



# ACCESS2MOUNTAIN

**Regional and narrow gauge railways:  
REGIONAL INVENTORY OF THE EXISTING/OPERATED AND  
ABANDONED RAILWAYS IN THE COUNTY OF KOŠICE  
INCLUDING NORTHERN HUNGARY  
(BORSOD-ABAÚJ-ZEMPLÍN COUNTY)**

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Authors:

e-volution, s.r.o., Tomášikova 10, 040 01 Košice

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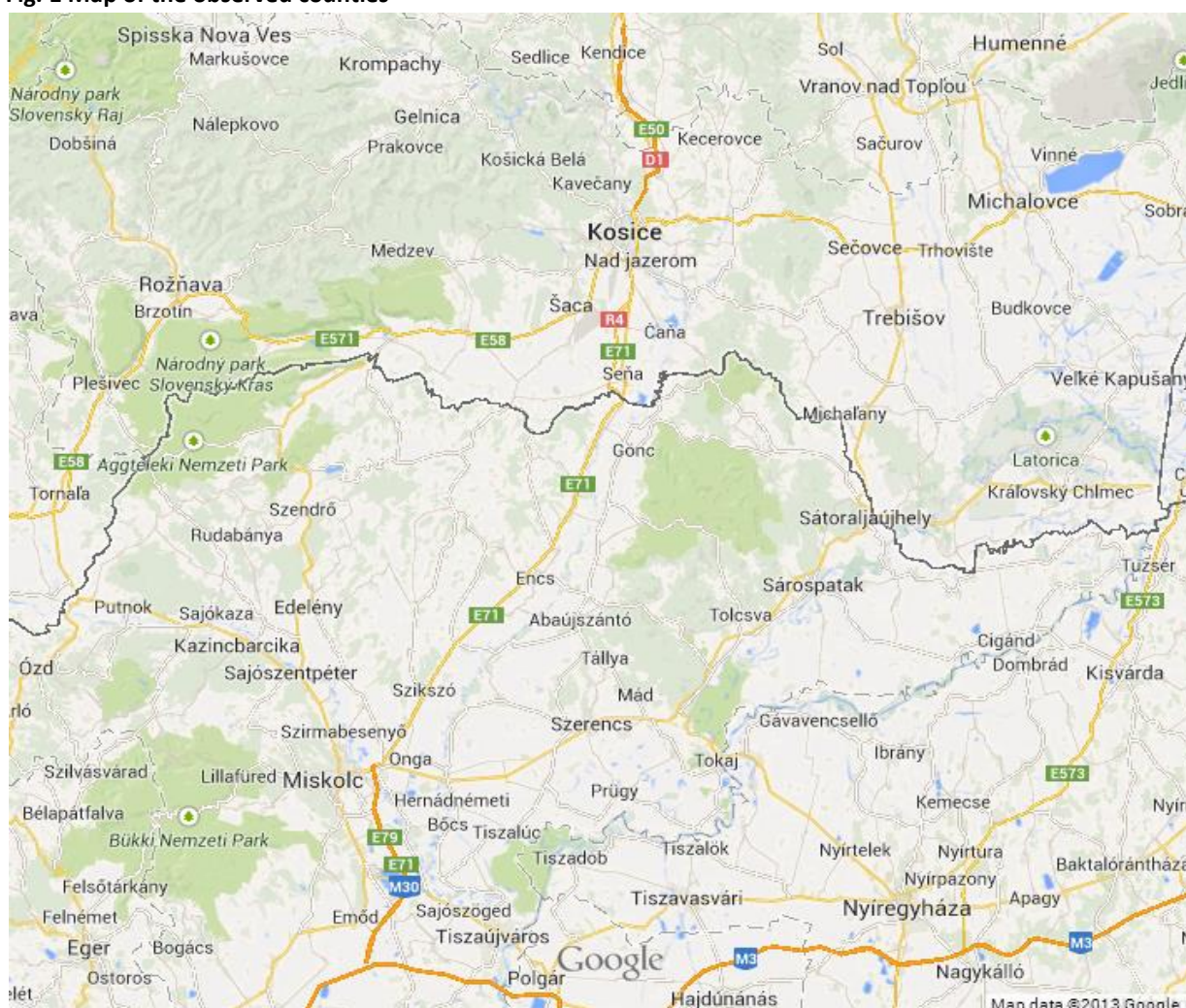
# 1 INTRODUCTION

The main focus of the study is the inventory of existing, operated and abandoned railways in the county of Košice, including Northern Hungary (county of Borsod-Abaúj-Zemplén). It is a comprehensive analysis of the current status of each railway situated in the region. The study reflects their technical condition, frequency of passenger and freight transport, the current use of the stops and the attractiveness of the crossing area as the potential use for development of tourism in the concerned regions.

The study contains chapters focused on basic information about the county of Košice, including information about the county of Borsod-Abaúj-Zemplén from the viewpoint of tourism, complex information about the individual railways and their stations and the analysis of the potential use of rail transportation for development in the sector of tourism.

Based on the used methodology, the results are processed into the form of spreadsheet databases and structural maps, which take into account the measured parameters of the railways and stops from various perspectives. In the conclusion the study indicates common practices from abroad focused on the efficient combinations of local and regional railway transportation in tourism with the possibility of their partial application in the area of the presented counties of Košice and Borsod-Abaúj-Zemplén.

**Fig. 1 Map of the observed counties**



source: [google.maps.com](https://www.google.com/maps)



## 1.1 Inventory of the current railways in the Košice region

In the area of the county of Košice are located railway tracks at the total length of 536.5 kilometers. Another 27 km are tracks, which enter the county, but the most part of their route belongs to the territory of neighboring counties. The territory of the county of Košice is encroached by the railway routes no. 165 (4km), 186 (5 km), 188 (3km) a 192 (15 km). The region has a number of local lines, which are currently not operated and a lot of them are in a large part useless.

**Tab. 1 Overview of the technical parameters of the railway routes in the Košice region**

| Railway route   | Current condition                  | Type of railway       | max. speed | Length |
|---|------------------------------------|-----------------------|------------|--------|
| 160 Zvolen os. st. - Košice   | active                             | partially electrified | 100 km/h   | 94 km  |
| 166 Plešivec - Slavošovce   | suspended passenger transportation | non-electrified       | 50 km/h    | 24 km  |
| 167 Dobšiná - Rožňava   | suspended passenger transportation | non-electrified       | 60 km/h    | 26 km  |
| 168 Moldava nad Bodvou - Medzev   | suspended passenger transportation | non-electrified á     | 50 km/h    | 15 km  |
| 169 Košice - Hidasnémeti MÁV  | active                             | electrified           | 100 km/h   | 21 km  |
| 173 Červená Skala - Margecany   | active                             | non-electrified       | 80 km/h    | 73 km  |
| 180 Žilina - Košice   | active                             | electrified           | 120 km/h   | 83 km  |
| 187 Spišské Vlachy - Spišské Podhradie  | suspended passenger transportation | non-electrified       | 60 km/h    | 9,5 km |
| 190 Košice - Kalša - Trebišov, Sátoraljaújhely-Slovenské N. M. - Čierna n./T. | active                             | electrified           | 100 km/h   | 95 km  |
| 191 Michaľany - Medzilaborce - Lupków (PKP)                                   | active                             | partially electrified | 100 km/h   | 55 km  |
| 192 Trebišov - Vranov nad Topľou  | suspended passenger transportation | non-electrified       | 80 km/h    | 15 km  |
| 195 Bánovce nad Ondavou - Veľké Kapušany                                      | active                             | electrified           | 80 km/h    | 26 km  |

### 1.1.1 Other identified railway tracks

Besides the above mentioned railway tracks the territory of Košice region is dotted with shorter local pathways, which in the past had the importance from the view point of micro-regional perspective. Under the influence of time, socio-economic events as well as actual anthropogenic activities the tracks have been neglected, damaged or completely devastated. Some tracks are preserved only in the condition of residual components, but most of them are totally disassembled.

**Tab. 2 List of the old local railway tracks**

| No. track | Name of railway track           | Length | Current condition                         |
|-----------|---------------------------------|--------|---|
| 801       | Počkaj - Baňa Lucia             | 3 km   | old mining track, remnants of embankments |
| 511       | Vojtechova samota - Podzámčiská | 5 km   | narrow gauge track, disassembled          |
| 513       | Markušovce – Ráztoky            | 18 km  | old mining track, disassembled            |
| 514       | Markušovce – Bindt              | 9 km   | old mining track, disassembled            |
| 515       | Markušovce – Rudňany            | 5 km   | old mining track, disassembled            |
| 517       | Ornava - Krásnohorské Podhradie | 5 km   | narrow gauge track, disassembled          |
| 518       | Nálepkovo – Henclová            | 3 km   | narrow gauge track, disassembled          |
| 519       | Gelnica - Smolnická Huta        | 7 km   | narrow gauge track, disassembled          |
| 522       | Orienovec – Miglinc             |        | forrest railway, flooded track            |

|     |   |       |                                |
|-----|---|-------|--------------------------------|
| 525 | Margecany - Košické Hámre - Malá Lodina | 15 km | Flooded track                  |
| 534 | Michalovce – Morské oko                 | 43 km | Forrest railway, flooded track |

### 1.1.2 Children's railway in Košice

This subhead is dedicated to one of the best examples of preserving narrow gauge railways for the purpose of developing local community services.

**Fig. 2 The route of the children's railway**



source: <http://www.detskazeleznica.sk/index.php?id=4&gi=9>

The Children's railway in Košice is a remarkable example of cooperation. The railway track (3.9 km ) at the suburban recreational area of the city is a popular seasonal attraction. The traffic on the route is operated by a Civil Association called Children's railway Košice (hereinafter KDŽŽ). Thanks to the initiative and work of the association with the support of the city council, during the main tourist season a various number of events are organized with the expenditure of protected historical steam and diesel trains. The target groups are mainly families with children, therefore in the resent past a free bike-wagon has been provided, with even more opportunities for sports and recreational activities. The long-term plan of the civic association is the all year-round operation of the traditional suburban attraction.

## 1.2 Inventory of the current railways in the Borsod-Abaúj-Zemplén County

The railway network in Borsod-Abaúj-Zemplén county is primarily derived from the county town of Miskolc, which from the view of national and international railway traffic is the main boarding point in the county.

Length of the network of railway lines in the county achieves 388 km, out of which 199 km are electrified. The most important railway line for the County is the rail route no. 80, which connects the cities of Budapest - Miskolc - Szerencs - Sátoraljaújhely and then extends to the territory of the county of Košice ( at Slovenské Nové Mesto).

**Tab. 3 Overview of the technical parameters of the railway routes in Borsod-Abaúj-Zemplén**

| Railway route                         | Current status                     | Type of railway               | max. speed | Length |
|---------------------------------------|------------------------------------|-------------------------------|------------|--------|
| 80 Budapest-Miskolc-Sátorújhely       | active                             | partially electrified         | 120 km/h   | 266 km |
| 88 Mezőcsát-Nyékkládháza              | suspended passenger transportation | non-electrified               | 80 km/h    | 20 km  |
| 89 Tiszapalkonya-Tiszaújváros-Miskolc | active                             | electrified                   | 100 km/h   | 30km   |
| 90 Miskolc-Hidasnémeti                | active                             | electrified                   | 100km/h    | 62km   |
| 92 Miskolc-Bánréve-Ózd                | active                             | partially electrified         | 100 km/h   | 58km   |
| 94 Miskolc-Tornanádaska               | active                             | non-electrified               | 60km/h     | 57,5km |
| 95 Kazincbarcika-Rudabánya            | Non-active (plundered)             | non-electrified               | 30km/h     | 15km   |
| 98 Szerencs-Hidasnémeti               | active                             | electrified                   | 50km/h     | 51km   |
| 100c Szerencs-Nyíregyháza(po Tokaj)   | active                             | electrified                   | 120 km/h   | 50 km  |
| Forest railway Pálháza-Rostalló       | seasonal                           | narrow gauge, non-electrified | 30 km/h    | 10 km  |
| 330 Forest railway in Lillafüred      | active                             | narrow gauge, non-electrified | 14 km      | 14 km  |
| 331a Forrest railway in Lillafüred    | Partially operated                 | narrow gauge, non-electrified | 35 km/h    | 16km   |

source: <http://elvira.mav-start.hu/>  
<http://hu.wikipedia.org/wiki/Kezd%C5%91lap>

**Tab. 4 International routes connecting Košice region and Boršod-Abaúj-Zemplén county**

| Railway route                   | Outlet in Slovakia   | Length in BAZ (km) |
|---------------------------------|----------------------|--------------------|
| 80 Budapest-Miskolc-Sátorújhely | Slovenské Nové Mesto | 128                |
| 90 Miskolc-Hidasnémeti          | Kechnec              | 62                 |
| 92 Miskolc-Bánréve-Ózd          | Lenartovce           | 58                 |
| 94 Miskolc-Tornanádaska         | Turnianska Nová Ves  | 57,5               |
| 98 Szerencs-Hidasnémeti         | Kechnec              | 51                 |

### 1.2.1 The Forrest railway in Lillafüred

The county of Borsod-Abaúj-Zemplén also has a great example of preservation of narrow gauge railways.

The route consisting from a main and ancillary track was originally constructed because of the needs of wood processing industry in the National Park Bükk. Today the local railway stretches from Dorotya Street (Miskolc) and is mainly used as a seasonal tourist attraction. On the non-electrified narrow gauge, diesel trains are operated during the whole year with seasonal timetables. During the summer season 7 trains and in the offseason 4 trains run daily. According to the operator Északerdő Zrt. the ancillary track is partially operable, however, is currently under reconstruction. In the past the main runway had several side branches, but they were over the time for various reasons (security, theft of components) dissembled.

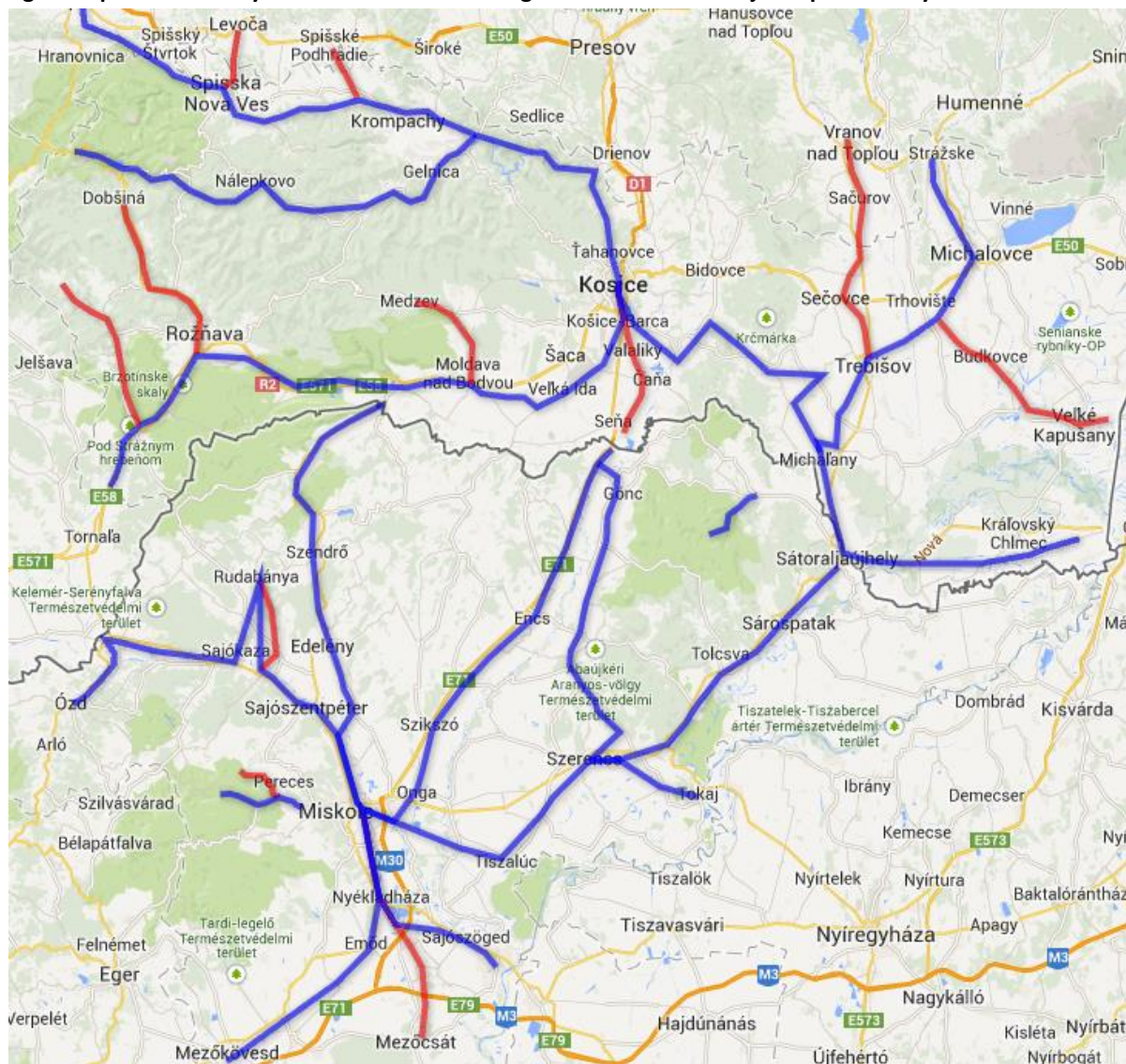
The stops on the route lead to interesting attractions: Castle of Diósgyőr, Bethleni's palace, caves Anna, Stephan and Szelet, ledges Hámor and Molnár, Lake Hámor, Waterfalls of Lillafüred, historical mine Márta.



## 2 EVALUATION OF THE SELECTED PARAMETERS OF THE RAILWAY NETWORK IN THE KOŠICE REGION AND BORŠOD-ABAÚJ-ZEMPLÉN

Based on the map of the railway network it is possible to hold, that the network's coverage of railway lines in the territory of both counties is quite extensive. The blue lines show the active tracks used for regular passenger traffic (even partial), on the contrary, the red lines show the railways suspended for operations of personal transport.

**Fig. 3 Map of the railway network in the Košice region and Borsod-Abaúj-Zemplén county**



source: Google maps, and custom processing, 2013



## 2.1 Evaluation of the selected parameters of the railway network in the Košice region

In the region of Košice there were identified 7 routes, on which the rail passenger transportation is limited or canceled, these lines are leading to:

- From Spišské Vlachy to Spišské podhradie;
- From Moldava nad Bodvou to Medzev;
- From Rožňava to Dobšiná;
- From Trebišov to Vranov nad Topľou;
- From Plešivec to Slavošovce;
- From Košice to Hidasnémeti in Hungary (to Kechnec on the side of KSK);
- From Bánovce nad Ondavou to Veľké Kapušny;

Based on the research of information related to individual **rail stations and stops**, which are representing the **towns and villages on the railway tracks**, there were compiled overviews using map data for both studied areas. For the purposes of evaluation there were used publicly accessible data. For the purposes of the study there were processed selected parameters based on which were compiled outputs in the form of data maps:

- level of interest in terms of tourism,
- overview of employers on railway routes,
- the availability of freight railway transportation on railway stations and stops,
- accessibility of cycling routes using passenger rail transportation,
- accessibility of environmentally important areas,
- localization of railway stations and stops and their basic services.

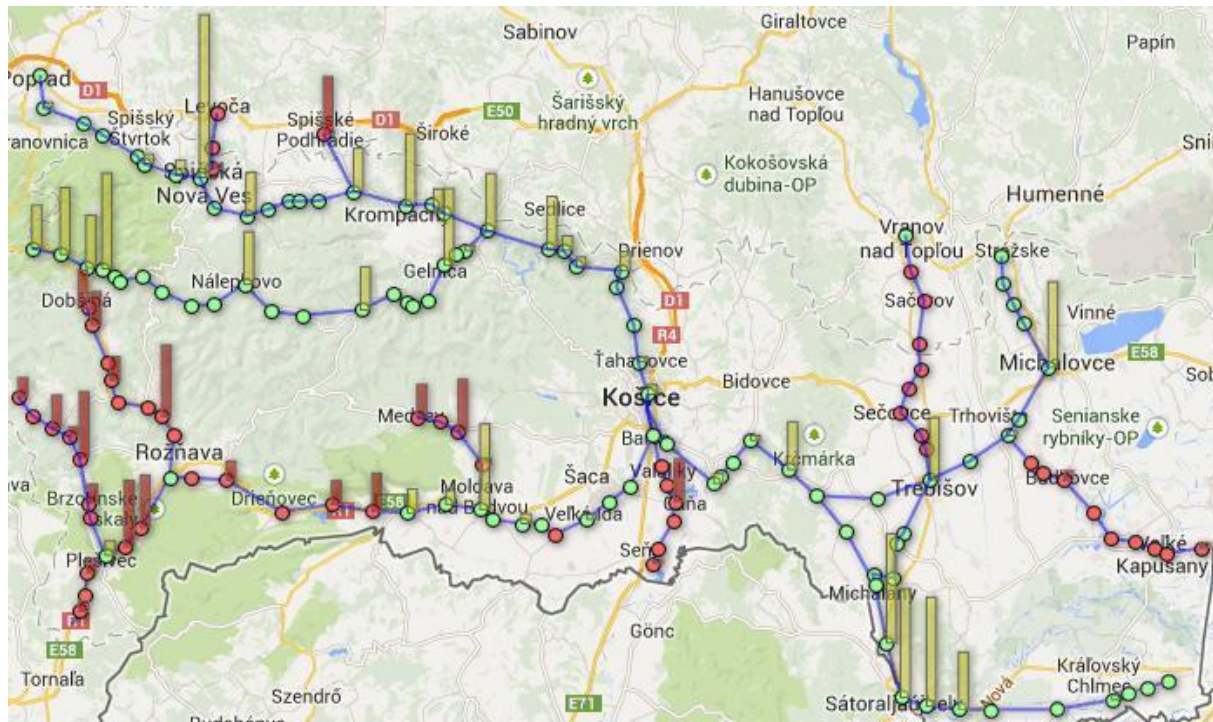
The survey was based on a system of point rating of the chosen parameters depending on the examined characteristics of stops along the route (level of interest, relationship to the environment, access to cycling routes, etc.).

### 2.1.1 Evaluation of the level of interest from the view of tourism at the stops/stations

#### Description:

The map below illustrates the level of interest from the view point of tourism in the territory and in the vicinity of the stops/stations in the Košice region.

**Fig. 4 Evaluation map of the level of interest from the view of tourism at the stops/stations**



Source: Google maps, and custom processing, 2013

#### Methodology:

- Green and yellow marks indicate the active stops/stations for passenger rail transportation.
- The red ones indicate stops/stations, which have been suspended or canceled for rail passenger services.
- The height of the columns symbolizes the level of interest of the site from the view point of tourism. Nonexistent marking indicates a very low number of points of interest from the point of view of tourism in comparison with other sites.

The evaluation of interest of the railway stations and stops in terms of tourism include the following parameters

- affiliation to one or more thematic paths defined in the Košice region,
- the main attraction of the area in which the station is situated - the most important attribute, in which took in the significance of the area (for example the vine region of Tokaj, Valley of Zádiel, caves, possible gateways to national parks),

- the existence of key events of the Košice region,
- the existence of other traditional events,
- attractiveness of the area via other attractions, especially historical or natural.

Despite the relevance to tourism, we evaluated separately:

- the proximity of cycling routes to railway stops / station,
- "the presence" of protected areas.

The point rating was determined on the base of the number of objects fulfilling the properties and subsequently the result was multiplied by a coefficient (0.5 to 4). The coefficient was determined with respect to the significance of the attributes for the given evaluation and for the best possibility of overview and comparison of data on the maps. In the resulting visualization of the evaluation Košice city and district towns (except towns Gelnica, Michigán, Ves and Trebišov) were excluded, considering the comparability of data in relation to other cities.

### Conclusion:

From the viewpoint of the current state of tourism attractiveness in the concerned locations there can be seen a large number of stops/stations with inactive rail passenger transportation in the west are of the Košice region (vicinity Rožňava, Moldava nad Bodvou and Dobšiná), which are situated in attractive areas with above-average offer and potential for tourism.

- The unused route between Rožňava and Dobšiná represents a direct connection between the National Parks Slovak Karst and Slovak Paradise, while the stations and stops on the the route directly represent gateways to those parks (Dvorníky - Zádiel, Slavec cave, Vida, city Dobšiná).
- The northwest territory of the National Park Slovak Paradise is serviced by passenger rail lines in regular mode (line Červená Skala - Margecany).
- Furthermore, it may be concluded that in the Northern Territory of the region, the absence of rail passenger transportation between the towns Krompachy and Spišské podhradie, as well as between Spišská Nová Ves and Levoča (part of the county of Prešov ) does not correspond the trend in foreign countries (see Section examples of good practice). **Cities with higher indicators of cultural and historical values are commonly connected at least with seasonal tourist trains for the needs of higher intensity of cultural and cognitive tourism.**

A positive aspect is the fact, that historical mining localities in the area of Gelnice and Krompachy are linked by active routes. Beneficial relationship status between passenger rail transportation and tourism may be traced in the southeastern part of the county. The railway track crossing through the Tokaj wine region is adequately operated, in particular because of the linking of Košice with Čierna nad Tisou. In the future, form this situation could also benefit the stops (villages) in the micro-region of Medzibodrožie. The concerned municipalities haven't shown a high evaluation of the current attractiveness of tourism, but they are gateways to significant wine-producing destinations, which do not have their own railway station.

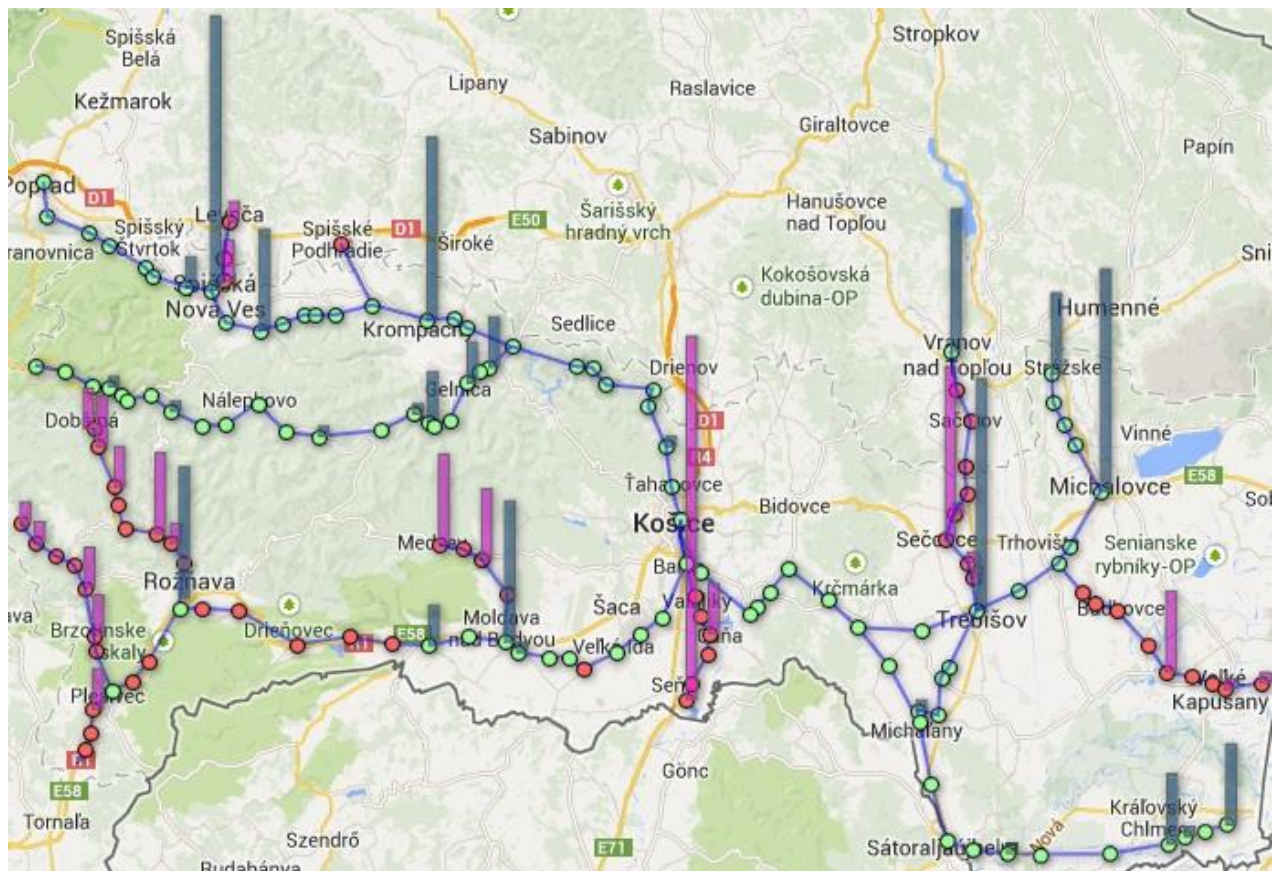


### 2.1.2 Significant employers on the railway lines

**Description:**

The map below shows the comparison of the localization of significant employers from the perspective of active stations and stops; we may observe a similar situation as in the case of tourism.

**Fig. 5 Map of significant employers on the railway lines**



source: Google maps, and custom processing, 2013

### Methodology:

- Green and blue markers indicate active stops/stations of passenger rail transportation.
- Red and purple markers indicate stops/stations, on which have been suspended or canceled for rail passenger services.
- The heights of the columns symbolize the importance of the location in terms of employment or the presence of significant employers (including wood processing companies). Nonexistent marking indicates a very low number of significant employers or it does not evaluate in detail the existence of small and micro - companies.





### Methodology:

- Green and red markers indicate active freight railway stops/stations.

### Conclusion:

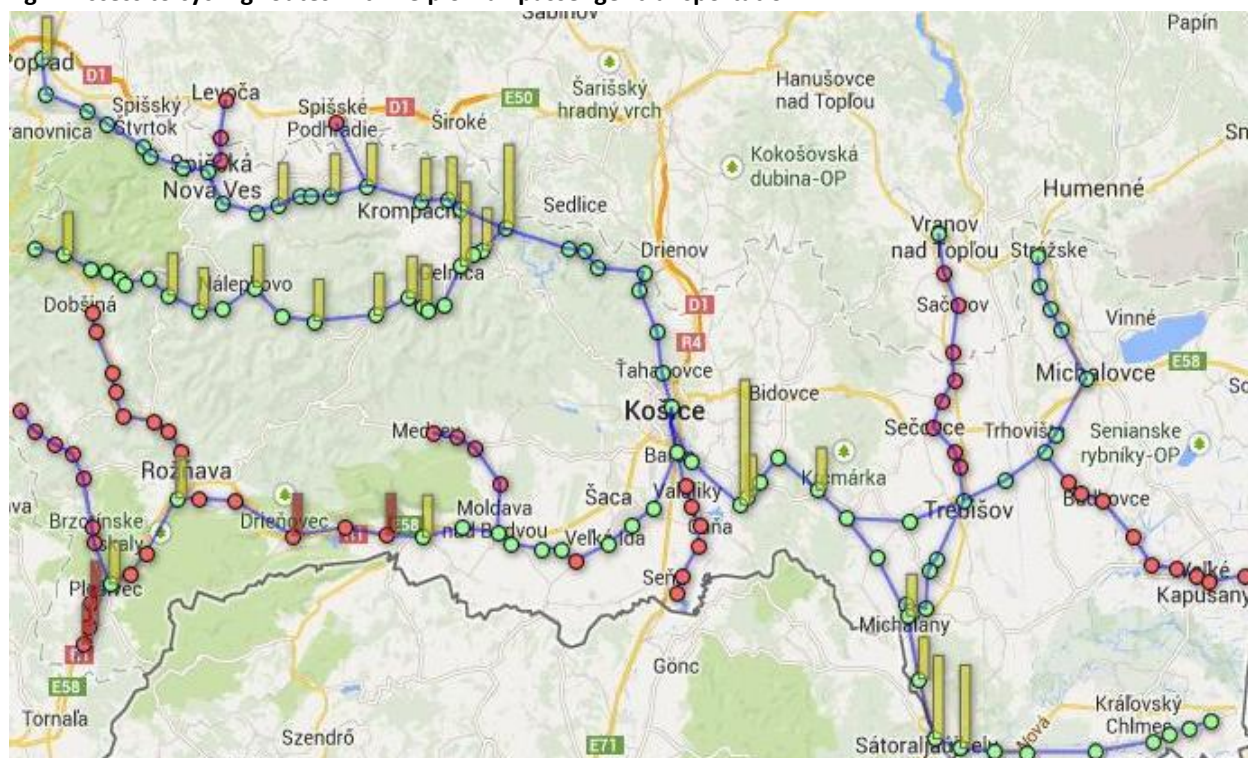
The positive point in terms of employment is the **existence of rail freight transportation** (Fig. 5) - and even on the lines on which services of passenger rail transportation were canceled. The possibility of loading merchandise is available at about 36 % of the stations/stops in the Košice region. **Loading docks are also available in most localities with major employers**, including wood processing companies- for example in these areas- Dobšiná, Medzev, Jasov. The **existence of rail freight transportation** in these areas **may be considered** as an **important factor in employment and regional development**.

### 2.1.4 Access to cycling routes with help of rail passenger transportation

#### Description:

The map below shows the accessibility of cycling routes from observed railway stations and stops the Košice region.

**Fig. 7 Access to cycling routes with help of rail passenger transportation**



source: Google maps, and custom processing, 2013

### Methodology:

- Green marks indicate active stops/stations of passenger rail transportation.
- Red marks indicate stops/stations which have been suspended or canceled for rail passenger services.
- The height of columns symbolizes access to a bike trail or multiple paths.



### **Conclusion:**

Most areas with access to cycling routes currently dispose active passenger rail transportation. From this point of view the southern and southwestern area of the county may be considered as the least accessible for cycling tours with use of railway transportation - Dvorníky - Zádiel (among other this is the gateway to the valley of Zádiel an important hiking area), Jablonov nad Turňou or Čoltovo and Bohúňovo.

A positive aspect is the existence of rail passenger transportation in the wine region of Tokaj, through which it is possible to access existing cycling routes in this area. Among others through the municipalities of Slovenské Nové Mesto and Sátoraljaujhely it is possible to access international cycling routes (cycling Zemplén and Eurovelo in Hungary).

From the above written, it is considerable to take into account the necessity of developing bundled services for cyclists. The use of these cycling routes with public rail passenger transportation could be beneficial for the concerned areas, as well as the environment. For example, an integrated information system with complex cycling guidelines and tables with the purpose of promoting options of cycling with use of trains, could not only enhance the visit rate of the region, but also open new opportunities for development of sustainable and eco friendly tourism.

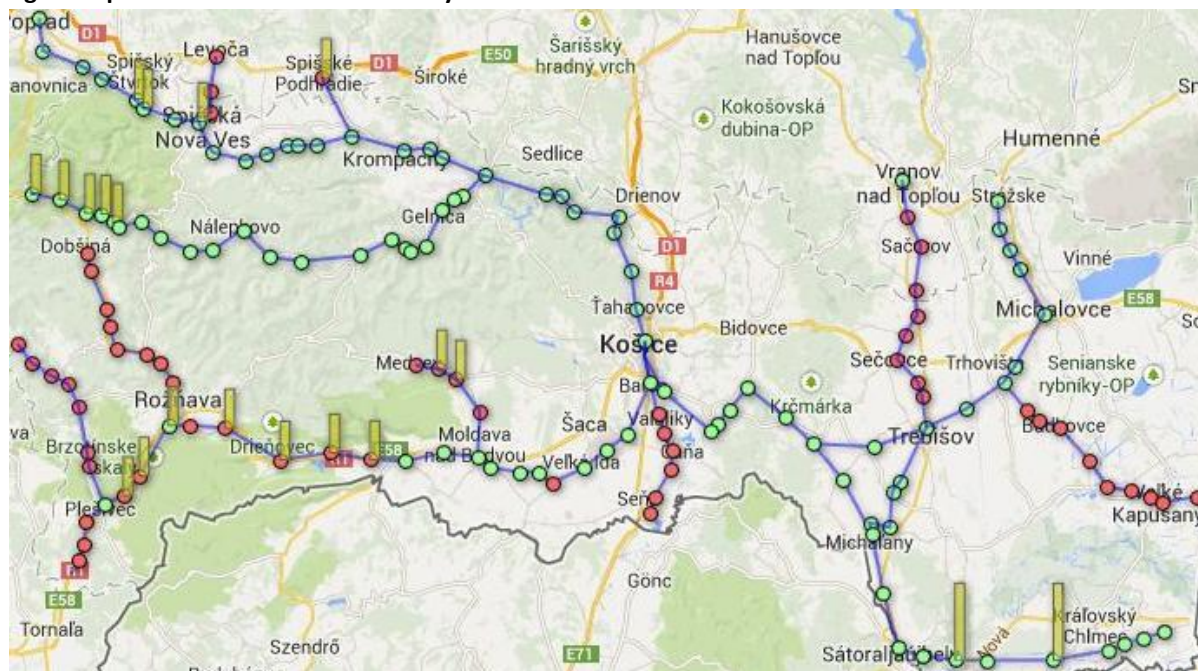
Despite the fact that the parameter would be suitable for the evaluation of level of interest from the view point of tourism, for the purpose of better overview we consider the accessibility to cycling routes as a significant independent element. Based on the evaluation from foreign best practices, we may conclude that the existence of cycling routes helps to motivate the use of rail transport - trains against cars and buses are a more efficient way of transportation, because of affordability and capability to transport of a larger number of bicycles.

## 2.1.5 Relations of the railways to the environment

### Description:

The map below shows the relations between interesting areas of environmental protection and the railways, their stops and stations in the Košice region.

**Fig. 8 Map of the relations of the railways to the environment**



source: Google maps, and custom processing, 2013

### Methodology:

- Green marks indicate active stops/stations of passenger rail transportation.
- Red marks indicate stops/stations which have been suspended or canceled for rail passenger services.
- The height of columns symbolize the crossing of the railway through interesting areas of environmental protection - including national parks Slovak Karst and Slovak Paradise and protected areas (PLA Devil's Rock, PLA Vihorlat, PLA Latorica, PR Taiba).

### Conclusion:

From the view point of environment the study attaches higher importance to railway stations and stops, which are located in areas of national parks and significant protected areas and to routes, on which are located significant natural monuments (caves, protected fishponds).

As the examples of best practices from abroad show, **among the most important factors of development or interference of rail transport belongs the promotion of sustainable tourism - and particularly in areas sensitive to friendly behavior towards the environment, nature, unique and protected areas.**

The railway routes in the Košice region may be considered very interesting from the view point of accessibility to areas such as National Parks Slovak Karst and Slovak Paradise and attractive landscape cycling routes.

### 2.1.6 Accessibility of the stops/stations

#### Description:

The map below shows the accessibility of the railway stations and stops to their municipalities and the level of amenity of the stations buildings in the Košice region.

**Fig. 9 Accessibility of the stops/stations in KSK**



source: Google maps, and custom processing, 2013

#### Methodology:

- Colorful circular formations represent the location and accessibility of the stop/station building at three levels:
- Green color - stop/station is located in the village/center;
- Blue color - stop/station is located on the outskirts of the village/town;
- Red color - stop/station is located outside of populated territory of the municipality/city.
- The height of columns represent the level of services in the stop/station buildings (service indicators were assessed through e-mail survey);

For the purpose of the study there was conducted a survey through a questionnaire for the mayors of the considered municipalities. In the survey the following services were taken into account:

- the possibility of luggage storage,
- the possibility of long-term parking,
- existence of bike rentals,
- existence of other services in the station building.

Other services include a various specific services, which are provided in the station buildings (restaurants, information center, etc.). The current situation was assessed based on the responses from the municipalities, which participated in the survey. The selected parameters help to determine the level of



existing services, which in the final result may affect the interest of passengers (especially tourists) to use rail passenger transportation.

**Conclusion:**

As it may be seen on the map, most stops/stations are located in populated territories of municipalities. According to the positions of the stations and their location regard to the attractiveness of the area (area of national parks), these stops could be used as starting points for hiking and focus on the improvement of services at stations, that have the potential for tourism development in the region.

## 2.2 Evaluation of the selected parameters of the railway network in the county of Borsod-Abaúj-Zemplén

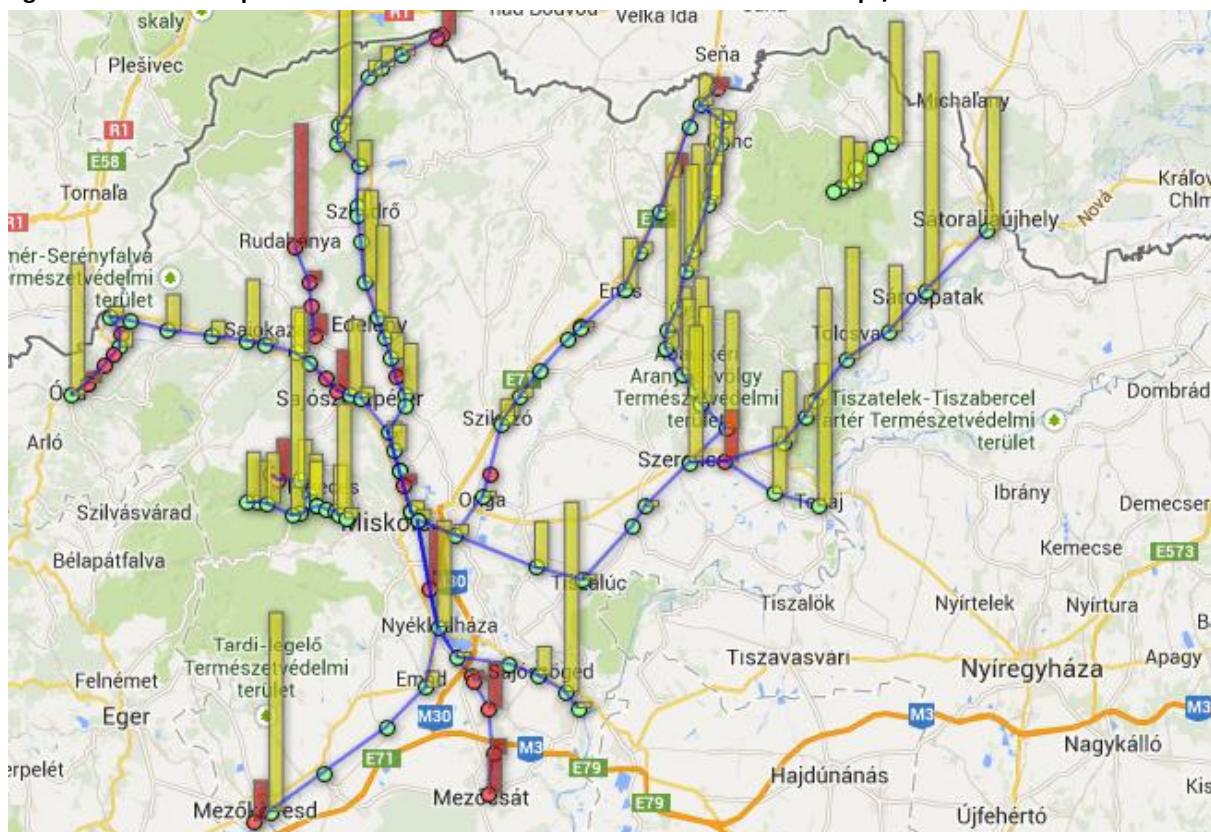
The evaluation of the railway routes in the county of Borsod-abaúj-zemplén was established by the same methodology as for the county of Borsod-Abaúj-Zemplén.

### 2.2.1 Evaluation of the level of interest from the view of tourism at stops/stations

#### Description:

The map below illustrates the level of interest from the view point of tourism in the territory and in the vicinity of the stops/stations in the county of Borsod-Abaúj-Zemplén.

**Fig. 10 Evaluation map of the level of interest from the view of tourism at stops/stations**



source: Google maps, and custom processing, 2013

#### Methodology:

- Green and yellow marks indicate the active stops/stations for passenger rail transportation.
- The red ones indicate stops/stations, which have been suspended or canceled for rail passenger services.

## Conclusion:

The county seat Miskolc was due to the objectivity of the evaluation excluded. In the county of Borsod-Abaúj-Zemplén we may observe indicators with higher primary tourism offer. This phenomenon results from a greater concentration of attractions or because of the more intense promotion. Passenger train services are indeed at regular intensive operation, but implementation of its use in favor of micro-regional tourism is limited in technical terms (standard and level of equipment in trains). A positive is the interconnectedness of the villages of the vine regions Tokaj and Bükkalja with the county seat Miskolc.

The territories of these areas also have active railway connections with the wine regions of Košice region and also with Košice. As may be seen, spa towns as Mezőkövesd, Sárospatak and Tiszaújváros also indicate a higher value from the viewpoint of the level of interest in terms of tourism. A higher concentration of winery villages in both counties consistently follows the trend of active passenger train traffic in the areas. From the perspective of local suburban tourism the Forest Railway of Lillafüred, which combines historical, cultural, incentive factors with recreation in nature, represents a great potential for development.

In the future the canceled railway line between Kazincbarcika and the historic mining town Rudabánya could be utilized for seasonal themed trains, because the territory is historically a significant mining site. The absent passenger traffic on the route between the cities of Mezőcsát and Nyékládháza from the viewpoint of tourism development subjectively does not play a big role, because the track is located with just two stops with average values.



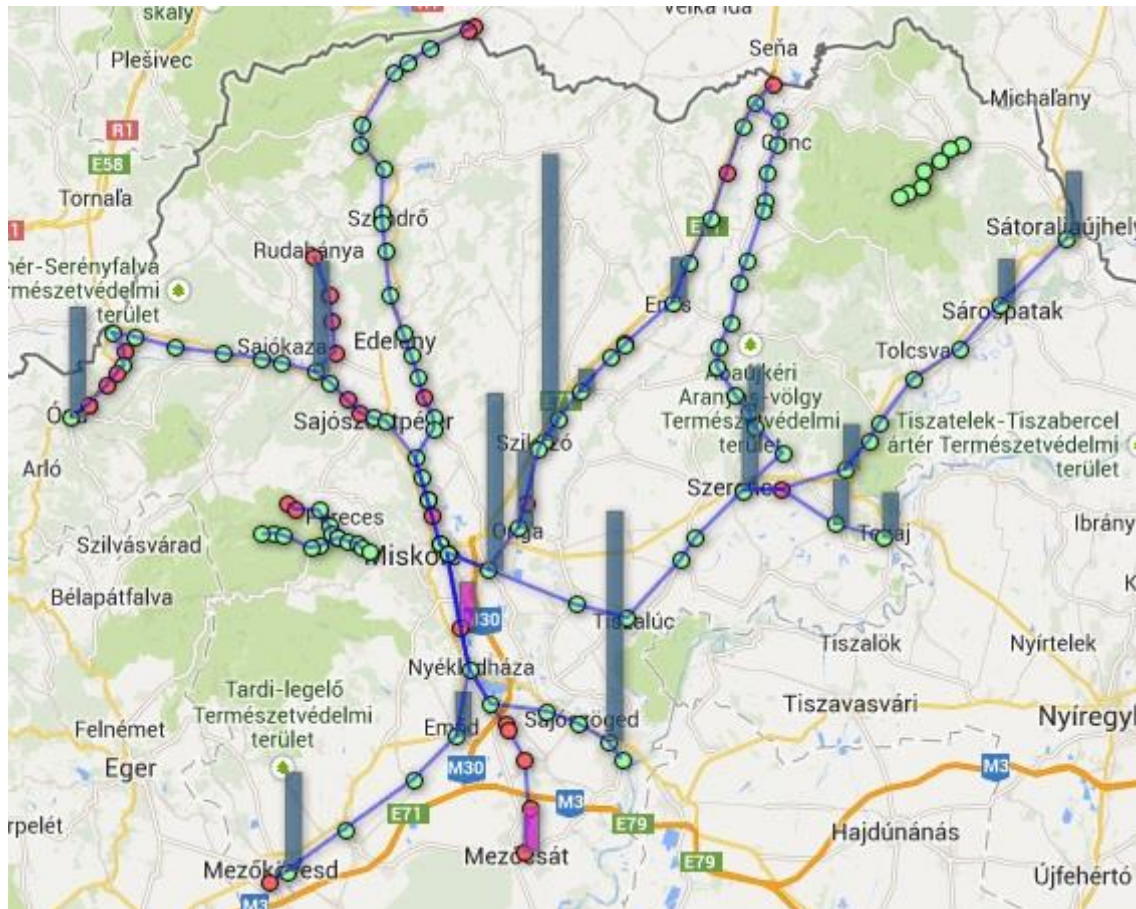


## 2.2.2 Significant employers on the railway lines

### Description:

The map below shows the municipalities of the railway stations and stops from the views of occurrence of significant employers in the county of Borsod-Abaúj-Zemplén.

**Fig. 12 Map of significant employers on the railway lines**



source: Google maps, and custom processing, 2013

### Conclusion:

Because of the objectivity of the evaluation the county seat Miskolc was excluded from the evaluation. As it may be seen on the map, the county of Borsod-Abaúj-Zemplén from the viewpoint employment is significant only in cities with established industrial parks. In other towns, villages the employers are represented by smaller companies, which have limited opportunities to create working places. In the micro-region of Tokaj, medium-sized and family wine businesses play an important role, because they are able to create limited seasonal jobs.

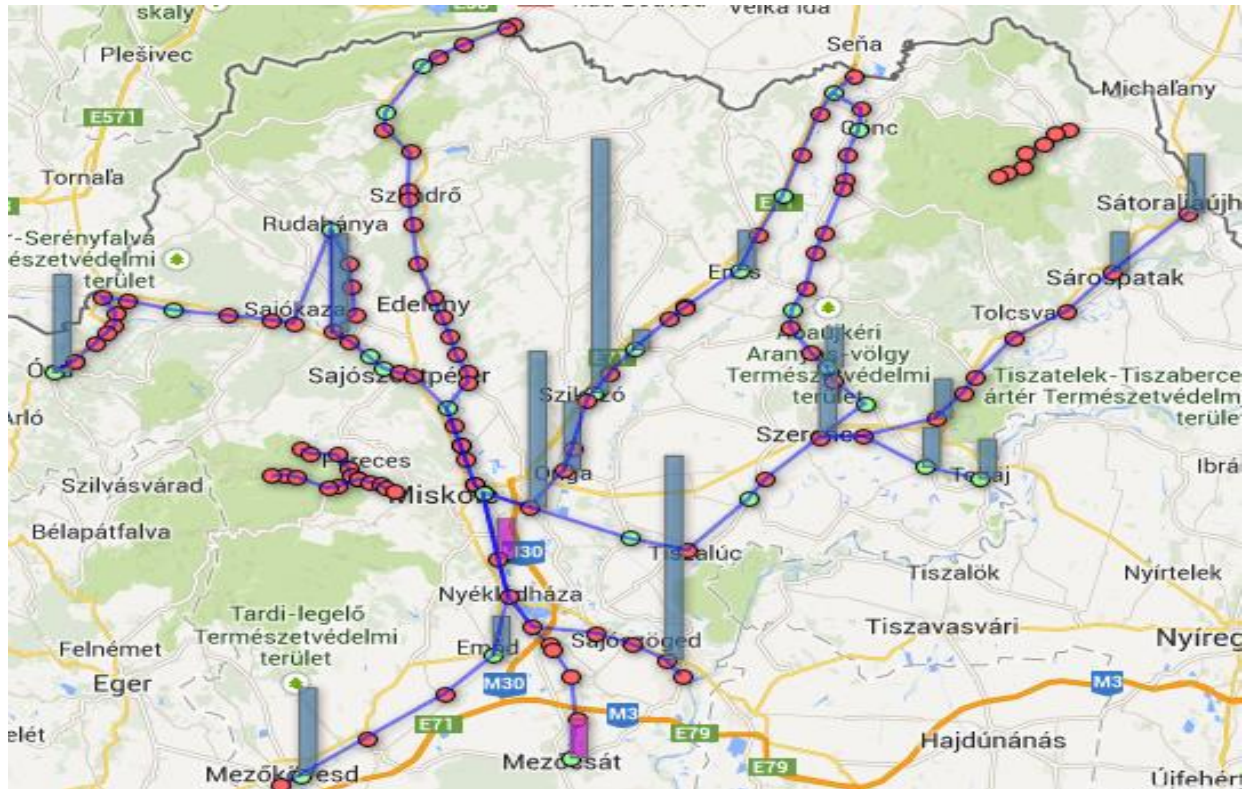


### 2.2.3 Availability of rail freight transportation at the railway stops/stations

#### Description:

The map below shows the comparison of availability of rail freight transportation at the railway stations and stops in the county of Borsod-Abaúj-Zemplén.

**Fig. 13 Map of availability of rail freight transportation at the railway stops/stations**



source: Google maps, and custom processing, 2013

#### Conclusion:

From the perspective freight railway transportation, Borsod-Abaúj-Zemplén county represents a transit territory with a lower intensity of loading stops/stations. This follows from the fact that most of the transshipment points are owned by private companies, which use them only for their own purposes.

On the map, the green markers represent stops, at which the largest cargo carrier Rail Cargo Hungary operates its commercial operations. As it may be seen RailCargo Hungary operates in most of the municipalities which locate industrial parks or major employers.

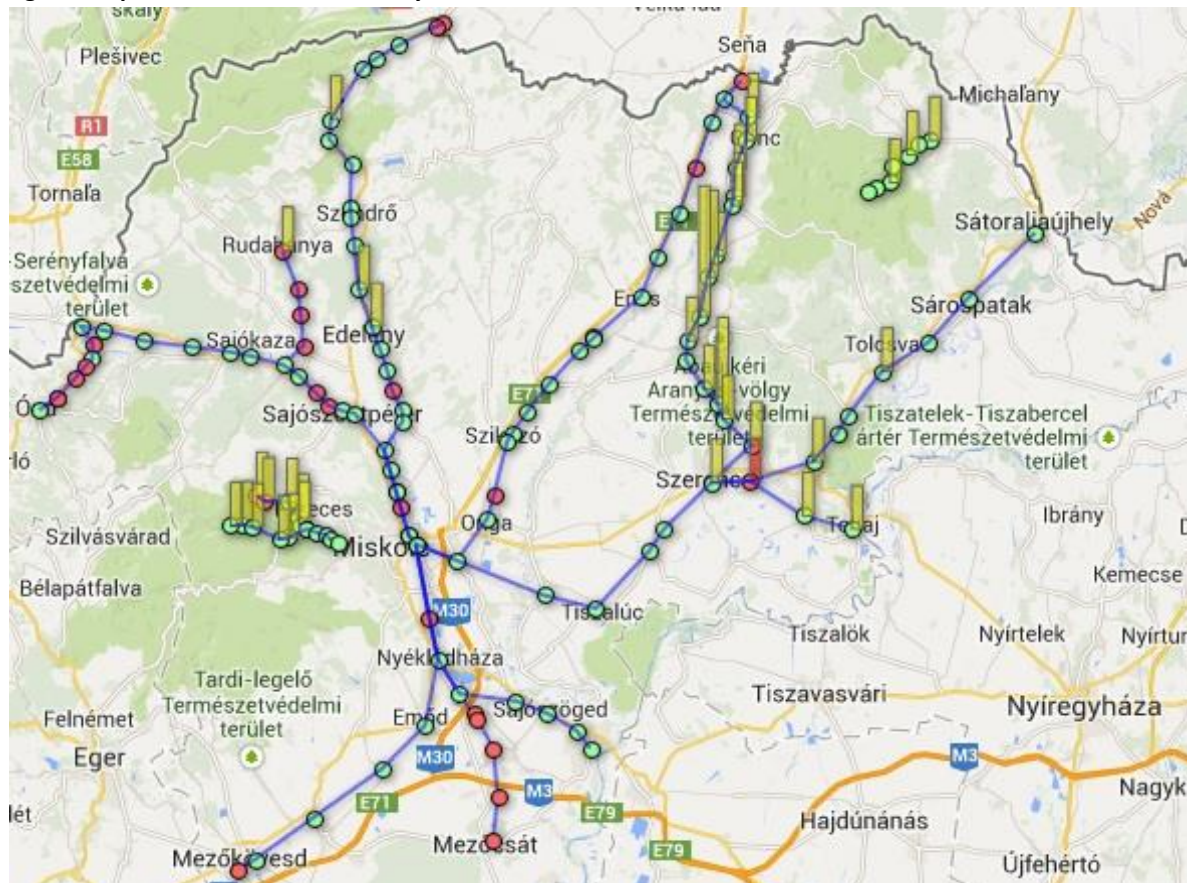


## 2.2.4 Relations of the railways to the environment

### Description:

The map below shows the relations between interesting areas of environmental protection the county of Borsod-Abaúj-Zemplén and the railways, their stops and stations.

**Fig. 14 Map of relations of the railways to the environment**



source: Google maps, and custom processing, 2013

### Methodology:

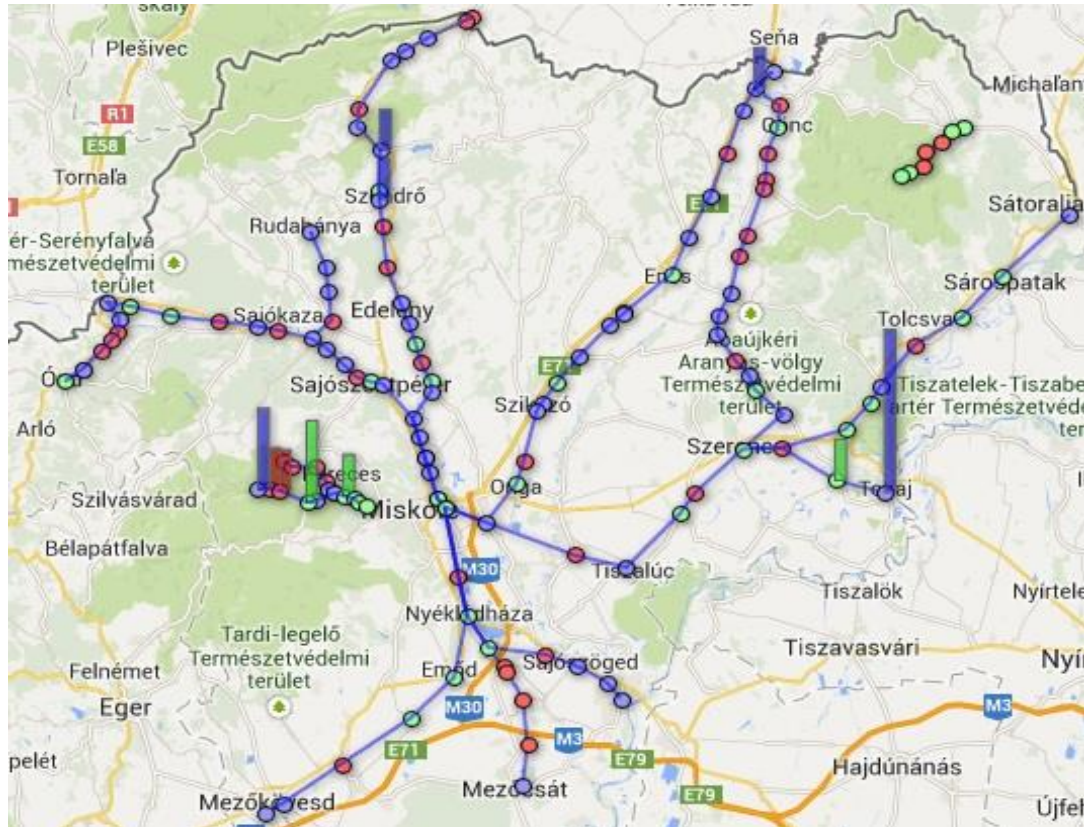
- Green marks indicate active stops/stations of passenger rail transportation.
- Red marks indicate stops/stations which have been suspended or canceled for rail passenger services.
- The height of columns symbolizes the crossing of the railway through interesting areas of environmental protection - including National Parks Aggtelek and Bükk, protected landscape areas (PLA Zempléni, PLA Tokaj-Bodrozug), as well as protected areas (Grasslands Szendrőlád, Salt Lake-Pastures, Edelényi Magyar Nőszirmos, Tállyai Patócs, Vineyard of Turzó).

## 2.2.5 Accessibility of the stops/stations

### Description:

The map below shows the accessibility of the railway stations and stops to their municipalities and the level of amenity of the stations buildings in county of Borsod-Abaúj-Zemplén.

**Fig. 15 Map of accessibility of the stops/stations**



source: Google maps, and custom processing, 2013

### Methodology:

The heights of columns represent the level of services in the stop/station buildings (service indicators were assessed through e-mail survey);

- Colorful circular formations represent the location and accessibility of the stop/station building at three levels:
- Green color - stop/station is located in the village/center;
- Blue color - stop/station is located on the outskirts of the village/town;
- Red color - stop/station is located outside of populated territory of the municipality/city.

### Conclusion:

As it may be observed on the map, the majority of stops are located in the outskirts of municipalities. From the perspective of comfortable traveling are interesting the stops located in villages, but in terms of tourism also stops outside the populated areas may be relevant. In areas with high value of primary and secondary tourism offer, stop/stations outside the urban area may be used as a connector of attractions (tourist focal point, bike rental, etc.).

### 3 CONCLUSION

As the examples of best practices from neighboring and also distant countries of Europe, but also the examples of use of historical trains in the activities and events of the Košice region show, that the importance of railway transportation has not been silenced. Based on the inventory of railway lines in the KSK and adjacent cross-border area of Northern Hungary, there may be expressed a number of interesting observations and suggestions.

Railway lines with canceled / suspended passenger transportation in the vicinity of the National Park Slovak Karst and Slovak Paradise (canceled passenger transportation) are the gateways to regions attractive for activities oriented on tourism - hiking, and cycling. These areas are also interesting from the view point of cultural and cognitive tourism and regions are also represented by rich natural resources sensitive of environmental protection.

The northern part of the Košice region, in the location of historical towns Spišská Nová Ves and Spišské podhradie (canceled passenger railway transportation) shows an area with a higher concentration of cultural/historical landmarks and monuments, which concludes to the possibility of interesting railway links from the perspective of tourism.

Border areas are not only dependent on their own resources and offer. The interconnections of the regions of Slovak and Hungarian Tokaj may be beneficial for both parties. The expedition of a so called "tasting-sightseeing train" along the railway lines, which stops at places of interest of wine culture could represent a form of cross-border cooperation. Also this kind of a train could bring progress in the development of local and international cycling or involve significant cultural and historical attractions for sightseeing activities. An expedition of a train with its own speed mode with the possibility of speed reduction in passing areas with "mind blowing" scenery, with the combination of tasting of local products and longer break-stops in various destinations of interest, represent abroad an alternative way of direct support of regional tourism binding to traditional production.

- Examples from abroad show a very interesting opportunity to promote tourism by introduction of seasonal passenger rail lines.
- Seasonal and regular rail links have today several possibilities for their expansion towards services with higher added value, for example in the form of specialized wagons:
  - for simpler transfer of more bikes without reservation,
  - with the possibility of sightseeing and audio accompaniment directly from the wagon,
  - with possibility of speed reduction for photographers,
  - with the focus on gastro-tourism (restaurants, wine tasting).
- On selected routes with stops near biking trails is for consideration- the use of trains as mobile bike rental for all-day trips.

The current situation points out relatively neglected railway stations - even in areas interesting in terms of tourism, and also the railway lines with canceled passenger transportation.

- Examples of best practices from abroad again point out this attribute in terms of marketing activities - as an important element for tourists who decide on the selection of forms of transportation to the destination.



- Whether canceled or operated railway stations, to encourage the use of railway transportation it is appropriate to consider the improvement of tourist services:
  - the promotion of the sale of tickets,
  - the establishment of luggage storage,
  - the establishment of bike rentals,
  - the promotion of long-term car parking in boarding stations.
- In order to support tourism, existing railway stations could serve as centers of tourism, especially in areas where establishing other centers does not have a suitable location, or infrastructure.
- An interesting attribute of support of tourists, but also other passengers are additional innovative services such as free internet access, or the possibility of charging mobile phone batteries, which are commonly available abroad.

All found examples of best practices show the importance of cooperation - for the success of any new idea or rehashed use of railways, a very powerful marketing cooperation is essential - in particular cooperation between key players in the tourism industry and creation of an tempting complex offer.

Promoting tourism is not the only a factor determining the meaningfulness of supporting the railway transportation. Based on the inventory it may be concluded, that railway transportation in the explored regions is for consideration for further support and development, because of a number of synergistic aspects:

- The use of railway transportation supports protection of the environment and the development of eco - tourism - hiking, biking. Topic of the environmental protection is particularly striking in the National Park Slovak Karst, Slovak Paradise and Tokaj.
- The use of both passenger and freight railway transportation supports employers in regions with low employment rates (Gelnica, Dobšiná, Medzev, Jasov).

Given the complexity of the issue of operation of railways and the fact of several issues related to the profitability of rail transportation, the suggestions of ideas require more detailed technical and organizational process, oriented by the selection of particular railroad tracks.

The above mentioned alternative proposals are realizable, but they are a so called run for the long haul. Not only good promotion, but also all kind of benefits for passengers play a huge role, whether in terms of marketing, innovation, or alternative initiatives. Incorporation of product packages with **discount tickets** with the option of **partial refund of the excise tax**, which would be used as a **contribution** to selected **institutions** (for example cultural institutions), could be a welcoming sign from the state. **The commercial site** of this kind of an alternative is functional **on a base of tripartite** between railway companies, public institutions and the private sector, represented by providers of secondary tourism services. **Discounts in businesses** in the concerned destinations in return for **traveling promotion in the supraregional area** could lead to way of effective cooperation. Developing this kind of a model of cooperation requires a further research of feasibility and profitability.

### 3.1 Proposals for the development of tourism products in the territory of the Košice region

At the use of railways in the Košice region with the absence of passenger railway transportation it is necessary to count with fact of **active freight rail transportation**, which does not run under regular time schedules and on the other side its elimination is contrary to the public interest (burden of road communications). This fact **limits the alternative usage** of these lines and is a matter of setting the cooperation between key players, including managers of railways and rail connections.

#### 3.1.1 Local historical railway routes

With the reorganization of irregular freight transportation on **local routes** with the absence of passenger railway transportation such as **Spišské Vlachy - Spišské Podhradie** and **Spišská Nová Ves - Levoča**, these routes could have the opportunity revive on similar principles of operated thematic railways as the **Forest railway of Lillafüred or the Children's railway in Košice**.

The railway track **Spišské Vlachy - Spišské Podhradie** which according to the available information has canceled passenger and freight rail transportation; this fact represents the possibility of creating an **alternative connection** between the two municipalities

- transformation of the track into a 9 km long cycling route,
- enhanced possibilities of active recreation for tourists and residents.

Options of preserved mining and forest railway paths:

- recultivated off road cycling routes on the basis of voluntary activity

#### 3.1.2 Railways and accommodation

Today's generation of hikers are more or less focused on the experiential factor at the expense of comfort. Expedition of **low standard accommodation** trains on the lines with higher rates of places of interest to destinations with the absence of accommodation capacities has a chance to reach the general public:

- thanks to the extensive rail network accommodation trains have the option of flexible movement,
- transfer of mobile dormitories without breaking the passenger rail transport services time schedules: "parking" during the stops in the destinations on the parking track directly in the station area,
- the subject of analysis of the commercial site:
  - o Rental to backpacking expeditions with own customized itinerary,
  - o rental to associations and other organizations at more day visits of destinations with absence of accommodation capacities,
- unused buildings in areas with higher rates of places of interest (Dobšiná, Vlachovo, Spišské podhradie):
  - o possibility of creating a "low-cost" tourist accommodation establishments.

### 3.2 Proposals for the development of tourism products in the territory of the Borsod-Abaúj-Zemplén County

In the county of **Borsod-Abaúj-Zemplén**, apart from the **cross-border cooperation** the alternative of cycling trains on the existing forest railways Lillafüred and Pálháza on the principles of foreign best practices:

- The cancelled track between the towns of **Kazincbarcika and Rudabánya** represents an important **historic mining site**. Its **seasonal** recovery could create a space for cultural-cognitive tourism, as well as for the restoration of regular passenger transportation.
- In this case, the support from the state is necessary respectively, since it is the part of an **international mining road**; bilateral cooperation comes into consideration, since the commercial site of **mountain (mining) tourism** in both countries is still relatively a **young product** in the market of tourism.

### 3.3 Cross-border cooperation in the creation of tourism products

As mentioned the two cross border regions does not have to depend only on their own offer and resources. The next models show a few examples how the two regions could create products of tourism through cross-border cooperation. These examples focus on the common features of the analyzed regions.

#### 3.3.1 Thematic cross-border historic train Košice - Sárospatak

Expedition of a historic train on selected locations of the Rákóczi families' fame:

- at the celebrations commemorative jubilees of the Rákóczi genus in both cities,
- at the visits of larger tourist groups.

**The thematically historic train** in the style and colors of the Rákóczi genus and with an **antique interior** except induction of the atmosphere would meet the purposes of:

- strengthening of the official partnership between the two cities,
- expedition of larger groups with guided information on the train not only about the Rákóczi family, but also the touristic opportunities in both cities,
- mutual support visits of cultural and cognitive institutions in both cities, as well as general movement of tourist in the destinations.

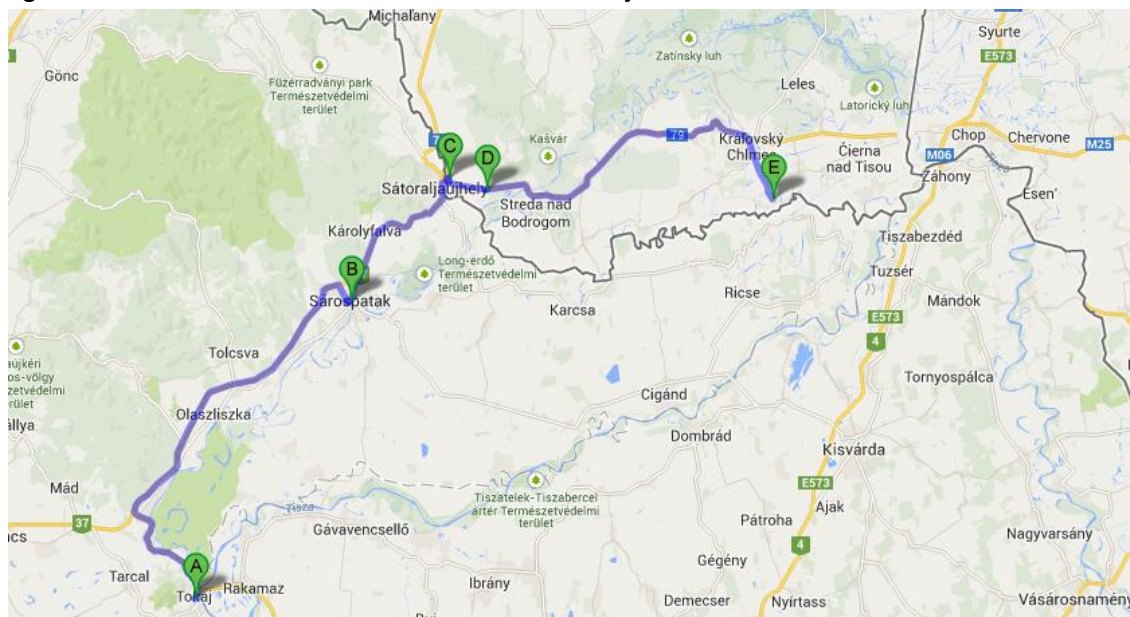


### 3.3.2 Tokaj without borders

Expedition of a **seasonal cross-border train** along the partner municipalities of the **Tokaj wine region** (SK / HU) during **major cultural festivals related to the wine** could develop into an interesting product. Expedition of a train from the Hungarian village of **Tokaj** (through the villages towards Sátorajajúhely) connected to **Slovenské Nové Mesto** with the connection to the villages of the Slovak Tokaj until Pribeník (wine region of Chlmec) could meet the following purposes:

- transport of larger groups of tourist;
- support the organization of multi-day international events,
- building of more intensive partnerships,
- exchange of winery technologies,
- support of local product and branding,
- strengthening the cross-border Tokaj region as a complex product of the global tourism market,
- support of tourism in other wine regions.

**Fig. 16 The route of the thematic train connection "Tokaj without borders"**



source: Google maps, and custom processing, 2013

#### EXAMPLE:

At the occasion of the well-known Tokaj festival in Viničky (SK) the "Train of the friends of wine" is dispatched in the village of Tokaj (HU), which along the route no. 100c with connection on the route no. 80 collects the visitors of the festival along the stops. On the way to Viničky the passengers have the option of tasting products of the festival exhibitors. After the end of the festival the dispatched train from Viničky will take the visitors of the festival back to their boarding points.



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