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"S5 Bicycle Route" as a Tourist Connection between the Urban Agglomerations of Wrocław and Poznań

Abstract. This article presents the proposal of a "S5 Bicycle Route" using technical roads along the S5 expressway between Wrocław and Poznań. The article presents the assumptions underlying the planning process and describes the methods for promoting the route using landscape visualization. The goal of the project is to plan this picturesque bicycle route of almost 180 km, along the S5 expressway across two provinces (Dolnośląskie and Wielkopolskie). It is assumed that the proposed bike route will exploit technical roads along the existing and planned sections of the S5 expressway. The added value of the project is the repurposing the existing road network to create an alternative to combustion engine traffic and improving the mobility of residents who commute to school and work.

Keywords: bicycle route, tourist infrastructure, landscape visualization

1. Introduction

This article presents a proposal for a "S5 Bicycle Route" following technical roads along the S5 expressway between Wrocław and Poznań. The article presents the assumptions underlying the planning process and describes a method of promoting the route using landscape visualization.

The goal of the project is to plan this picturesque bicycle route of almost 180 km, along the S5 expressway across two provinces (Dolnośląskie and

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Wielkopolskie). It is assumed that the proposed bike route will exploit technical roads along the existing and planned sections of the S5 expressway. The added value of the project is the repurposing of the existing road network to create an alternative to combustion engine traffic and improving the mobility of residents who commute to school and work.

The S5 Bicycle Route project is the first attempt in Poland to create an uninterrupted bicycle route using technical and service roads along the S5 expressway, which is currently being planned and built in sections. This is an exceptional project on account of its scale – when it is finished, the cities of Wrocław and Poznań will be connected by about 180 km of safe bicycle roads. At present, the only existing bicycle roads outside urban areas in Poland run along national, provincial, district or communal roads or along decommissioned railway lines or river embankments. It is expected that once the proposed bicycle route connects towns and cities located along the way, a larger number of residents will be willing to reduce or even abandon the use of cars in favour of emission-free bicycle transport [*Plan ulepszeń dla sieci…* 2019].

2. Materials and methods

Various studies [Umiastowska 2000; Gałkowska 2000; Bartoszewicz 2011; Zatoń, Zatoń 2014] indicate that cycling is one of the most popular forms of physical activity undertaken individually by Poles. According to data published by the Central Statistical Office [GUS 2009, 2013], cycling is an increasingly popular form of active leisure. It is practised by people of all ages and both genders. Given the growing health consciousness, one reason for this popularity are the perceived benefits of cycling.

In order to investigate the cycling infrastructure as an important determinant of tourism and cycling in the region, the authors conducted a detailed review of the available documents. For the purpose of promotion, an online landscape visualization of the S5 Bicycle Route was created. In the initial phase the project work involved collecting and analysing the following documents and materials:

– planning and strategic documents of communes which are the basis for local spatial planning policy,

– an improvement plan for the Air Quality Network under the City Partnership Initiative,

– bylaws of the S5 Bicycle Route Association.

During the review, the strategic diagnosis was examined using force-field analysis developed by Kurt Lewin.

3. The initial state report for the S5 Bicycle Route project

During a workshop held in Rawicz on 29 May 2018, the Local Partnership presented a strategic report for the purpose of the project, based on force-field analysis developed Kurt Lewin [Szwedzka, Lipniak 2017], which examined helping and hindering forces that facilitate and block progress towards the goal of creat-

Table 1. Benefits for communes resulting from launching the S5 Bicycle Route

Benefits	Description
Uniqueness of the project	• uniqueness of the project on a national scale, i.e. the first-of-a-kind concept of using technical roads along an expressway for bicycle traffic • comprehensive project, consistent in terms of objectives and solutions
Existing infrastructure	• existing road infrastructure (service/technical roads are already there, no need to build them from scratch) • existing roads and cycle paths can be used and connected to the network • the infrastructure keeps growing as new S5 sections and the accompanying technical roads are being built
Financing opportunities	• chances to obtain funding for the construction of the missing links • possibility of financing the S5 Bicycle Route using external funds
Willingness to cooperate	• support from local authorities, which guarantees continuous uninterrupted routing over the entire distance, not only in certain sections within communes; • a community of thinking and ideas • one common idea • unity – the concept unites instead of dividing • cooperation around one idea – local governments, State Forests, individual forest districts, Polish Railways (PKP), General Directorate for National Roads and Motorways (GDDKIA), tourist organizations, NGOs, media and others • establishment of an association of communes which the future S5 Bicycle Route will cross (in the form of a Local Partnership) • favourable attitude of the S5 administrator • inclusion of the communes of Rawicz, Bojanowo and Żmigród in the City Partnership Initiative programme as part of the Air Quality Network
Diversity of the route	• route sections with different types of surface (asphalt, gravel, grassy dirt roads) and passing over varied terrain • this diversity is not an disadvantage but an asset
Transport integration of the neighbouring area	• the route will cross several communes • reduction of exhaust gas emissions thanks to the development of eco-logical transport (bicycles, electric bicycles) • transport connection between communes and districts • good rail connections with Wrocław and Poznań (bicycle + rail) – possibility of using mixed transport options

Source: own research.

ing the S5 Bicycle Route. The forces were analysed in order to identify the main challenges facing the Local Partnership. The results are presented in Table 1.

The proposed S5 Bicycle Route is an alternative to car transport, meets the standards of European long-distance cycling routes, connects communes located along the S5 expressway and ensures safe and collision-free ride. As a regional bicycle route and the Wrocław–Poznań tourist axis, it is perfect for recreation and development of bicycle tourism. In addition to being another attractive option for bikers, who can already use the Green Velo bike route in Eastern Poland or the bicycle route along the Oder River, the S5 Bicycle Route will also enable local residents to commute to work and school or to meet their neighbours.

The S5 Bicycle Route not only connects two provinces but it also integrates separate bicycle routes and bicycle paths located in individual communes into a single network. Thus, it serves as the backbone of an interregional system of bicycle routes, which will facilitate mobility within and between communes and attract cycling tourists.

4. S5 Bicycle Route Association

The Rawicz commune, which initiated the project of creating a bicycle route along the national S5 expressway complete with basic tourist infrastructure took steps in order to establish an association. It championed the idea in the agencies of local government (marshal offices of both provinces: Wielkopolskie and Dolnośląskie). It applied for a recommendation of the Polish Tourist Organisation with a view to obtaining a certificate of the best tourist product.

Rawicz also holds meetings to discuss proposals and consider various possibilities of implementing the project as an attractive tourist product, including the possibility of making adjustments to meet the quality criteria for Eurovelo routes, which constitute a good and widely recognised basis for developing the concept of the S5 Bicycle Route. The schedule of the most important activities implemented in 2017-2019 is shown in Table 2.

Initial research carried out by the Rawicz Commune suggests that the interested local government units are ready to participate in the implementation of the project while institutions dealing with tourism and bicycle trails and routes, are favourably disposed to the idea of creating a bicycle route connecting Poznań with Wrocław. The Rawicz Commune asked the Polish Tourist Organisation for expertise and support and lobbying efforts within the Active Tourism consortium. Regional Tourist Organisations in Wrocław and Poznań as well as universities dealing with tourism have also expressed interest in the project. The project has also been positively evaluated by the State Forests, branches of the General Directorate for National Roads and Motorways and local government units.

Table 2. Schedule of activities concerning the S5 Bicycle Route (2017-2019)

Action	Place and date
Planning and creation of the S5 Bicycle Route. A series of meetings attended by representatives of local government units interested in planning and building the bicycle route along the S5 Poznań–Wrocław expressway.	2017 – Municipal Office of the Rawicz Commune
The Rawicz commune participated in the first edition of the Lower Silesia Bicycle Festival. It co-organized a discussion panel on the S5 Bicycle Route featuring a workshop on good cycling practices.	20-21 May 2017 – Centennial Hall in Wrocław
The City Partnership Initiative is one of the strategic projects under the Strategy for Responsible Development at the Ministry of Development.	17 July 2017 – Submission of applications under the City Partnership Initiative
Project implementation: a computer visualization of the landscape and infrastructure of the bicycle trails and routes was created	March – June 2018
The signing of a letter of intent concerning the establishment of the S5 Bicycle Route Association.	29 June 2018 – Municipal Office of the Rawicz Commune
A meeting of the City Partnership Initiative as part of the Air Quality Network.	September 2018 – Rawicz
The founding meeting of the S5 Bicycle Route Association.	5 April 2019 – Municipal Office of Rawicz Commune
Registration of the S5 Bicycle Route Association.	29 May 2019
Meetings of the Management Board of the S5 Bicycle Route Association, attended by invited guests from the Institute for Territorial Development from Wrocław. The participants discussed details of the planned cooperation and established the scope of the S5 Bicycle Route concept.	5 July 2019, 6 August 2019, 31 October 2019 – Municipal Office of the Rawicz Commune
The aim of the rally was to familiarize participants with the proposed S5 Bicycle Route. Rally participants used technical roads from the Folwark rest area to the flyover in the direction of Żylice.	19 October 2019 – S5 Bicycle Route Research Rally

Source: own research.

In connection with a call for participation in thematic networks on urban mobility, revitalisation and air quality, on 17 July 2017 the communes of Rawicz, Bojanowo and Żmigród submitted applications within the framework of the City Partnership Initiative, one of the strategic projects which is part of the Strategy for Responsible Development[1]. The aim of the initiative is to create a legal and organizational model of cooperation between communes and other public institutions in order to use the technical roads along the S5 Poznań-Wrocław ex-

[1] *The Strategy for Responsible Development for the period up to 2020 (including the perspective up to 2030)* – SRD – was adopted by the Council of Ministers on 14th February 2017.

pressway to create a safe bicycle route between the cities to enable zero emission commuting, tourism and sightseeing.

As a result of these activities, on 26-28 September 2018 a meeting of the City Partnership Initiative was held in Rawicz as part of the Air Quality Network, organised with the help of the authorities of the towns of Bojanowo and Żmigród. The agenda included activities of local government units involved in the creation of the S5 Bicycle Route Association and a workshop on the design and implementation standards for bicycle infrastructure, conducted by a bicycle officer from the Wrocław City Hall. On the second day, the participants took part in a study visit to the areas of the proposed project and a bicycle ride along the planned S5 Bicycle Route from Rawicz to the Palace in Trzebosz. Expertise support for the workshop was provided by representatives of Rawicz, Bojanowo and Żmigród Municipal Offices, an Air Quality Network expert from the Warsaw University of Technology and a representative of the Ministry of Development.

On 29 June 2018 a letter of intent was signed confirming the willingness of cooperating parties to get involved in the implementation, promotion and maintenance of the long-distance bicycle route crossing the provinces of Dolnośląskie and Wielkopolskie.

The founding meeting of the S5 Bicycle Route Association was held on 5 April 2019 in the Session Hall of the Municipal Office in Rawicz. The invitation was accepted by 12 local government units from Wielkopolskie and Dolnośląskie, which adopted resolutions expressing their willingness to establish and join the association. The meeting was attended by representatives of 9 communes (Bojanowo, Czempiń, the city of Leszno, Rawicz, Śmigiel, Święciechowa, Trzebnica, Wisznia Mała, Żmigród) and 3 districts (Leszczyński, Rawicki, Trzebnicki). According to the bylaws of the S5 Bicycle Route Association, its goal is not only to create a complete tourist and recreation product (which responds to current trends and meets local needs) but also to build the brand of the region by offering a dense network of roads and bicycle routes, especially along the S5 expressway.

5. Condition of the cycling infrastructure as a determinant of tourism and recreation

Although a cycling network for tourism and leisure activities addresses slightly different user needs than a typical urban network, there are 5 essential requirements that should be considered when designing and building any cycling network. They are included a Dutch design manual entitled *Sign Up for the Bike*[2]

[2] The manual was first published in 1993 by the Centre for Research and Contract Standardization in Civil and Traffic Engineering, also known as C.R.O.W. It was replaced in 2007 by a newer version entitled *Design manual for bicycle traffic.*

[CROW 1993], which can be treated as the world standard in planning, design and construction of urban cycling roads. According to these recommendations, a cycling system should be characterized by coherence, directness, safety, comfort and attractiveness.

1. Coherence refers to the continuity of the system, which should links all starting points and destinations in the city. No cycling route must suddenly end, leaving the cyclist in a dangerous place.

2. Directness – the system must provide the greatest possible travel speed for the bicycle. Cycling routes should be more or less straight, level, easily accessible and, for most of the time, have right of way.

3. Safety – cycle paths should be located in light traffic zones, outside of roadways and separated from them by posts.

4. Comfort should be ensured by correct surfacing, avoidance of steep uphill sections, good lighting, bicycle parking lots.

5. Attractiveness of the cycling path system depends on the four above mentioned features and on the characteristics of the area across where the cycling routes are located (parks, river banks).

In principle, it is assumed that if one or more of the main requirements are not met, the cycling infrastructure should be rebuilt.

Taking into account the suburban areas with important tourism and leisure functions, especially on Saturdays and Sundays [Szkup 2003], the following conditions should be met:

1. Cycling routes should run along particularly attractive places, e.g. along river valleys, unused railway lines, mountain ranges or pilgrimage trails.

2. Cycling routes should be an integral part of existing trans-regional roads (long-distance routes).

3. They should connect cities and pass through their centres.

4. Standardized labelling should be used.

5. Information on the condition of bicycle routes must be regularly updated

6. Cycling routes should be planned at district or commune level, and preferably at the level of a region or province.

6. Selected concepts of regional cycling trails and tourist trails

Concepts of regional cycling trails are created for areas of different size and representing various levels of territorial division, which are considered to be attractive for cycling. In this context, one can distinguish cycling trail systems located in regions belonging to different countries (e.g. Euroregions) or different admin-

istrative units (e.g. provinces), and regional systems within administrative units (e.g. provinces, geographical regions). General concepts of long distance trails were presented by J. Styperek [2002] in terms of linear systems of recreational exploration.

An interesting approach to stimulating regional cycling activity in regions connecting neighbouring countries is the creation of cycling trail systems in Euroregions (e.g. Nisa Euroregion and Glacensis Euroregion). These Euroregions include border territories of Poland, the Czech Republic and Germany. As noted by W. Ranoszek and K. Widawski [2008], activities at the level of Euroregions are associated with high expenditures financed under EU projects. For example, a cycling trail concept developed for the Nisa Euroregion in 2001 featured three categories of cycling trails: Euroregional routes (category I), inter-communal main routes and bypasses (category II), and communal and urban bypasses (category III). A similar project was created for the Glacensis Euroregion, where three categories of cycling trails were also distinguished: international, regional and connecting trails. According to Ranoszek and Widawski [2008] quoted above, a total of about EUR 100,000 was spent to develop the concept for the Glacensis Euroregion, including publications and promotion events. The above mentioned concepts and the expenditures involved confirm the importance of tourist trails in the activation on tourism at local and regional levels.

Another category worth mentioning in this context are supra-regional concepts that are part of the network of international trails, such as the Trans-European Cycle Route Network EUROVELO comprising 12 bicycle trails with a total length of 66,000 km, 5 of which cross the territory of Poland.

The Green Velo Cycling Trail in Eeastern Poland is one of the most spectacular examples of projects undertaken to create and promote regional cycling tourist trails connecting several Polish provinces. The trail is over 2,000 km long and runs across five provinces in Eastern Poland (Warmińsko-Mazurskie, Podlaskie, Lubelskie, Podkarpackie and Świętokrzyskie). The project was implemented as part of the 2007-2013 Operational Programme to support the Development of Eastern Poland. The Green Velo concept was developed in the project entitled "Cycling routes in Eastern Poland", which was co-financed by the European Regional Development Fund (85%), the state budget (10%) and own contributions of Beneficiaries (5%). There are 12 so-called "cycling kingdoms" along the trail, each representing an attractive region that tourists can explore by following local cycling trails.

The Cycle Trail System of Wielkopolska is an example of a coherent, regional system of tourist bicycle trails stretching over one geographical region. The first trails were created in 2001, and currently the entire network consists of 9 transregional bicycle trails with a total length of about 1,800 km. The system includes historical and cultural trails, such as the Amber Bicycle Trail (*Bursztynowy Szlak*

Rowerowy) or the Mansion Bicycle Trail (*Ziemiański Szlak Rowerowy*). The attractiveness of the Cycle Trail System of Wielkopolska has received a special Quality Certificate awarded by the Polish Tourist Organisation in 2004. Moreover, the system is an element of the "GPS Wielkopolska" project, in which satellite navigation technology has been used to develop GPS tracks that can be downloaded to mobile devices free of charge [Kaleniewicz 2012].

The core element of the system in the Poznan metropolitan area is the Poznań City Bicycle Ring (*Pierścień Rowerowy Dookola Poznania*), with a total length of about 170 km, which is divided into 7 sections stretching between access routes to the city centre, five of which are part of the Cycle Trail System: the Cistercian Cycling Trail, the Warta Cycling Trail, the Piast Cycling Trail, the Hundred Lakes Cycling Trail and the Bicycle Route Across Wielkopolska (*Transwielkopolska Trasa Rowerowa*).

One example of a regional bicycle route created along expressways and motorways (just like the S5 Bicycle Route) is the F35 High Speed Bicycle Route in the non-administrative region of Twente in the eastern Netherlands. The idea of a bicycle motorway, which runs almost parallel to the Rijksweg 35 motorway over a distance of nearly 60 km, from the town of Nijverdal to the German border, was proposed as an alternative to urban and regional car traffic. The F35 is a utilitarian and recreational alternative to the A1/A35 motorway and regional roads connecting the towns of Borne, Hengelo and Enschede. The bicycle trail concept is the result of cooperation between 8 communes located in the Twente region (Almelo, Borne, Enschede, Hellendoorn, Hengelo, Oldenzaal, Twenterand and Wierden). The F35 bicycle motorway crosses Twente from the German border to Sallandse Heuvelrug near Nijverdal, and runs across Enschede, Hengelo, Borne, Almelo and Wierden. Offshoots are planned to go from Oldenzaal to Enschede and Almelo and Vriezenveen.

1. Despite its length, the bicycle motorway[3] serves as a route for short distance travel between towns/cities and provides the following benefits:

2. Improves urban mobility by reducing traffic congestion on roads to towns/cities, stations, offices and public event sites.

3. Facilitates social, tourist and leisure activities of residents by providing a quick connection to towns/cities, communes and villages and leisure locations in the region regardless of the social status of users.

4. Facilitates economic activity of residents who can commute to the centres of towns/cities where they work and live and where most public institutions are located.

5. Has a positive environmental impact by helping to reduce greenhouse gas emissions (CO_2), traffic pollution and noise.

[3] http://www.fietsfilevrij.nl/fietsroutes/fietssnelweg-f35-twente/ [accessed: 5.10.2019].

6. Has a positive impact on residents' health by promoting physical activity, in particular cycling and other human-powered means of transport.

7. Increases road safety by helping to reduce the number of road traffic accidents.

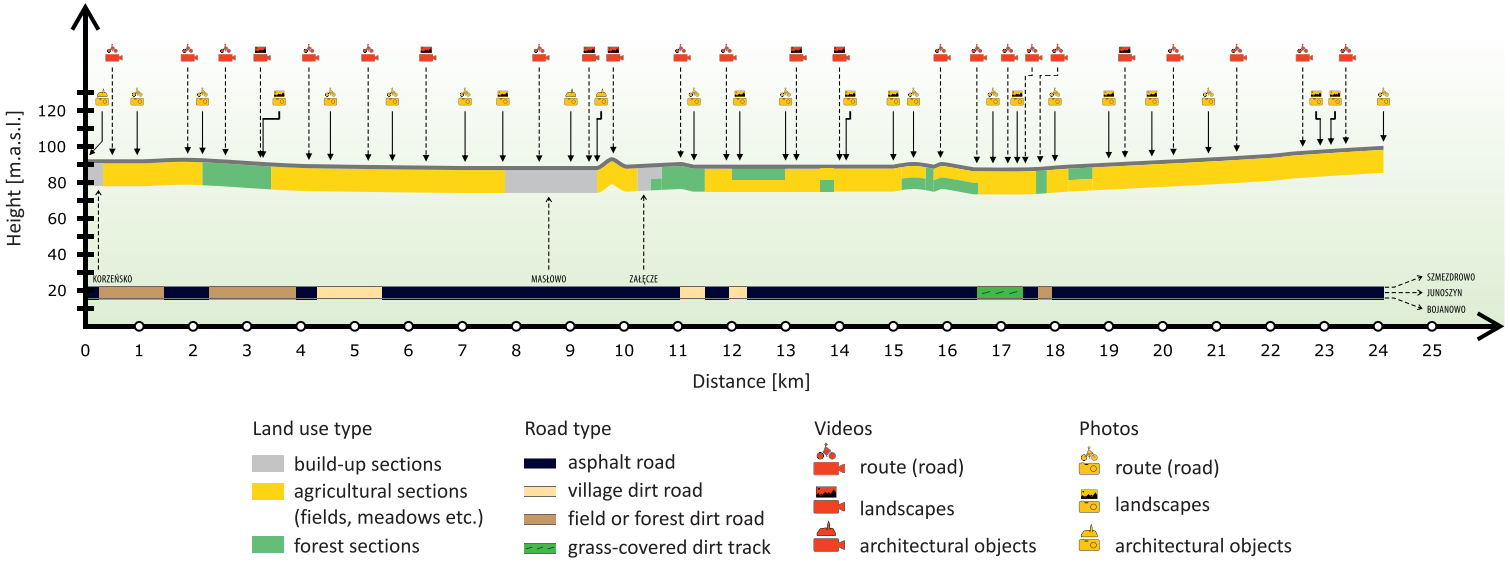
8. Improves the positive image of the region.

7. Assumptions of a landscape visualization of bicycle tourist trails

The main purpose of landscape visualization was to design graphic forms of presentation (graphs, maps, photographs and films) to highlight the attractive landscape of bicycle trails including natural and anthropogenic characteristics of the trail and its infrastructure. The process of creating a landscape visualization consisted of two stages: the first one involved field work in order to collect the necessary data, photos and films, the second one consisted in developing the actual visualisations and publishing them online. The first stage was preceded by cartographic and field reconnaissance. Next, a GPS trace was created using data from a satellite navigation device, in order to measure the length of roads with different surfaces. The video and photo material was documented, including a map indicating locations of places shown in photos and videos. In the second stage, topographic profiles were prepared choosing an appropriate scale to make sure that elevation change is correctly represented in relation to the horizontal scale and the terrain along the trails is displayed in a optimal way. The basic advantage of topographic profiles is that they clearly show hills and sections of the trail with different gradients. The profiles contain information on types of land use (forest, built-up or agricultural areas) which determine the perception of the surroundings. More diversity in this regard produces of a mosaic of landscapes that can be experienced during a leisure trip. Another aspect that cyclists find very useful is information about the type of roads, which is displayed along the trail, under the horizontal axis of the graph (Fig. 1).

The key feature of the landscape visualization are the pictograms representing photographs and videos of locations along the route, showing the route itself, the surrounding landscape and architectural objects (e.g. palaces, manors, churches) and infrastructural elements (e.g. parking places, lookout towers, information boards etc., Fig. 1). The landscape visualization of bicycle trails is available online and provides a simple and relatively quick overview of practical information about the characteristics of a given trail for the potential tourist, which can be a motivating factor to undertake cycling activity.

Fig. 1. Landscape visualization of a section of the S5 Bicycle Route



Source: Author's own research.

8. Characteristics of one section of the S5 Bicycle Route

The section of the S5 Bicycle Route developed for the Rawicz commune is 24.1 km long. The trail starts in Korzeńsko and continues across Masłowo, Załęcze, ending at the road connecting Trzebosz and Bojanowo. The difference in elevation is small (about 10 m). The trail starts at 90 m above sea level and ends at about 100 m. The elevation parameters indicate that the trail is classified as one of negligible difficulty, which is well illustrated by the topographic profile (Fig. 1); it can therefore be chosen by bikers of different categories. Another feature that contributes to the low difficulty of the trail is the type of surface. The trail includes sections with four types of surface: asphalt roads – 72%, dirt roads – 10%, field roads – 15% and grass-covered field roads – 3%. Another important feature for cyclists is the diversity of the landscape which is determined, among other things, by different types of land use. Most of the area along the route is classified as agriculture land (about 65%, mainly grasslands); forest areas account for about 20% of the route, and the remaining part are built-up areas.

The landscape visualization will be one of the ways of promoting the S5 Bicycle Route. A pilot version of the visualization for the S5 Bicycle Route section described above is already available online. Pictograms representing photographs and short videos are placed on the topographic profile, which also includes information about land use and surface types. The landscape attractiveness is documented by 25 photographs (showing the landscape – 10, the trail – 12, architecture objects – 3) and 24 videos (showing the landscape – 7 and the trail – 17). The visualization can be accessed on the website of the Rawicz Commune (www.rawicz.pl).

Another important element of the concept of the S5 Bicycle Route is the development of the tourist and sightseeing attractiveness of the areas (districts and communes) located in the immediate vicinity of and further away from the S5 Bicycle Route. To this end, within each commune along the S5 Bicycle Route, connecting routes will be created along local roads that link to existing bicycle trails and routes in these communes. In the case of the existing section of the S5 Bicycle Route described above such a connection exists between the technical roads along the S5 expressway and local roads leading to Masłów and further on to Rawicz, where two bicycle trails have been built: the Rawicz trail and the Rawicz – Hazy – Rawicz loop, for which a landscape visualization was also prepared. Thanks to the cooperation of the communes located in the vicinity of the S5 bicycle route in the development of cycling tourism, a uniform form of promotion by means of landscape visualization was chosen. The first region to opt for this solution is the Poznań region, which includes communes located south of Poznań (Luboń, Puszczykowo, Stęszew, Mosina, Komorniki, Dopiewo, Buk). Another region invited to create a coherent promotion project includes the com-

munes in the Leszczyński district and the communes located between the two regions, e.g. Śmigiel and Czempiń. In the future two other cycling tourism regions that will be created around Rawicz and Wrocław.

9. Summary

Broadly understood spatial factors are the key factors in the shaping of the image of cycling tourism and leisure. In this regard, Smolarski [2018] points to evident mutual relations and connections. Specific factors of particular importance for cycling tourism and leisure include the following:

– location of the place of residence,
– qualities of the town/city which are conducive to cycling,
– terrain,
– climate,
– spatial structure of the town/city (urban layout, transport system, etc.),
– location of tourist attractions,
– diversity of social environment,
– accessibility of suburban areas.

These features and the existing should be taken into account when developing a local bicycle policy developed. The creation of a comprehensive cycling system is a multi-stage and long-term process and is usually part of a wider programme of the region's ecological development. The necessary infrastructure is created to ensure the safety of users, often by reducing the intensity of car traffic. Therefore, cycling policy management is a key element in the process of creating effective and efficient facilities for local cycling.

In view of the above considerations, the following conclusions can be drawn.

Taking into account the popularity of cycling and the fact that it is a family type of leisure, it is necessary to develop a comprehensive system of cycling roads and trails. Attractive suburban areas should be connected with urban centres by safe bicycle routes along secondary roads with a low intensity of traffic. On the other hand, the use of these areas by pedestrians and cyclists requires, in safe traffic rules, in accordance with the amended traffic law (*Road Traffic Law of* 1997[4]). The development of cycling recreation and tourism is also influenced by the policy of the state, region, town or commune and by the existing regulations concerning the use of bicycles in road traffic.

Another important factor is the financial capacity of those who engage in cycling recreation and tourism.

[4] Ustawa z dnia 20 czerwca 1997 r. Prawo o ruchu drogowym, Dz.U. 1997, nr 98, poz. 602.

Studies can be helpful in the process of planning the cycling infrastructure in the region and creating local concepts and programmes for cycling development. Communes are willing to participate in this effort. Initial research suggests that institutions dealing with tourism and bicycle trails and routes, are favourably disposed to the idea of creating a bicycle route connecting Poznań with Wrocław. The Polish Tourist Organisation has been asked to provide expertise support and undertake lobbying within the Active Tourism consortium. Regional Tourist Organisations in Wrocław and Poznań, as well as universities dealing with tourism have also expressed interest. The project has been positively evaluated by the State Forests, branches of the General Directorate for National Roads and Motorways and local governments.

The analysis of the project and its implementation presented in the article has demonstrated opportunities for recreational use of the existing non-recreational transport infrastructure. Given its scale, this is the first project in Poland aimed at expanding the network of recreational trails and connecting two metropolises. The article has also shown the wide-ranging challenges associated with implementing a recreation and tourism development project at various levels of public administration. The experience and insights gained at each stage of the project creation and implementation can provide guidance for similar initiatives. The article makes a contribution to the literature on recreation and tourism development, which is understood as a process of adapting a given area for recreational and tourism use.

References

Bartoszewicz R., 2011, *Aktywność ruchowa młodzieży gimnazjalnej z południowo-zachodniej Polski na tle wybranych ośrodków europejskich*, ed. 2nd, Wrocław: Wydawnictwo Akademii Wychowania Fizycznego we Wrocławiu.

CROW, 1993, *Sign Up for the Bike. Design manual for a Cycle-Friendly Infrastructure*, Centre for Research and Contract Standardization in Civil and Traffic Engineering, Ede, Netherlands: C.R.O.W.

Gałkowska E., 2000, Sposoby spędzania czasu wolnego przez młodzież z XIV Liceum Ogólnokształcącego im. Kazimierza Wielkiego w Poznaniu, in: J.L. Kiełbasiewicz-Drozdowska, M. Marcinkowski, W. Siwiński (eds.) *Interdyscyplinarne zagadnienia aktywności rekreacyjnej, sportowej i turystycznej końca XX wieku*, Poznań: Wyższa Szkoła Oficerska im. Stefana Czarnieckiego, 56-61.

GUS, 2009, *Uczestnictwo Polaków w sporcie i rekreacji ruchowej w 2008 r.*, Warszawa: Główny Urząd Statystyczny.

GUS, 2013, *Uczestnictwo Polaków w sporcie i rekreacji ruchowej w 2012 r.*, Warszawa: Główny Urząd Statystyczny.

http://www.fietsfilevrij.nl/fietsroutes/fietssnelweg-f35-twente/ [accessed: 5.10.2019].

Kaleniewicz A., 2012, Projekt GPSwielkopolska – zastosowanie nawigacji satelitarnej w turystyce rowerowej, in: J. Śledzińska, B. Włodarczyk (ed.), *Turystyka rowerowa w zjednoczonej Europie*, Warszawa: Wydawnictwo PTTK „Kraj".

Plan ulepszeń dla sieci „Jakość powietrza", 2019, Warszawa: Ministerstwo Inwestycji i Rozwoju.

Ranoszek W., Widawski K., 2008, Stan i perspektywy turystyki rowerowej na przykładzie Dolnego Śląska, in: J. Wyrzykowski (ed.), *Uwarunkowania rozwoju turystyki zagranicznej w Europie Środkowej i Wschodniej*, vol. 10, Wrocław: Instytut Geografii i Rozwoju Regionalnego Uniwersytetu Wrocławskiego, 363-373.

Umiastowska D., 2000, Miejsce aktywnych form ruchu w czasie wolnym mieszkańców Szczecina, in: J. Wyrzykowski (ed.), *Studia nad czasem wolnym mieszkańców dużych miast Polski i jego wykorzystaniem na rekreację ruchową i turystykę*, Wrocław: Wydawnictwo Akademii Wychowania Fizycznego we Wrocławiu.

Ustawa z dnia 20 czerwca 1997 r. Prawo o ruchu drogowym, Dz.U. 1997, nr 98, poz. 602.

Smolarski T., 2018, *Społeczne uwarunkowania rekreacji rowerowej młodzieży licealnej*, Wrocław: Exante Wydawnictwo Naukowe.

Styperek J., 2002, *Linearne systemy penetracji rekreacyjnej*, Poznań: Bogucki Wydawnictwo Naukowe.

Szkup R., 2003, *Kształtowanie podmiejskiej przestrzeni wypoczynkowej: przykład zachodniego sektora strefy podmiejskiej Łodzi*, Łódź: Wydawnictwo Uniwersytetu Łódzkiego.

Szwedzka K., Lipniak J., 2017, Model PDCA w procesie implementacji zmian w przedsiębiorstwie, *Zarządzanie Przedsiębiorstwem*, 20(2): 26-33.

Zatoń K., Zatoń K., 2014, Aktywność fizyczna a zdrowie, *Rozprawy Naukowe Akademii Wychowania Fizycznego we Wrocławiu*, 45: 34-40.

Trasa „Rowerowa S5" jako turystyczne połączenie aglomeracji miejskich Wrocławia i Poznania

Streszczenie. W artykule przedstawiono koncepcje utworzenia trasy rowerowej „Rowerowa S5", biegnącej drogami technicznymi wzdłuż drogi ekspresowej S5, pomiędzy Wrocławiem i Poznaniem. Zaprezentowana została procedura powstania stowarzyszenia „Rowerowa S5" oraz metody promocji trasy przy zastosowaniu wizualizacji krajobrazowej. Celem projektu jest wyznaczenie trasy rowerowej o długości prawie 180 km, przebiegającej wzdłuż drogi ekspresowej S5 w granicach województwa dolnośląskiego i wielkopolskiego. Koncepcja projektu zakłada wykorzystanie sieci dróg technicznych przy istniejącej i budowanej drodze ekspresowej S5 na potrzeby ruchu rowerowego, szczególnie na cele turystyczne i rekreacyjne.

Słowa kluczowe: trasa rowerowa, infrastruktura turystyczna, wizualizacja krajobrazowa