits and preserved artefacts illustrating farm life. Located on the lakeshore, it provides the amenities required by cycle tourists and offers a unique encounter with nature and the traditions of life beside the lake. It also contains a small archaeological museum. This is another preserved location for cycle tourists interested in photographing and observing nature and wildlife at dusk or in the early morning. The route is intended primarily for cyclists motivated by the diversity of landscapes and by riding on different surfaces in order to improve their recreational skills. It is particularly suitable for family and group excursions and for young people wishing to spend their leisure time in nature.

For eco-cycle tourists whose principal interest is observing, studying, drawing, photographing and filming biodiversity, an eco-cycle route already exists within the project Fostering Enhanced Ecotourism Planning along the EuroVelo Cycle Route Network in the Danube Region - EcoVeloTour DTP-055-2.2. It describes important examples of wildlife, particularly specially protected species with their Latin names, along the project's Sand Route, Water Route and Banat Adventure. In this way, these routes are integrated into the Ludaš Sunset route as an offer for a longer stay.

Route 2.2. – The Ludaš Sunset



2.2.5.3. ROUTE: Adventure around the Lakes - Palić, Krvavo Jezero, via Šupljak and Male Pijace

The adventure around Lake Palić, Krvavo Jezero and Lake Ludaš is a longer tour beginning at the Water Tower in Palić and continuing along the western shore towards the sailing club. It passes a fishing lookout and lakeside farmsteads, follows a partly completed cycle path past small fishing lagoons beside the lake and then continues along an earth road to the third sector of Lake Palić. This sector is separated by an embankment from the fourth, tourist sector. It contains bird islands that provide habitat for numerous species and serve as a corridor for migratory birds and species that overwinter here. Wild ducks, swans, cormorants and many other birds can be observed.

After crossing the embankment, visitors find a birdwatching tower on the shore beside the lake's second sector. A paved passage between the farmsteads, between the third and second sectors, reaches the ring road around Lake Palić. Near the Tisza-Palić Canal, the ring road branches towards the motorway for Novi Sad and Budapest. The canal was excavated to connect the River Tisza with Lake Palić so that water could be pumped into the lake during severe summer droughts. Cycle tourists cross the small bridge over the canal and continue along the paved ring road through a landscape of fields and meadows beside Lake Palić. The Đorđević Farmstead is located in this area and provides a suitable place to rest and take a break, with a range of facilities.

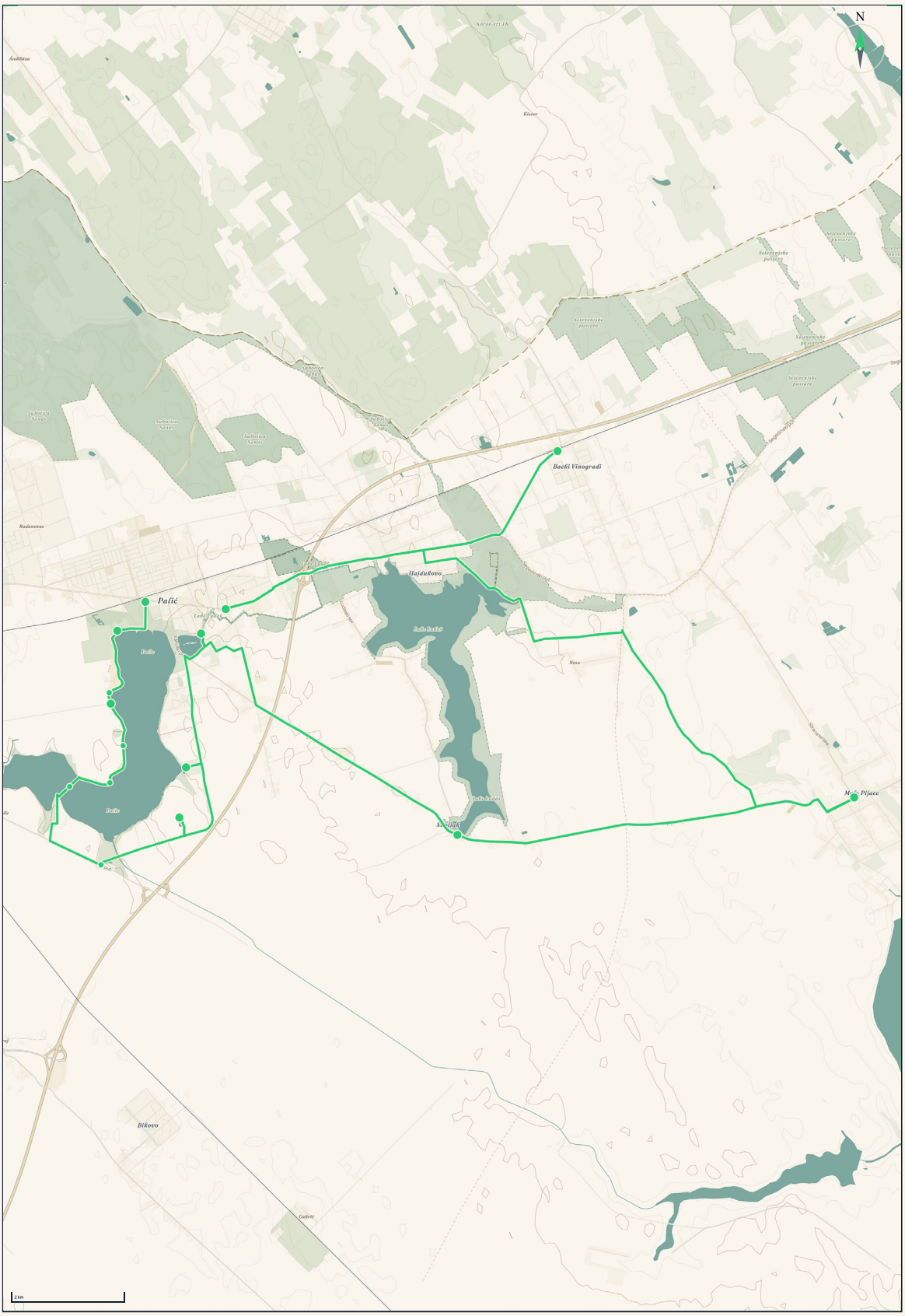
Continuing along the ring road, the route passes an area beside the lake with exceptional biodiversity that is under the highest level of protection and closed to visitors. At the Petra Winery, which produces organic wine and contains several interesting architectural structures, cyclists can join the purpose-built path on the eastern shore directly beside the lake. Several shelters offering protection from rain have been constructed along the path. It continues to the Men's Lido, passing Palić villas, the sandy beach and the Weekend Settlement. Along the shore of the lake's fourth, tourist sector are several cafés, the Paprika Čarda serving fish specialities, the Kapetanski Rit fish restaurant and a patisserie at the Men's Lido.

From the Men's Lido, the route leads towards Krvavo Jezero, whose northern shore offers fishing and swimming, passing the Palić villas and reaching the bridge over the canal connecting Lake Palić and Lake Ludaš. Cyclists choosing this option can follow the canal northwards on a paved road to the main Palić-Hajdukovo road near the renowned Abraham Inn and then continue towards Hajdukovo and Bački Vinogradi on a purpose-built cycle path.

The second branch follows the eastern side of Krvavo Jezero. After crossing the bridge over the Palić-Ludaš Canal, it passes the Navigator facility and follows the shore to the road towards Šupljak and the protected southern section of the lake. Continuing along the paved road, cyclists pass the Youth Settlement and proceed towards the Zvonko Bogdan Winery. They may continue to the settlement of Šupljak. At the far end of the village towards Male Pijace lies the southern arm of Lake Ludaš, known as Budžak. The cyclists' rest area and the Zvonko Bogdan Farmstead are not far away to the north-east. The previously described Ludaš Sunset route can then be followed around Lake Ludaš.

This route is longer and more demanding because it also includes earth roads. It may also be ridden in the opposite direction, from the northern side of Krvavo Jezero towards the Men's Lido, then along the same route to the Palić ring road. From there, a paved road between the farmsteads reaches the lake's third sector, and the route crosses the embankment towards the sailing club. Touring the two lakes provides opportunities to view the green areas and reed beds of their protective zones and to experience their diverse wildlife. The route also offers various places for breaks and rest, together with services at facilities distinguished by their particular offers.

Route 3. – Adventure around the Lakes



2.2.5.4. ROUTE: A Trip to the Neighbours – Tompa and Kelebia and Return

A Trip to the Neighbours - Hajdukovo, Bački Vinogradi, Ásotthalom **and Return**

This route is intended primarily for local residents, who have many family, kinship and friendship ties across the border. It is not demanding even for older cyclists because it follows a cycle path, while for young people it makes an attractive weekend excursion. The scenery is similar throughout: the Kelebija and Daščara forests, orchards and vineyards on sandy soil, gardens, nurseries, greenhouses, meadows and wetland habitats, loess terrain, well-kept rural houses, weekend cottages, and agriculture as the principal activity. The entire region lies on a sandy-loess ridge and is rich in thermal and mineral waters, only a small proportion of which has been utilised. Because of its vineyards and orchards, it has also been called the flower garden of Subotica. International cycle tourists often hurry along these routes to reach the city, but the attractions and stories of the area may encourage them to stop and discover unexpected places marked by information boards. They will realise that the two microregions are very similar and were once not divided by a border, yet each has distinctive features worth seeing and exploring. Instead of making only a brief stop, visitors can spend several hours in nature, at a winery, in the wellness centre of Hotel Vila Majur, at the stud farm, in a church or restaurant, or simply observing life around them.

Local residents benefit greatly from the cycle path: journeys to the shop, a neighbour or work are easier, safer and simpler. The infrastructure enables more frequent cross-border cycling encounters, makes it easier to cross the border and allows residents to use the advantages of both microregions. It encourages meetings among people from small settlements, where there is more that connects than divides them. International cycle tourists should experience this same feeling.

Route 1: A Trip to the Neighbours - Tompa via Kelebija in Serbia and Tompa and Kelebia in Hungary

The excursion to Tompa, via Kelebija in Serbia to Kelebia in Hungary, follows an existing cycle path. Starting in front of the City Hall and continuing along Petőfi Sándor Street, cyclists turn right to join the cycle path on Karađorđev Road towards Kelebija. The path passes the houses of the Zorka local community and follows the main road to the border crossing. The landscapes of the Subotica Sands alternate with meadows and houses with gardens; in the distance can be seen the tops of conifers, black-locust groves growing on sand, vineyards and orchards. Kelebija in Serbia is reached quickly.

Kelebija, Serbia

In Kelebija, the first modern wine cellar built after the phylloxera epidemic was established in 1909 by Josip Pijuković (József Piukovics). Its distinctive feature was the method of storing wine, not in barrels but in concrete tanks and ‚glass barrels'. The estate of the large landowner Josip Pijuković stood on the Kelebija manor, today on the left-hand side of the road towards Tompa immediately before the border crossing. A residential building already existed on the Pijuković manor in 1879. It has now been completely renovated and houses the Vila Majur restaurant. Josip Pijuković's cellar still exists. Because it lies on the ‚Wines of the Sand' wine route, it deserves protection as part of the area's cultural heritage.

Kelebija has two churches, one Roman Catholic and one Orthodox, and is known for the Krnajski House and its thirteen wells. The Kelebija Stud Farm has Lipizzaner horses, a landscaped park, a carriage museum and a restaurant. Carriage rides through the forest are also organised.

The artificial Majdan Lake lies within Kelebija Forest. It formed more than three decades ago as a result of sand excavation, when water gradually filled the pit and created a lake. As there are no polluters nearby, it became a swimming and excursion area, although its water level is now falling because excavation has ceased. Majdan functions like an artesian well, drawing down groundwater and consequently affecting the surrounding vegetation. It is now a protected natural site supplied by precipitation. The area has been rehabilitated and equipped with wooden tables and benches, a children's playground and waste bins. Cyclists are welcome, but motorcycles and quad bikes are not. The Spartak Mountaineering Club organises walks through Kelebija Forest that include a visit to Majdan. Local residents often cycle to the site because of its calming natural environment. International cycle tourists can reach Majdan on a paved road and experience an uncommercialised natural setting, together with the local culture - and occasional lack of culture - associated with outdoor excursions.

Kelebija also has a summer cinema on a distinctive property at 35 Graničarska Street, with a building made from straw, sand and clay. It is attractively arranged for creative workshops, concerts, exhibitions and performances and serves as a small cultural centre for artists and young people. Surrounded by forest, it is ideal for creative work. Cycle tourists can connect with the creativity of young people here and recharge spiritually.

After crossing the Serbian-Hungarian border, visitors reach a popular discount shopping centre on the Hungarian side, where residents of Subotica often shop. Transit tourists also stop there for supplies. Local shoppers can frequently be seen crossing the border by bicycle and returning to the city with heavily loaded baskets.

Tompa

Tompa is a small town set in a wooded and meadow landscape ideal for walking, easy cycling, excursions and **rest.** Its name probably derives from László Tompa, a Cuman captain mentioned in a document from 1370. In modern times, the first building on the Tompa plain was an inn erected in 1823 at the crossroads of the Subotica-Kiskunhalas and **Baja-**Szeged trade routes. Tompa belonged to the territory of Subotica. Baron Redl owned the largest estate here and built a manor house and chapel on his property. For a long period, the only public building in Tompa was the school, completed in 1876. The first church was built in 1911, when a permanent gendarmerie station was also established. Although the Tompa Puszta had not yet developed into a village, it was officially declared a settlement in 1922.

The Redl family manor house, built around 1860, is particularly interesting. Beside it stands the Neo-Gothic Church of St Anne, whose roofs feature Zsolnay majolica. The manor grounds contain a park where peacocks roam and a fifty-hectare arboretum created by Baron Redl at the same time as the manor house. At the end of the park stands the Gloriett lookout, beside which a marble memorial was erected to Pimi, Baron Béla Redl's favourite dog. The Church of St John of Capistrano is another notable building. This parish church was constructed between 1909 and 1910 in the Eclectic style. It is 47 metres long and 14.5 metres wide, with a 49-metre tower. Concerts have been held within its walls in recent years. Following renovation, only one tower remains.

The Collection House opened on 1 July 2007, the third anniversary of Tompa's designation as a town. It displays old rural objects and tools collected over many years by the retired teacher Mrs Mihály Pap, with the assistance of numerous teachers who helped arrange the collection.

Other attractions include the Town Hall and the Baptist Church.

Cycle tourists can visit all these sites within a short period, although a rest in the manor's arboretum offers a particularly vivid experience.

Kelebia, Hungary

Local residents will find it interesting to rediscover forgotten details from the history of the two Kelebias, while international cycle tourists will be surprised that such small settlements have so much to tell about their shared past.

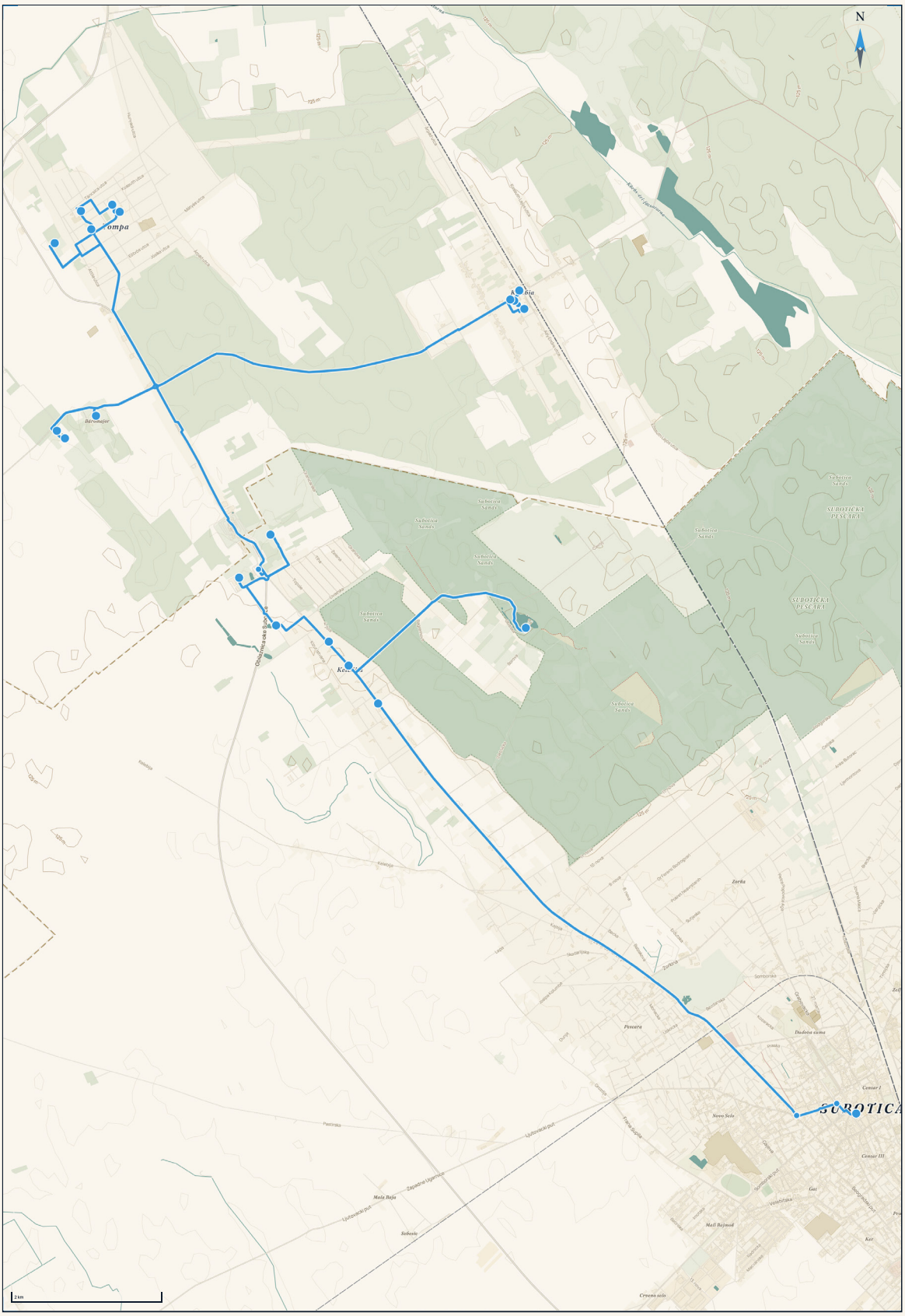
As early as the thirteenth century, a document mentioned Simon filius Wasa de Kelyb, a Cuman leader, as the founder of the settlement. Roads towards Baja, Kiskunhalas and Mélykút crossed this part of the plain.

Following the Treaty of Trianon, the settlement of Kelebija was divided into two parts, creating two villages with the same name: Kelebija on the Serbian side and Kelebia on the Hungarian side. The Hungarian Kelebia received village status in 1924 and was able to continue developing. The centenary of the village was celebrated in 2024. It lies in a wooded setting and contains several interesting sites: the Railway Memorial House, created in 2001 from an old railway guardhouse near the new station, where the original furniture can be seen; the Roman Catholic church; the Trianon Memorial; and the Sándor Rózsa Tree. During archaeological excavations at Kelebia, the skull of a 20- to 25-year-old Avar woman was found. A facial reconstruction based on the skull forms part of the exhibition In Search of a Vanished People in Kecskemét.

The Sándor Rózsa Tree, associated with the famous outlaw, is a 150-year-old white poplar (Populus alba) protected as a natural monument at local level. According to legend, it was one of the outlaw's favourite resting places. Today it is a distinctive point on the Great Plain section of Hungary's National Blue Trail, within the nature park, and is one of the town's landmarks and a very popular destination for cycle tourists in the Felső-Bácska-Homokhát Nature Park.

After visiting Kelebia, returning by the same route is recommended. Cycle tourists will have experienced a combination of impressions they would not have expected within such a small area.

Route 4. – A Trip to the Neighbours – Tompa and Kelebia and Return



Route 2: A Trip to the Neighbours - Hajdukovo, Bački Vinogradi, Ásotthalom and Return

The cycle path from Palić reaches the centre of Hajdukovo **(Hajdújárás),** situated on the edge of Lake Ludaš. To the west of the village are the linear farmstead settlements of Čurgo and Ludaški Šor. The village lies on the sandy soil of the Subotica-Horgoš Sands, and viticulture and fruit growing are its principal activities. East of the village are pastures beneath which oil deposits have been found, so drilling rigs can be seen from the path. A cycle path passes through the village. The small settlement of Nosa forms part of Hajdukovo, and information boards about the protected natural area and Lake Ludaš stand near the bridge over the Kireš stream separating them. Archaeological excavations around the village have revealed evidence of ancient and prehistoric settlement. Residents are known for growing apples, which they store in their own Golden Fruct cold-storage facility. Vegetable production is also important. The major organic-agriculture brand and processor Suncokret is located beside the former Jewish Ingus Manor. It has received international awards for its cold-pressed oils and spreads made from oilseeds and welcomes interested visitors. The village has Roman Catholic and Adventist churches. Residents organise Harvest Days in late September and an Advent programme in winter, and they enjoy preparing food in cauldrons for various events. Local venues include the Vinski Dvor restaurant and winery, known for aperitif wines, the Hedera restaurant, the Jazzik café, the seasonal Sunjog Čarda near the Visitor Centre and Roka Farmstead outside the village on the lakeshore. All are accessible by bicycle. Riding is safe along the path, bordered by maintained and mown lawns, flowers on lamp posts, and carefully tended trees and shrubs. Hajdukovo provides the ideal experience for cycle tourists who wish to slow down and observe their surroundings.

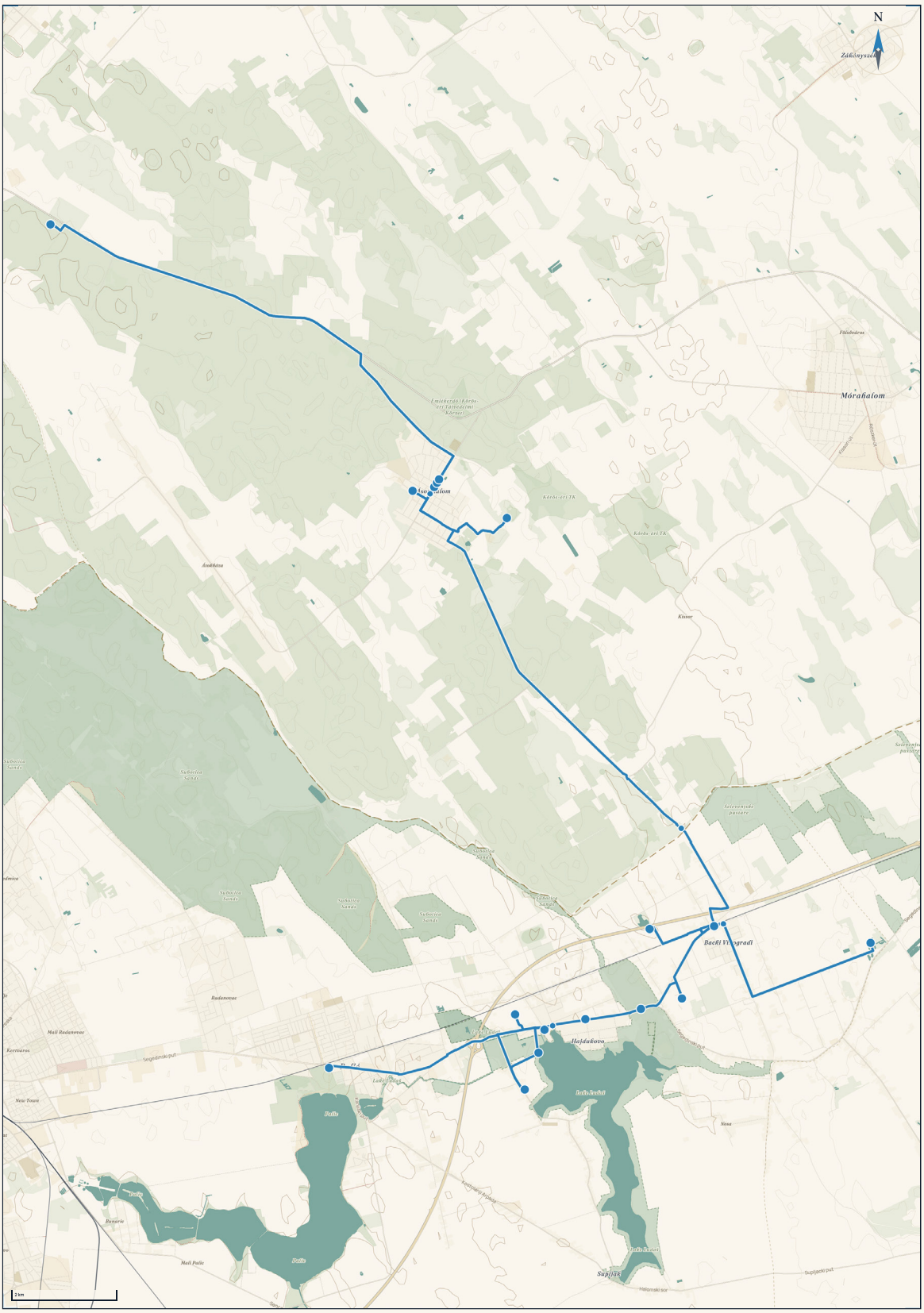
Bački Vinogradi (Királyhalom; Bácsszőlős) is linked with Hajdukovo by a cycle path, making travel between the two villages and their surroundings easier for residents. Its landscape is similar to that of Hajdukovo. The village has an organic producer operating according to permaculture principles and growing cornelian cherries, mulberries, quinces, sea buckthorn, medlars, elderberries and indigenous quince varieties. The old Bánkúti wheat variety is also preserved. Cyclists wishing to see such a garden can visit the Berényi family. One of the principal attractions is the Tonković Winery, known for its Kadarka variety, where visitors can taste wines from sandy soils. The large Džambula nursery, which produces deciduous and coniferous trees and other planting material, is another place of special beauty; its landscape is particularly impressive in summer. At the end of the village towards Horgoš lies the artificial Lake Balint, ideal for fishing and equipped with picnic benches and small bridges between its islands. Accommodation and traditional food are also available, so cyclists can obtain a complete service before nightfall if they wish to continue their journey the following day.

While passing through the village, cyclists experience a sense of peace, as though time has slowed down, despite the residents' hard work and busy lives. They pass gardens with ethnographic decorations, authentic farmsteads, vineyards and orchards. The modern Subotica-Horgoš railway line runs through Bački Vinogradi, allowing cyclists to shorten their ride by train, which also stops at Palić and Subotica.

The approximately five-kilometre cycle path from Bački Vinogradi towards Ásotthalom was constructed within the cross-border OPTI-BIKE project, making it easier for local residents to cross the border towards Hungary while also promoting cycle tourism. Under the new OPTI-BIKE 3 project, a bicycle bridge will be built at the exit from Hajdukovo, while a further 2,827 metres of cycle path will be constructed along the main road bypassing Bački Vinogradi towards Male Pijace, thereby connecting another village.

Ásotthalom is a border *village* for nature lovers, with several attractions. Its best-known natural attraction is the Meadow of Wonders (Csodrét), a protected area with distinctive flora and fauna of the sandy landscape, where rare plants and hundreds of insect species can be seen. Its floral beauty begins to unfold at the end of February and changes from week to week. Until August, bulbs, horsetails, field violets and beautiful orchid species succeed one another. In the sandier parts of the meadow, the wind carries threads of feather grass. A developed educational trail uses information boards to explain the area's natural values. The surroundings are rich in pine forests and sandy roads. A popular route leads to the Back Chapel, a favourite destination for walkers and cyclists. The village also has the Ásotthalom Homokhát Beach and Beer Garden. Several family wineries, including those of Sándor Somodi, Sándor and István Dobák and István Tóth, offer local wines produced on sandy soils. Horse riding through the sandy landscape and meadows is also popular in the surrounding area.

🇷🇸🇭🇺 Route 4. – A Trip to the Neighbours – Hajdukovo, Bački Vinogradi, Ásotthalom and Return



2.2.6. Integration of Existing Gastronomic and Wine Routes into the OPTI-BIKE 3 Routes; Accommodation and Service Facilities for Cycle Tourists

The four routes developed under the OPTI-BIKE 3 project pass gastronomic and wine venues already included in the microregion's gastronomic and wine routes and recognised as traditional, high-quality providers. Cyclists prefer businesses located on or close to their chosen route. Cycle tourists will rarely make a major detour solely for a gastronomic experience unless the offer is exceptionally distinctive and the approach genuinely bike-friendly. Every provider located along a route should clearly indicate that it is bike-friendly and offer services suited to cycle tourists' needs. Their primary motivation is to cycle through the landscape and reach the planned destination. A cycle tourist must feel particularly comfortable at a stop in order to decide to remain and extend the stay by one or more days.

Wineries and wine shops located on or near the four routes include:

- Čuvardić Winery at Čuvardić Farmstead, on the road towards Kelebija;
- Di Bonis Winery, 14 Tuk Ugarnice, on the Szeged road towards Palić;
- Zvonko Bogdan Winery, 45 Kanjiški Road, on the road towards Šupljak;
- Reljić Winery, 66 Kanjiški Road, on the road towards Šupljak;
- Hompót Winery, 192 Ludaški Đor, on the road from Šupljak towards Hajdukovo;
- Vinski Dvor, 221 Horgoški Road, immediately at the entrance to Hajdukovo;
- Maurer Winery, 1 Kaštelski Road, Hajdukovo, from the village centre towards the railway line;
- Tonković Winery, Bački Vinogradi;
- Petra Winery, 222 Salaši, Palić.

The wineries have tasting rooms, receive visitors at specified times and sell bottled wine. When selecting a recommended route, cycle tourists are advised to choose a winery in advance and, where possible, arrange a visit. Sometimes they select the winery first and only then choose the route leading to it. Cycling and wine routes complement one another. Cycle tourists enjoy vineyard landscapes, particularly when wineries are located directly beside the vines. Vineyards are attractive, traffic-free areas ideal for cycling and provide an interesting, authentic experience. They are usually family-run wineries whose hosts devote time to engaging visitors, sharing information about tradition and telling unusual anecdotes. Resting at a winery is a well-earned reward after physical exertion, especially when combined with local slow-food gastronomy. Integrated Bike & Wine routes exist in many parts of the world, and both activities contribute to rural development. The wineries along the Subotica-Horgoš wine route are known above all for ‚wines of the sand', while cyclists use sections of road passing through vineyards planted on sandy soil. The wind that carries sand across the plain can create an additional cycling challenge. The OPTI-BIKE routes are ideal for combining the two activities because the network of cycle paths between Subotica, the surrounding settlements and border crossings is continually expanding. Most of these wineries are located along EuroVelo 13 and are marked on the route.

The gastronomy of the entire microregion is known for combining the cuisines of the different peoples who live there. Many dishes, with local modifications, occur in all of these culinary traditions because residents have adopted them as their own. Hungarian, Serbian, Bunjevac, Jewish, German, village and traditional farmstead cuisines together form a multicultural gastronomy in which ground red paprika is the principal spice. Dishes made from river fish are also prepared and provide

tasty, light food for cycle tourists. From the broad selection of restaurants, cafés and fast-food venues, only those located directly on the routes are listed below.

- Vila Majur and Kelebija Stud Farm, Kelebija - restaurants;
- Basch House, Subotica - restaurant and beer house;
- Spartak, Subotica - traditional restaurant serving national dishes;
- Bates, Subotica - traditional restaurant serving national dishes;
- Boss, Subotica - restaurant, pizzeria and café;
- Stara Picerija, Subotica - restaurant, café and pizzeria;
- Renesansa, Subotica - restaurant and café;
- Mali Trg, Subotica - restaurant and patisserie;
- Denis, Subotica - restaurant and café;
- Arte de Gusto, Subotica - restaurant;
- Zona, Subotica - café and restaurant;
- Paligo Palace, Palić - restaurant;
- Pub Palić - pizzeria;
- Borsalino, Palić - pizzeria;
- Vila Viktorija Plus, Palić - restaurant;
- Riblja Čarda, Palić - fish restaurant;
- Men's Lido, Palić - patisserie and café;
- Kapetanski Rit, Palić - fish restaurant;
- Paprika Čarda, Palić - fish restaurant;
- Abraham, Palić - traditional restaurant;
- Jelen Farmstead, Palić - restaurant;
- Guljaš Čarda, Ludaški Šor - traditional čarda restaurant;
- Hedera, Hajdukovo - restaurant;
- Jazzik, Hajdukovo - café and restaurant;
- Origo Buffet, Bački Vinogradi - traditional buffet;
- Kovač 1920 Farmstead, Nosa - traditional ethnographic household.

In addition to the excellent wine and gastronomic offer, accommodation is an important component of the routes. Although Subotica has a large number of accommodation facilities in different categories, very few are specifically oriented towards the needs of cycle tourists. None currently meets the full range of requirements and quality standards needed by this group, and greater attention should therefore **be paid to the issue.** The Tourism Organisation maintains an up-to-date classified register of accommodation facilities, and cycle tourists can obtain accommodation information from its office in the City Hall. Facilities regarded as **partly** bike-**friendly** include:

- Villa Larus, which is very popular; guests can rent bicycles at the villa, use secure parking **and join organised cycling tours around Lake Palić;**
- Navigator, which provides secure bicycle parking within the property, a swimming pool, a landscaped garden and easy access to the cycle paths around the lake;
- Hotel Vila Majur, which operates its own bicycle-rental service;

- Galleria, which has a bicycle and equipment shop;
- Artist Hotel, which provides secure conditions for cycle tourists;
- Put Svile Hostel, which offers a secure, enclosed bicycle-storage area and is popular among cycle tourists;
- Panorama Guesthouse, which provides bicycle parking, a sauna and a swimming pool;
- Rooms Kod Simketa, which provides bicycle parking in the courtyard.

Cycle tourists need information about repair services, cycling-equipment shops and bicycle-rental possibilities because unforeseen situations can always occur. Bicycles can be rented at several locations in the city and at Palić, including through the municipal SuBike rental system.

Bicycle-repair services are an essential element, and several are available in the city:

- Capriolo Centre Subotica, 17 Matija Korvin Street;
- EURO-BIKE, specialising in bicycle servicing and spare-parts sales, 6 Zmaj Jovina Street;
- Venera Bike, a large shop with a service department, 1 Matije Gupca Street;
- Bike Spot (Mega Favorit), servicing conventional and electric bicycles, Jo Lajoša Street;
- Miklos Husli Djuris, a private bicycle and motorcycle repair service, 92 Senćanski Road;
- Mega Favorit Palić, a sales and showroom facility providing support for cyclists, 106 Horgoški Road;
- SuBike Station Palić, providing minor repairs, information and rental services, located by the Women's Lido.

Given that Subotica is a traditional cycling city whose residents have a strong attachment to bicycles, and that there is an ambition to attract as many international cycle tourists as possible, greater attention must be paid to the future development of service infrastructure.

CHAPTER III

3. Marketing of the Project's Local Cycle Routes

3.1. Online and Offline Marketing, Service Providers as 'Bike-Friendly', and the OPTI-BIKE Brand

The sustainability of local routes is closely linked to marketing activities aimed at promoting the routes, maintaining information boards, analysing data on cycle tourists, ensuring the proper operation of bicycle counters, cooperating with service providers and improving bike-friendly quality. Route management should therefore be established, or responsibility for these activities should be delegated to the local authority, the tourism organisation or the micro-destination management body.

Marketing activities should respond to the expectations that users place on service providers along local routes in several respects:

- services offered as a tourism product should meet users' functional expectations, including service quality, safety, comfort and value for money;
- services should meet users' emotional expectations by providing experiences, new impressions and variety;
- services should meet users' value-based expectations through distinctive settings, diversity and novelty;
- services should attract potential users and awaken their interest, even when they had not previously intended to explore the local routes or purchase a particular service.

The elements of the marketing mix (7Ps) are used to position the tourism product in the market in relation to its competitors. Optimising the marketing mix means continually adapting the tourism product to users' needs and wishes, monitoring service quality and specialising the offer so that it has a distinctive and unique character.

Cycle tourists and local residents using the OPTI-BIKE routes have similar needs. The elements of the marketing mix must therefore serve both target groups at the same time. When creating the tourism product, the marketing mix of private-sector service providers must also be coordinated with micro-destination management and should include:

- clearly defined routes; a coherent network of existing routes and paths and their interconnections; circular routes and possible combinations;
- the shortest and least obstructed roads, together with road safety;
- signage and paths leading directly into natural areas;
- routes that remain passable in adverse weather and the possibility of returning by public transport;
- repair services, accommodation, food, healthcare and other necessary services.

Linking micro-destination marketing with the marketing activities of service providers helps achieve the following objectives:

- an adequate amount of readily available information;
- greater recognition of the local routes and the micro-destination;
- an increase in the number of cycle tourists up to the destination's sustainable carrying capacity, without causing negative environmental impacts.

The number of cycle tourists using a local route will be monitored by means of a bicycle counter. The data collected will support evidence-based decisions about what should be changed and which communication channels should be strengthened when addressing cycle tourists.

When service providers market their offer to cycle tourists, it is essential that they provide clearly promoted bike-friendly services of consistently high quality. In addition to accommodation and food, these services include:

- secure storage for bicycles and equipment;
- washing and drying facilities for cycling clothing and equipment;
- bicycle washing and minor repairs;
- information tailored to the target group.

Cycle tourists can be classified according to the bicycles they use; whether they travel individually or in groups; the regions they come from; whether they are local residents who prefer frequent one-day cross-border trips; the season in which they travel; whether they arrive as members of an association; and similar characteristics. The bike-friendly marketing mix must meet the needs of all cycle tourists, regardless of the subgroup to which they belong.

Marketing communication aimed at cycle tourists should take place online, using all available social networks, platforms and websites, including those of the project, service providers, the city's tourism organisation, the city administration, relevant public enterprises and specialist cycle-tourism platforms. It should also use QR codes, bloggers and influencers, promotional videos, advertisements, recordings and photographs, as well as all tools already established through the OPTI-BIKE 1 and 2 projects.

Offline communication with cycle tourists includes interviews, information boards, trade fairs, promotional gifts from service providers, posters and leaflets, printed promotional materials and their distribution, maps, newsletters and even creative workshops.

The numerous events held in the city are particularly suitable opportunities for distributing promotional materials, as are events organised by cross-border partners.

A combination of online and offline marketing activities will reach and engage the required target groups.

The OPTI-BIKE brand already has a recognisable logo inherited from the previous OPTI-BIKE 1 and 2 projects, on which OPTI-BIKE 3 builds. This logo should be used to mark the network of local routes on all information boards and marketing materials. Service providers catering for cycle tourists are also encouraged to display it alongside their own logos, where applicable. In the coming period, providers of services for cycle tourists must make an effort to become bike-friendly, since this function must form part of the brand and inspire confidence in service quality. This will give cycle tourists good visibility, clear recognition and an easy-to-follow identity throughout the route network.

The brand should evoke the unique atmosphere of the local routes and, above all, the spirit of the place - the genius loci. When encountering promotional materials, cycle tourists should experience communication elements that inspire:

- curiosity and a sense of surprise during the ride;
- inspiration to make different discoveries along individual local routes;
- enthusiasm for exploration arising from the diversity of landscapes along the routes;
- a sense of uniqueness combined with something familiar.

In addition to its visual identity and logo, a brand also consists of slogans, jingles and symbols. A brand is an established identity that makes tourists associate it with a set of services, the quality they can expect and the level of travel safety provided. A brand representing a set of services reduces the tourist's risk of making poor travel decisions. Local routes are also positioned as a tourism product, together with their accompanying services, through the brand. The brand comprises a complex set of associations that guides cycle tourists towards the experiences available along the local routes. These experiences are numerous and highly diverse, serving every target group and field of interest. It is therefore recommended that local-route management continuously promote and monitor the brand and redesign it whenever necessary.

3.2. Public Relations and Other Marketing Tools

Public-relations activities do not require the same level of financial investment as marketing campaigns. They comprise various programmes designed to promote the local routes, such as familiarisation trips for journalists, media representatives, tour operators, agents, incoming tourism agencies, bloggers and influencers. They also include interviews and stories published by satisfied cycle tourists. The purpose of building good relations with the public is to create a positive opinion of the local routes and protect the image of the micro-destination. In this way, a recognisable image is created both among the general public and among cycle tourists. These are consciously planned actions directed towards specific objectives, reducing the influence of uncontrolled and purely spontaneous public opinion.

The public-relations tools suitable for cycle tourism can be presented through the English acronym PENCILS, based on Kotler (2005):

P (publications) - tourist brochures, publications and reports on events;

E (events) - events and organised activities;

N (news) - news, destination stories and points of interest along the local routes;

C (community) - activities responding to the needs of the local community in the surrounding area and along the routes;

I (identity) - the identity of the micro-destination and all forms of branded business materials intended for cycle tourists;

L (lobbying) - lobbying to reduce the harmful effects of decisions and legislation that could negatively affect the local routes, particularly through landscape degradation;

S (social responsibility) - socially responsible activities aimed at building a good reputation, maintaining route facilities and ensuring that they are properly cared for.

Experience has shown that the most successful micro-destinations coordinate their public-relations activities with service providers, especially when addressing special-interest target groups such as cycle tourists. The micro-destination is advised to use PR activities continuously, as they save money and achieve objectives with considerably fewer resources.

Alongside public relations, the most important marketing tools are those based on the internet. This does not mean that traditional marketing tools no longer exist or are unimportant, but for cycle tourists the internet is the primary source of information. This is particularly true for younger generations, for whom the internet is an integral part of everyday life.

The main marketing channels are online marketing campaigns conducted across various platforms.

In the contemporary world, online marketing campaigns are also important for cycle tourists. Possible options include:

Google Ads, which is based on a cycle tourist's intention to search for a destination of interest.

Campaigns may include:

- Search campaigns (Search Ads), for example, 'local cross-border cycling tours along EuroVelo 13';
- Display campaigns (banner advertisements): visual advertisements on portals and blogs related to cycle routes, featuring the recognisable OPTI-BIKE brand and its visual identity;
- YouTube campaigns (video advertisements): inspiring videos of locations along the OPTI-BIKE 3 routes that communicate the emotional experience of the destination;
- Meta Ads (Facebook and Instagram): advertisements shown to people who have already visited the website, encouraging them to make a booking decision. Meta platforms are ideal for tourism advertisements based on visual experience. Possible campaign formats include:
  - images, video advertisements, presentations and photographs of route locations;
  - Stories and Reels advertisements, using short stories and messages for younger target groups;
  - promotion of events, festivals and outdoor activities;
  - direct emails to individual cycle tourists;
  - TikTok advertisements - one of the most effective platforms for younger cycle tourists aged 18-35, using short, engaging videos based on first-hand experiences;
  - dynamic TikTok video formats;
  - In-Feed advertisements, meaning short videos of 15-30 seconds shown between the items users scroll through; these can link directly to the route website or to a service provider's registration or booking page;
  - TopView advertisements, shown on the opening screen; these are paid and more expensive, and therefore require an exceptionally engaging video that appears first when TikTok is opened, making them suitable for launching campaigns;
  - Spark Ads, which amplify existing content; these are paid advertisements created from existing TikTok videos related to the topic and offer a useful way to cooperate with influencers such as local tour guides and travel bloggers.
  - Artificial intelligence may also be used for marketing purposes. It can analyse large quantities of data, including website-visit statistics, social-media interactions, email-campaign results and online-booking patterns. Algorithms can identify, over a given period, the countries from which cycle tourists arrive, their age groups and the local routes attracting the greatest interest. Analysing these data makes marketing messages and campaigns more effective while reducing advertising costs. This data-driven approach helps ensure that marketing communications

and sales campaigns are purposeful. On the basis of information processed by artificial intelligence, route management or destination management can identify market trends in the cross-border cycle-tourism offer.

3.3. Pictograms and Information Boards That Can Be Used Along the Routes

Pictograms are simple graphic symbols that communicate specific information, instructions or warnings without words. Their main advantage is that they are universally understandable: they rely on visual similarity to the object or action represented rather than on spoken language. They are used in public spaces, on product packaging, in technology, transport, safety and many other fields. They are usually stylised, clear symbols in highly visible contrasting colours. Their origins can be traced to the writing systems of the earliest peoples, in which symbols represented concepts, events, stories or thoughts, as in Egyptian hieroglyphs, Sumerian writing and the scripts of other ancient cultures.

Pictograms for cycle routes, especially in natural areas, are used for **navigation** and **to provide information about** route **difficulty** and cyclist safety. They are standardised so that visitors from different countries can understand them, as in the case of the EuroVelo route pictograms. The most important are those indicating the difficulty level of a route. These pictograms are placed along paths on wooden supports, posts or metal boards. They include standardised navigation symbols and signposts, although non-standardised versions also exist, depending on local needs or the artistic vision of a particular association, project or public institution.

A bicycle shown on a white background is the standard sign for a cycle path or route. A number is often displayed beside the bicycle pictogram, for example 'Route 1', helping users follow the route on a map. An arrow indicates the direction of travel. A curved arrow warns of a sharp bend or a change of direction.

EuroVelo logo: a blue circle with yellow stars and a route number, indicating that the route forms part of the European cycle-route network.

Source: saobracajniznakovi.com

In Serbia, tourist signage, including cycling signage, is installed in accordance with the Rulebook on Tourist Signage. As part of its project, the Cycling Federation of Vojvodina installed EuroVelo information boards along Routes 6, 11 and 13 in Vojvodina, so recognisable information boards can be found in the city and its surroundings.

Red-and-white hiking waymarks indicating routes and paths can be seen in mountain areas. Similar markings are also found in lowland forests and sometimes overlap with cycle routes.

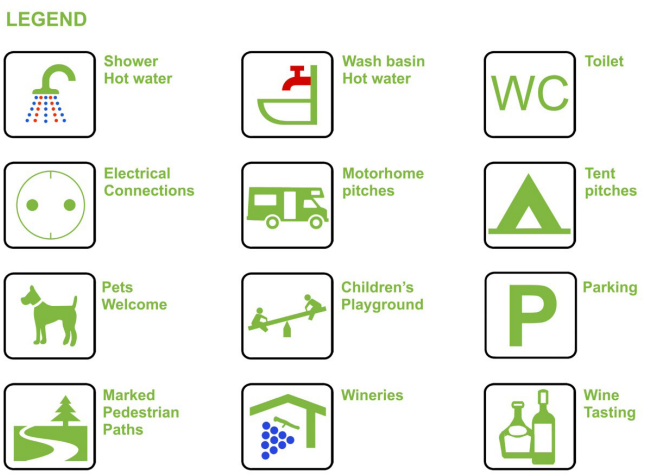
Routes also use pictograms for supporting facilities that are important to cyclists:

- **spanner: indicates** a self-service bicycle-repair station;
- **lightning** bolt/battery: indicates a charging point for electric bicycles;
- **bench/tree:** indicates a rest area or viewpoint;
- **crossed-out bicycle:** indicates that cycling is prohibited, usually because of nature-protection requirements or danger.

Pictograms commonly also indicate accommodation, restaurants, pharmacies, emergency medical services, campsites, police, lakes, drinking water and similar facilities.

The OPTI-BIKE 1, 2 and 3 projects have their own pictogram, which should be included as a recognisable symbol on information boards along the routes.

Some pictograms presented as interesting examples and conceptual solutions from the region:



CHAPTER IV

4. Conclusions and Recommendations

1. OPTI-BIKE 3 is a continuation of the previous OPTI-BIKE 1 and 2 projects. Its focus is on the construction of cycling infrastructure as a continuation of the cycle paths planned for the microregion, thereby connecting the cross-border micro-destinations. A separate project component concerns the development of cycle-tourism routes. The broader framework of the project is sustainable development and its impact on urban transport, with particular emphasis on advancing cycling not only as a means of transport but also as a tourism product - cycle tourism. Drawing on the scientific and professional theory of urban transport, cycling is an indispensable element of local development, as discussed comprehensively in Chapter I.
2. Cycle tourism, as an increasingly attractive form of using leisure time for sport and recreation, is developing rapidly, also owing to the existence of the EuroVelo cycle route network.
3. The study confirms the hypothesis that natural, tangible, intangible, historical and traditional resources suitable for tourism valorisation for cycle-tourism purposes exist on both sides of the border.
4. The study develops four thematic routes, with several alternative itineraries, designed to meet the varied interests of LOHAS cycle tourists and the local cross-border population. The numerous points of interest along the routes provide opportunities for new knowledge, independent exploration, enjoyment and relaxation in diverse settings.
5. Accommodation facilities and a gastronomic and wine offer are available for cycle tourists. In the further development phases of the OPTI-BIKE project, it is recommended that service providers wishing to meet cycle tourists' requirements receive training to improve service quality in accordance with the specific standards for this form of tourism and the experience of providers along the EuroVelo network. At present, service providers do not meet these specific 'bike-friendly' standards.
6. All available marketing tools and public-relations activities should be used to increase the project's visibility, while information should be continuously updated to reflect changes.
7. The project has its own logo, whose promotion creates a brand association with the routes and the microregion among the target groups of cycle tourists.
8. It is recommended that a management body for the cycle routes defined by the project be established within the local authority. This body should continuously manage the routes, research cycle-tourist satisfaction in the microregion, monitor the quality of service providers, inspect the information boards and street furniture installed along the routes, administer data and information, develop the project brand, and propose ideas for developing cycle tourism with cross-border effects.
9. Cycle tourism in Europe continues to grow. The microregion's participation in this trend has been recognised and will contribute to local economic development in the cross-border micro-destinations.
10. The construction of cycle paths has made cross-border connections for local residents simpler, more attractive, more enjoyable and more purposeful.

CHAPTER V

5. References

1. Fostering Enhanced Ecotourism Planning along the EuroVelo Cycle Route Network in the Danube Region, EcoVeloTour DTP-055-2.2; funded by the Interreg Danube Transnational Programme

2. Gordana Prčić Vujnović: Subotica Promenade, Milko Association, 2023

3. https://gradsubotica.co.rs/tri-price-o-sokolskom-domu/

4. https://visitsubotica.rs/sta-videti/secesijski-objekat/palata-rajhl-ferenc/

5. https://bookaweb.com/sr/ad/1979

6. http://www.heritage-su.org.yu/sr/popis/index.

7. https://www.subotica.com/vesti/zavicajna-istorija-veoma-vazna-id17958.html

8. https://sr.wikipedia.org/sr-el/%D0%93%D1%80%D0%B0%D0%B4%D1%81%D0%BA%D0%B8_%D0%BC%D1%83%D0%B7%D0%B5%D1%98_%D0%A1%D1%83%D0%B1%D0%BE%D1%82%D0%B8%D1%86%D0%B0

9. http://podaci.com/_gRoute/_Vikend-u-opstini-Subotica-51547.php

10. https://www.gf.uns.ac.rs/~zbornik/doc/ZR18.10.pdf

11. https://korzoportal.com/viktorija-aladzic-najveci-suboticki-graditelj-titus-mackovic/

12. https://manager.ba/vijesti/samo-jednom-dijelu-turizma-otvorilo-se-tr%C5%BEi%C5%A1te-vrijedno-44-milijarde-eura

13. https://sr.wikipedia.org/wiki/%D0%92%D0%BE%D0%B4%D0%BE%D1%82%D0%BE%D1%80%D0%B0%D1%9A_%D0%BD%D0%B0_%D0%9F%D0%B0%D0%B-B%D0%B8%D1%9B%D1%83

14. http://palic.org/letnjapozornica

15. https://visitpalic.rs/dozivite-palic/palicka-setnja/

16. https://www.dvorcisrbije.rs/ingus-hajdukovo/?pismo=lat

17. https://palic-ludas.rs/index/page/id/86/lg/sr#main

18. https://suistorija.wordpress.com/wp-content/uploads/2016/01/broj-18-za-internet.pdf

19. https://www.maglocistac.rs/kultura/prostor-u-kom-se-rada-znanje-letnji-bioskop-na-kelebiji-mesto-ideja-i-kreativne-umetnosti-foto

20. http://ujkor.hu/content/kelebia-egy-hatarkozseg-szuletese-1918-1925

21. https://www.subotica.com/vesti/dren-u-soku-od-grozdja-i-brasno-od-bankuti-psenice-zaboravljene-vrste-opstaju-kroz-organsku-proizvodnju-porodice-berenji-id49032.html

22. https://www.visitmorahalom.hu/sr/znamenitosti-1/cudnovata-livada-u-asothalomu#:~:text=Na%20delu%20livade%20gde%20ima%20vi%C5%A1e%20peska,stazi%20Livada%20%C4%8Cuda%2C%20gde%20%C4%8Dari%20podru%C4%8Dja%20prezentuju

23. https://asotthalom.hu/

24. https://funiq.hu/1462-tompa

25. https://alliancease.com/mountain-bike-trail-difficulty-rating-system/#:~:text=Easiest%20(white%20circle)%20Easy%20(green%20circle)%20More,black%20diamon

26. Filip Kotler, Ferrari report 2005; https://www.coursehero.com/file/p200o58/The-instruments-of-Public-Relations-The-acronym-PENCILS-The-analysis-of-the/

MARKET ANALYSIS AND DEVELOPMENT OF THE CYCLE TOURISM BRAND AND TOURISM PRODUCT ALONG EUROVELO 13 FOR THE OPTI-BIKE 3 PROJECT

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