

CYCLING IN ROMANIA - ISSUES RELATED TO SPECIFIC STATISTICS, INTERMODALITY AND SAFETY

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Abstract

Cycling and cycle tourism are topics for which INCDT researchers have conducted relatively constant analyzes in recent years, by participating in various projects and studies in this field. One such project is the "Danube Cycle Plans", which is part of the Transport, Health and Environment Pan-European Program, co-financed by European Union funds (ERDF, IPA). The project was approved for funding under the Interreg Danube Transnational Program, priority axis 3.1, in 2020. The main objectives of the project are to improve the conditions for cyclists and to contribute to the promotion of cycling tourism, as an ecological mode of transport and as a means of improving accessibility in urban and rural areas, especially those in the Danube region. In this project we analyzed the current situation of cycling in Romania, by researching the issues related to specific statistics, intermodality and safety, which we will detail in this paper.

Keywords: *cycling, Romania, statistics, intermodality, safety*

JEL Classification: Z30.

1. Specific cycling statistics

In Romania there are no official statistical data regarding the number of cyclists, which prevented proper analysis and research at national level.

However, data provided by the National Institute of Statistics (INS) from Romania show that regarding the household's endowment with durable goods, an important increase in 2019 compared to 2010 was registered for bicycles. This shows that there is a growing interest in the use of bicycles in Romania and the potential for increasing the number of passengers on bicycles is high.

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Table 1: Households endowment with durable goods in Romania
– the case of bicycles, 2010-2019

Average number/100 households

Years	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Bicycles	27.5	28.4	30.1	31.2	30.5	32.6	35.4	39.1	39.9	45.1

Note: Starting 2014 the data have been estimated based on usually resident population and they are not comparable to the series published for the previous periods.

Source: INS, Family Budget Survey.

Estimating the number of bicycles owned by population in Romania, 2010-2019

Combining data from Family Budget Survey (data provided by INS) with population data we can estimate the absolute number of bicycles own by households in Romania (see table 2). Therefore it was calculated that in Romania there were 3.3 millions bicycles owned by population in 2019 with 75.8% more than ten years ago (2010).

Table 2: Estimating the number of bicycles owned by population
in Romania, 2010-2019

Years	Average number of bicycles per 100 households (A)	Resident population (B)	Average size of a household (C)	Estimated number of households (D) = (B)/(C)	Estimated number of bicycles owned by households (E) = (A) x (D) / 100
2010	27.5	20,246,798	2.897	6,988,884	1,921,943
2011	28.4	20,147,657	2.879	6,998,144	1,987,473
2012	30.1	20,060,182	2.874	6,979,882	2,100,945
2013	31.2	19,988,694	2.857	6,996,393	2,182,875
2014	30.5	19,916,451	2.667	7,467,736	2,277,659
2015	32.6	19,822,250	2.658	7,457,581	2,431,171
2016	35.4	19,706,424	2.648	7,442,003	2,634,469
2017	39.1	19,592,933	2.627	7,458,292	2,916,192
2018	39.9	19,476,713	2.606	7,473,796	2,982,045
2019	45.1	19,370,448	2.585	7,493,403	3,379,525

Source: own estimation based on INS data

It is important to mention that the estimated number of bicycles includes also those designed for children and teenagers (up to 18 years old). A very rough assumption is to consider one third (33%) of these bicycles for children while the rest of 66% to be allocated for adults. Under these circumstances, in 2019 we would have 2.2 million bicycles for adults so therefore this number might be roughly similar with the number of cyclists in Romania.

Some data from a survey on cycling

INCDT and IMAS Marketing & Polls carried out in 2018-2019 a survey commissioned by the South-East Regional Development Agency entitled "*Perceptions*

and attitudes regarding cycling and its specific infrastructure", carried out within the project "Development of the partnership between NGOs and administration for the promotion of sustainable transport modalities within the localities", project co-financed from the European Social Fund through the Operational Program Administrative Capacity 2014-2020. This research¹ was based on an OMNIBUS sample and aimed to identify the perception of population on cycling and public policies that support this activity. The sample consisted in a number of 1010 persons aged 18+, uniformly distributed by all regions and by urban and rural localities in Romania; the interviews were carried out in the period 6-28 November 2018.

Cycling as a mode of transport

The results showed that the share of persons preferring bicycle was quite low, only 5.3% from respondents mentioning it as their preferred mode of transport. This share was even lower in the urban areas compared with rural areas (2.6% vs. 8.7%).

Regarding bicycle usage by gender, men mostly used bicycle as a mode of transport (6.8% compared to 3.7% for women). If one looks at age, most of those preferring bicycle as a mode of transport were aged 40-59 years and 60 years and over.

From the total respondents, 13.5% used bicycle as a mode of transport for going to work or school, while 86.5% used other means of transport. The percentage of those biking to work or school in the rural areas was higher than those locating in urban regions: 17.6% compared to 10.3%.

The bicycle has been used for sport and leisure purpose by 41.4% of respondents. The percentage of those biking for leisure in the rural areas is higher than those biking for leisure in the urban areas: 47.4% compared with 36.6%.

For going shopping and for other miscellaneous activities, the bicycle has been used by 28.4% of respondents, out of which 39.4% from rural areas and 19.8% from urban regions.

The percentage of those using bicycle to travel from one locality to another was even lower, approximately 13%. In the rural areas, the percentage of those using bicycle to travel from one locality to another was higher than in the urban areas (20.4% compared to 7.4%).

Cycling as a leisure activity

One can mention that biking was considered by most of the respondents more as a leisure activity rather than a daily mode of transport. Also one can see that bicycle was merely used in the rural areas rather than urban areas.

Considering the frequency of bicycle usage, it was found that:

- In the urban regions where bicycle was used as a leisure activity – 29.8% of respondents declared that they used it once or twice per week;
- In the rural areas 19.2% of respondents were used to bike once or twice per week for leisure purposes. Though, if we consider lower frequencies (two or three times per month, once per month or even rarely), the percentage was higher for urban areas than rural ones.

¹ Available at: https://www.adrse.ro/DIP/POCA_110839

As regards the purpose of using bicycle, the percentage of those using bicycle for sport and relaxation was predominately – 67.1% from total respondents, out of which 61.7% in the rural areas and 73% in the urban regions. The percentage of those considering bicycle a faster mode of transport than public transport and own car was very low (3.9%) albeit in urban areas this is a little bit higher (6.3%).

If we refer to difficulties faced by cyclists, 77.4% (74.8% in the rural areas and 80% in the urban regions) of respondents considered that lack of signs for cycling was the main difficulty faced when biking. Also, one can mention other issues such as: aggressive drivers (62.4%), obstacles on the bike trails (51.4%), improper status of trails (49.2%), car parked on trails (49.1%) and difficulties in crossing intersections (45.8%). In urban regions these issues were mentioned in a higher share.

Considering the main reason for non-using bicycle, out of 539 respondents that did not bike, 20.2% stated that they cannot bike or they don't have a bike (17.3%). The percentage of those that cannot bike was higher in the rural areas (23%) than in the urban regions (18%). Those from urban areas as compared with the ones from rural areas mentioned to a larger extent the lack of bike trails, fear of accidents and health related problems.

Regarding the quality of infrastructure for bicycles, out of total number of respondents, 58.9% declared that there are no bike trails in their residence locality. In rural areas this percentage is 78.3% while in urban regions this is 43.7%.

2. Intermodality

The access – with a bicycle – to subway trains (which are available only in the capital city – Bucharest) is allowed only in the first car, considering the direction of travel, in the area placed behind the train driver segment². During journeys, bicycles must be secured by the owner, so as not to affect the comfort and safety of passengers and not to damage the interior of the subway car. The access is to be made through the special access gates, destined for the people with special needs, after validating the driver's pass card. The access – with a bicycle – to subway trains is allowed on weekdays only between 20:00-23:00 and permanently on Saturdays, Sundays, and on public holidays.

The bicycle access to the trains that belong to both public and private railway companies is allowed, under certain conditions, which we will describe below.

"C.F.R. Călători" (the public railway transport operator) offers the possibility to transport the bicycle only in certain trains (that feature cars that are equipped with areas dedicated for bicycles). According to "C.F.R. Călători", the regulations regarding the transport of bicycles in trains that cover national routes³ are the following:

- un-demountable bicycles are admitted to be transported *only* at the trains having in composition types of coaches with a specially dedicated spaces for the transport of bicycles. A single bicycle per person is allowed.
- for travelers who are accompanied by bicycles, at the trains with reservation regime, shall be allocated seats in compartments next to the space for storage thereof.

² http://www.metrorex.ro/reguli_de_calatorie_cu_metroul_p781-1 (accessed 12 November 2020).

³ <https://www.cfrcalatori.ro/en/transport-services-bicycles-skis/>. Accessed 19 November 2020.

As for the regulations regarding the transport of bicycles in trains that cover international routes⁴ of CFR Călători, these include:

- in all the trains of CFR Călători, only foldable bicycles are allowed as hang luggage, provided that they can be deposited in the luggage space and they don't disturb or affect the other passengers.
- non-foldable bicycles may be transported on board trains in the designated spaces from the specially fitted coaches.
- for the international destinations, CFR Călători provides the bicycle transport service between Braşov-Budapest and return, on board train no. 366/367 "HARGHITA". The special bicycle coach circulates daily between the 25th of May 2020 and the 8th of September 2020.
- The bicycles are the responsibility of the passengers, in the departure station, the connection station and the arrival station, as well as during the travel.

In Romania, several private companies also operate in the railway passenger transport, the following provisions being applicable as regards bicycle transportation in trains:

- RegioCălători – bicycle transport is allowed, in the dedicated areas of the car – depending on the availability of space – provided that they do not disturb the other passengers⁵.
- TFC (Transferoviar Călători) – the access to the train – with folding bicycles – is only allowed in the dedicated luggage space, located above the reserved place or on the corridor, provided that the other passengers are not disturbed by the bicycle(s). The access to the train – with non-folding bicycles – is only allowed in cars that have dedicated places for storing bicycles. Throughout the transport, the passenger must accompany and supervise the bicycle, so as it does not affect the safety and the comfort of the other passengers. The passenger is directly liable for any damage caused to other passengers during the transport of the bicycle⁶.
- Interregional Călători – this company allows the transport of both conventional and folding bicycles in all the trains that it owns⁷.
- Softtrans – this company allows the transport of both conventional and folding bicycles in all the trains that it owns. No more than four bicycles are to be carried within a train, while the third car is the one recommended in this regard, as it hosts the special racks for bicycles⁸.

The bikes are allowed in busses in Romania, but there are only several localities where circulate buses equipped with bicycle racks, which we will describe in the next question.

⁴ <https://www.cfrcalatori.ro/en/bicycles-transport/>. Accessed 19 November 2020.

⁵ <https://regiocalatori.ro/termeni-conditii/reglementari-propriei-regio-calatori/informatii-comerciale/>. Accessed 19 November 2020.

⁶ <https://transferoviarcalatori.ro/tarife/biciclete.html>. Accessed 19 November 2020.

⁷ Information transmitted by phone call (19 November 2020).

⁸ <https://www.softtrans.ro/>. Accessed 19 November 2020.

All the danube ports in Romania make it possible to cross the river via various ships, for which the ransport of bicycles poses no problem⁹.

In Romania, the public and also the private transport system are not enough adapted to the cyclists' needs. Not all the trains are equipped with bike racks or bicycle areas. As a matter of fact, according to the National Railway Passenger Transport Company (C.F.R. Călători¹⁰), in 2015 (the most recent year for which information is available), among the priority topics of people's complaints were those related to the lack of cars dedicated to bicycle transport, transport conditions and service pricing, these topics being very often addressed by both domestic and foreign customers travelling alone or part of a group.

In the capital city – Bucharest – buses and trams are not equipped with dedicated spaces for transporting folding bicycles. But there are also positive examples in some other cities in the counrty, as described below:

- in Iași there are 16 buses that run outside the city and that benefit from special racks for transporting bicycles (no more than three bicycles can be transported at once). Bus drivers are responsible for making sure that the bicycles are properly attached, with the view to avoid any problems in traffic in the event in which they fall off¹¹.
- in Cluj-Napoca there are several buses running on three internal circuits that have been equipped with special racks for transporting bicycles (o more than three bicycles can be transported at once). It is a pilot project, through which the municipality aims to encourage alternative transport. According to the mayor of this municipality, the project will be extended upon request¹².
- in Brașov, on weekends and public holidays, all buses running on line 20 (an internal line) also transport bicycles by means of trailers that can transport either 16 or three bicycles¹³.
- in Sibiu buses on the line 22 from Sibiu rail station to Paltnis mountain resort provide services for bicycle transportation. Maximum 16 bicycles can be transported¹⁴.

Also, as intercity buses one can mention Flixbus.

There is no additional charge for transporting bicycles via the subway service of Bucharest¹⁵.

⁹ Source: field trips.

¹⁰ CFR Călători - *Annual report on free access to information of public interest in 2015*, available at https://www.cfrcalatori.ro/wp-content/uploads/2018/02/Raportul_Lg_544-2001-pe_anul_2015.pdf. Accessed 19 November 2020.

¹¹ <https://www.bzi.ro/autobuzele-ctp-iasi-care-circula-in-afara-orasului-sunt-dotate-cu-suporturi-pentru-transportul-bicicletelor-soferii-ctp-iasi-ii-vor-ajuta-pe-biciclisti-3989371>. Accessed 19 November 2020.

¹² <https://www.impact.ro/autobuze-dotate-cu-suport-pentru-biciclete-ce-oras-din-romania-revolutioneaza-transportul-alternativ-86264.html>. Accessed 12 November 2020.

¹³ <https://brasovmetropolitan.ro/2020/06/foto-ratbv-reia-transportul-bicicletelor-pe-linia-20-pana-in-poiana-brasov>. Accessed 12 November 2020.

¹⁴ <https://tursib.ro/traseu/22/program>

¹⁵ Metrorex București - http://www.metrorex.ro/reguli_de_calatorie_cu_metroul_p781-1 (accessed 12 November 2020).

However, for the transport of bicycles by trains that belong to both public and private companies, additional fees are charged, respectively:

Through the national railway company (CFR Călători), transport of bicycles in trains that cover national routes¹⁶:

- at trains where a bicycle transport service is offered may be taken for transport un-demountable bicycles for which it will pay, at the ticket office, a fee of 15 lei.
- folding/demountable bikes can be transported for free of charge on all trains, to the 1st and 2nd class, as hand luggage, in the limit of the available space, provided they do not inconvenience the other travelers (a folding bicycle per person).

Through the national railway company (CFR Călători), transport of bicycles in trains that cover international routes¹⁷, in order to transport non-foldable bicycles on board the train, buying the international bicycle ticket is mandatory. The price of the bicycle ticket is of 5 euros/bicycle.

All the private railway companies charge fees for bicycle transportation, as follows:

- RegioCălători – for a travel distance under 100 km, an additional fee of 2.9 lei is charged, while for a travel distance greater than 100 km, a fee of 4.8 lei is charged. If the owner of the bicycle travels with two or more successive trains, the charging is to be considered for each train separately¹⁸.
- TFC (Transferoviar Călători) - the access by train with non-folding bicycles is allowed only with the additional payment of the single charger of 7 lei. Instead, the passenger can take in the car – free of charge – a folding or a detachable bicycle and it is considered hand luggage, provided that it does not disturb other passengers¹⁹.
- Interregional Călători – for the transport of non-folding bicycles it is necessary to purchase an extra ticket, with the price of 2.9 lei (for a trip between 0-100 km) and 4.8 lei (for a trip up to 200 km)²⁰.
- Softtrans – this company charges an additional charge for the transport of non-folding bicycles equal to half of the total price of the transport ticket²¹.

Buses in the cities of Iași, Brașov, and Cluj Napoca do not charge an additional fee for bicycle transport²², but in Sibiu the fare is 10 lei (approx. 2 EURO) for one bicycle. In Flixbus the price is 39.99 lei (9 euro) per bicycle²³.

The ships that ensure transportation services to Danube ports in Romania do not charge an additional fee for bicycle transport²⁴.

¹⁶ <https://www.cfrcalatori.ro/en/transport-services-bicycles-skis/>. Accessed 19 November 2020.

¹⁷ <https://www.cfrcalatori.ro/en/bicycles-transport/>. Accessed 19 November 2020.

¹⁸ Information transmitted by e-mail (19 November 2020).

¹⁹ <https://transferoviarcalatori.ro/tarife/biciclete.html>. Accessed 19 November 2020.

²⁰ Information transmitted by phone call (19 November 2020).

²¹ <https://www.softtrans.ro/>. Accessed 19 November 2020.

²² Information transmitted by phone call (19 November 2020).

²³ <https://www.flixbus.ro/firma/prețuri/transport-biciclete>

²⁴ Source: field trips.

3. Safety

According to the Ministry of Internal Affairs²⁵, the main causes of serious road accidents on public roads in Romania between 2013 and 2017 were:

- the lack of discipline from the pedestrians (21.3%);
- high speed (19.2%);
- failure to give priority to pedestrians (9.7%);
- failure to give priority to motor vehicles (7.8%);
- non-compliance with the road rules by cyclists (7.9%);
- failure to respect the proper distance between vehicles (3.8%);
- failure to respect the overtaking route laws (3.7%).

Regarding the impact of the non-compliance with the road rules by cyclists in the whole road phenomenon, it is observed in the table below that the incidence of this cause increased permanently between 2013 and 2019, both in absolute value and in weight. Thus, the road accidents that were caused by non-compliance with traffic rules by cyclists were in 2019 by 52.2% more than those registered in 2013, in the context of an increasing number of bicycle users in Romania, but also of the insufficiency of arrangements specific to this type of transport.

Table 3: The evolution of the non-compliance with the road rules by cyclists resulting in severe accidents between 2013 and 2019

2013	2014	2015	2016	2017	2018	2019
559	612	739	772	774	793	851

Source: Ministry of Internal Affairs, General Inspectorate of the Romanian Police, Road Directorate and Institute for Crime Research and Prevention – "Road Safety Bulletin –Annual Report, 2017 and 2019".

According to the same source, between 2016 and 2019 cyclists manifested a less responsible road behaviour, being more often guilty of the accidents in which they were involved. In 2019, the number of cases of non-compliance with the road rules by cyclists increased, which represented the main causes of severe road accidents. The drivers of two - wheeled motor vehicles also consistently registered values close to those of the accidents caused by the cyclists (see table below).

²⁵ The source of all this information is the bulletins published by the Ministry of Romanian Affairs, through the General Inspectorate of the Romanian Police, the Traffic Directorate and the Institute for Felony Research and Prevention, available in Romanian at: <https://www.politiaromana.ro/ro/prevenire/buletinul-sigurantei-rutiere>

Table 4: The level of liability of drivers between 2016 and 2019

Year	Bicycles	Animal – drawn vehicles	Two – wheeled motor vehicles	Commercial vehicles	Public transport
2016	59.2%	41.8%	59.0%	32.4%	20.6%
2017	60.4%	42.1%	56.7%	31.7%	17.4%
2018	61.4%	42.0%	57.0%	34.0%	19.9%
2019	63.1%	45.5%	57.8%	34.7%	16.3%

Source: Ministry of Internal Affairs, General Inspectorate of the Romanian Police, Road Directorate and Institute for Crime Research and Prevention – "Road Safety Bulletin–Annual Report, 2018 and 2019".

In general, between 2013 and 2018, most accidents that also included among the causes the non-compliance with the road rules by cyclist took place in rural areas (over 50%). In the urban areas, their share was about 30%; this fact is correlated with a higher number of bicycles in rural households. We mention that in rural areas cycling is a common way to ensure mobility over short distances among locals.

In rural areas, accidents caused by road indiscipline by cyclists were not only frequent but also some that resulted in high mortality. Overall, one out of seven accidents that took place in rural areas was caused by a cyclist. In addition, one out of five accidents caused by cyclists occurred while intoxicated. Moreover, in 2017, almost 60% of the accidents involving cyclists that took place in rural areas resulted in deaths.

According to the Ministry of Internal Affairs, the involvement of cyclists in causing severe road accidents began to rise to the surface in 2010 and 2011, reaching – in 2017 – a double number of accidents caused by their fault, as compared to 2011. At the same time, there was a gradual increase in the percentage of cyclists involved in total accidents, from 7% in 2010 to 9% in 2012, and 15% in 2017.

The evolution of the deaths of cyclists between 2016 and 2019

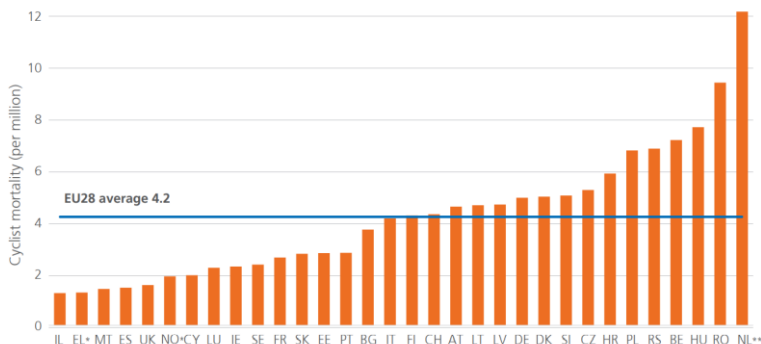
- in 2016, 173 cyclists died (representing approximately 10% of the total number of victims who died in road accidents that year) and 878 cyclists were severely injured.
- in 2017, 186 cyclists died (34 in urban areas, 110 in rural areas, and 42 outside the locality) and 848 cyclists were severely injured (347 in urban areas, 420 in rural areas, and 81 outside the locality).
- in 2018 the number of deceased cyclists decreased slightly as compared to 2017 (reaching a total of 177 people, less by 9 people compared to 2017), but the number of seriously injured cyclist was higher (933 people).
- In 2019, the number of deceased cyclists decreased significantly compared to 2018 (a total of 116 people, less by 61 people compared to 2018), while the number of seriously injured followed the same trend (738 people compared to 933 in 2018). By age categories, the fewest victims among cyclists were in the age range 19-24 years (6 dead and 34 seriously injured). Most victims were between the ages of 61-66 (29 dead and 116 seriously injured).

- between 2013 and 2019, depending on the type of road most cyclists died in serious road accidents on national roads, followed by county roads, streets, and communal roads. For example, the data for 2018 showed that 33.8% of the total number of deceased pedestrians registered on national roads were cyclists.

According to the most recent report by the European Road Safety Observatory²⁶, in 2016 Romania ranked first in the European Union in terms of the number of deceased cyclists, compared to the size of the population, respectively 8.9 victims per million inhabitants.

A January 2020 report by the European Transport Safety Council (ETSC) shows that Romania was on the 2nd place regarding the cyclist mortality among EU countries, with the highest mortality level, after the Netherlands.

Figure 1: Average annual cyclist deaths reported by the police (2016-2018 average) per million inhabitants in 2018



Source: European Transport Safety Council – *How safe is walking and cycling in Europe?* PIN Flash Report, 38 January 2020.

Available at: https://etsc.eu/wp-content/uploads/PIN-Flash-38_FINAL.pdf.

Accessed 30 November 2020

* EL and NO – 2016-2017.

**NL – Statistics Netherlands data.

The ETSC report also found out that the highest proportion of males among cyclists killed is in Israel, Spain and Portugal (94%) and Romania and Bulgaria (93%). The largest proportion of cyclist deaths as a consequence of an impact with a van are in Romania (17%), Hungary (14%), Israel and Latvia (13%) and Slovakia, Portugal and Spain (12%).

We mention that in the National Road Safety Strategy 2016–2020²⁷, in order to reduce the number of deaths among cyclists (identified as a category with a high risk of

²⁶ European Commission - Traffic Safety Basic Facts: Cyclists. Available at: 2018 https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/pdf/statistics/dacota/bfs20xx_cyclists.pdf. Accessed 23 November 2020

²⁷ Available at: <https://www.gov.ro/ro/guvernul/sedinte-guvern/strategie-i-plan-de-actiuni-pentru-cre-terea-sigurantei-rutiere-pana-in-2020-i-reducerea-la-jumatate-a-deceselor-din-accidente-rutiere-fata-de-2010>

accidents in Romania), among the priorities related to road infrastructure were the following:

- the separation of slow traffic from transit, by building roads dedicated to slow vehicles, such as agricultural machinery, wagons, bicycles; in the case of bicycles, in addition to local traffic, tourist traffic – cycling – can be considered in certain road sectors under some pilot initiatives, given that – currently– there are, at the level of the European Union, international cycling networks that connect major cities through "green roads" dedicated exclusively to bicycles. It must also be taken into account the priority development of all types of green ways, including those that do not intersect with the main road transport routes.
- the development of standards for the construction of bicycle lanes.

Unfortunately, these priorities have not been transposed into reality.