DELIVERABLE D.T1.2.7

Territorial needs assessment for Western Hungary

Version 1.0
102017

1. Overview of the selected region

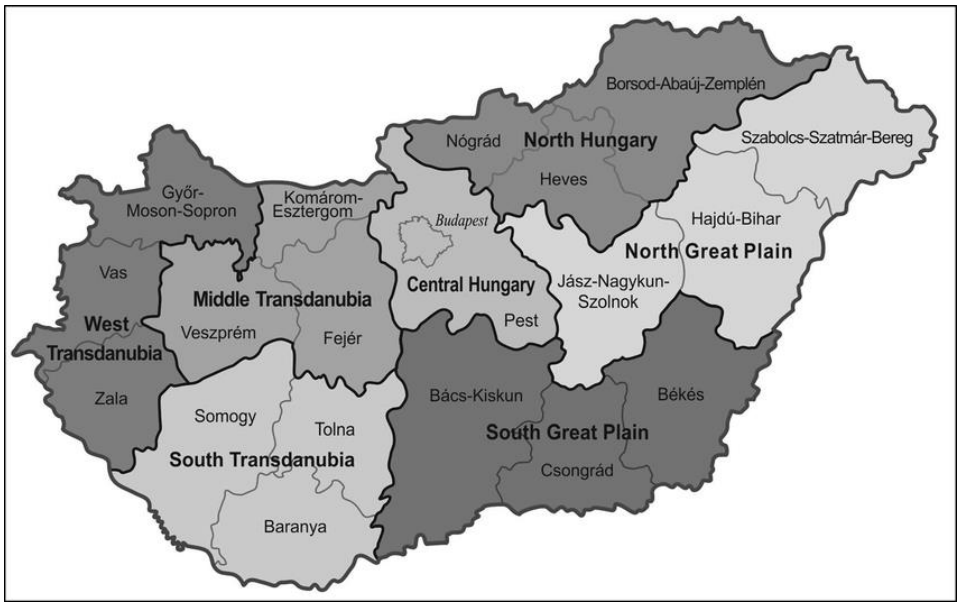
Delimitation and basic geographical description of the pilot area

Within the pilot action no. 8 (D.T2.2.10) – the introduction of the multi-lingual and multimodal passenger information system – GYSEV Zrt, the passenger railway operator in the Western-Transdanubia region, will upgrade its current passenger information system in order to provide static and dynamic information in three different languages: Hungarian, German and English. According to the project description of the Connect2CE the NUTS 2 location is Western Transdanubia; the NUTS3 location of the pilot action is Győr-Moson-Sopron county – GYSEV is a Sopron headquartered company – but the services of the action will be available in Western Hungary, thus in Vas county, and Burgenland regions affected by GYSEV lines, on rail vehicles and at stations operated by GYSEV.

Geography

Seven Hungarian planning and statistical regions were worked out in 1999 and 2003 which mean the second level (NUTS 2) of the NUTS. The NUTS 1 region of Transdanubia consists of three NUTS 2 regions include: Central-, South-, and Western Transdanubia. The Western Transdanubia region is formed by three NUTS3 regions: Győr-Moson-Sopron, Vas and Zala counties, and borders four countries: Slovakia, Austria, Slovenia, and Croatia.

The NUTS2 and NUTS3 Regions of Hungary



Source: Krisztina Varró & László Faragó: The Politics of Spatial Policy and Governance in Post-1990 Hungary: The Interplay Between European and National Discourses of Space (European Planning Studies, Vol. 24, No. 1,, p. 46; 29 Jul 2015)

The Western Transdanubia regions covering a total 11.328 km2 (of which 4.208 km2 of Győr-Moson-Sopron; 3,336 km2 of Vas), the region represents the 12,2% (GY-M-S: 4,5%; Vas: 3,6%) of Hungary's land area, making the third smallest NUTS 2 region of the country. The Western Transdanubian region consists of 657 municipalities in 20 administrative districts (járás), of which only 35 (in 2014) are towns or cities.

The Terrain Map of Vas County

Source: Cartographia Ltd.

Vas county is located in the most western part of Hungary and has a diverse landscape: mountains, hilly and plain areas – which are the majority of its territory – can be found there. The main mesoregions of Vas are: Alpokalja mountains in the western edge; Zalai dombság in the south area which is part of the Transdanubian Hills; and the three mesoregions of Kisalföld plain in the center and north part of the county: Kemeneshát, Sopron-Vasi plain and Marcal-basin. The county shares borders with Burgenland (Austria) and Slovenia and the Hungarian counties Győr-Moson-Sopron, Veszprém and Zala.

- **Description of main geographical features with focus to project activities:**

- **Allocation of main urbanised settlements and industrial areas (main commuting origin/destination points),**

Economy

In 2012 Western Transdanubia contributed 10,1% to the Gross Domestic Product of Hungary, which was the second highest share after Central Hungary (including Budapest) with 48,3%. The GDP of Vas produced nearly 2,5 billion Euros added value in 2013. The GDP per capita (on PPS) exceeded 21.510 Euros in Western Transdanubia region in 2015 which was 109% of the countries average. Vas had a poorer economic performance in that year with 19.051 Euros which was only the 97% of the country average. In the past 15 years the GDP per capita ratio of Vas only reached occasionally the countries average. It can be noted that the economy and financial crisis of 2008 seriously hit the economy of the county and the WT region too.

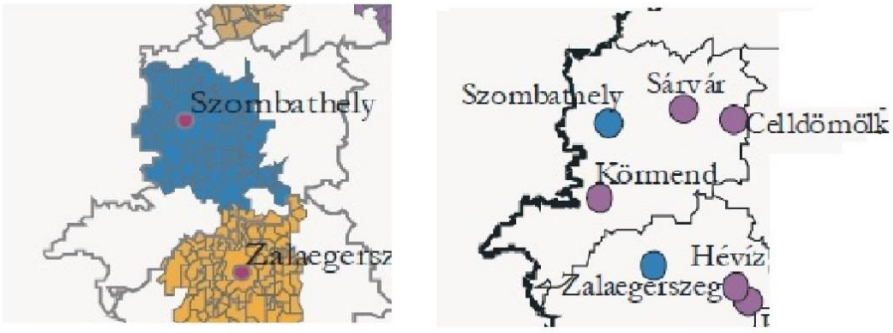
The regional economy of Vas based dominantly on the secondary (47,7% with manufacturing) and tertiary (46,3% with commerce and transport & storage, medical tourism) sectors. The primary sector (agriculture, forestry and fishing) takes 6% share. The economy of Vas have taken advantages of the favourable geographical location, the developed infrastructure, the skilled labour force, the industrial parks and the dual structure of the economy: next to the TNCs (invested mainly in machinery, textile, wine, food, chemical and wood industries) the 18.000 SMEs play an important role in the county's vital and competitive export-import intensive economy.

Destination points

According to the 2011 Census carried out by the KSH in Hungary 1,34 million employees commute daily: of which 16% commutes to Budapest; 25% share works in the 23 towns with county rights (mainly seat of the county), and the 60% remaining part professional travels to 44 towns with more than 2.000 daily incoming workers.

In Vas county there are four commuting centres – absorb basically domestic commuters only: *Szombathely, Sárvár, Körmend,* and *Celldömölk* hosting industries like manufacturing, wholesale and retail trade and transportation and storage. Szombathely plays a very important role in the employment of its commuting-intensive agglomeration, nearly 50% of the employees work in the seat of Vas. The average distance between Szombathely and the settlements in its agglomeration zone is 14,4 km, nearly the shortest centre-agglomeration settlement distance of the country.

The Agglomeration Zone of Szombathely and the Four Commuting Centres of Vas County



Source: Hungarian Central Statistical Office 2016.

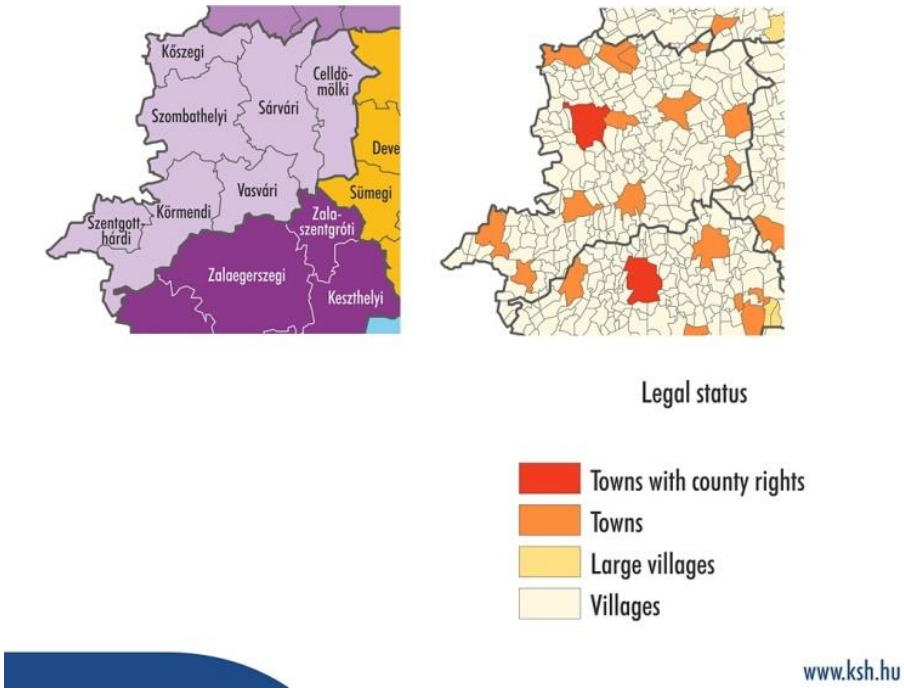
The KSH survey noted that 2% of the daily Hungarian commuters (approx. 27.000 employees) work abroad, most of them (22.000 workers) in Austria.

Settlement structure - commuting origin

Vas county has 216 settlements in 7 districts of which 13 are towns and 203 are villages. Its seat is Szombathely – with the population of 78.000 – 240 km from the Capital Budapest, 180 km form Ljubljana, about 150 km from Vienna, Bratislava and Zagreb, and 130 km from Graz. The major towns in Vas are Kőszeg, Sárvár, Celldömölk, Körmend, Szentgotthárd, Vasvár, Csepreg, and Répcelak. Only four towns have the population more than 10.000 inhabitants: Sárvár, Kőszeg, Körmend and Celldömölk.

Vas county has a small-villages-dominated settlement structure: more than 60% of settlements (132 municipalities) are small villages with population less than 500 inhabitants (aprófalu). Thus the settlement network of the county is very fragmented: the high number – 6,5 – of the settlement per 100 km^2 is nearly twice of the country average – 3,4 / 100 km2. In Vas the 61,5% urbanisation rate is below the 'country approx. 70% average', furthermore the rate shows uneven split: for example Szombathely district has 70% rate and Őrség area (Szentgotthárd and Körmend districts) has 18%.

Districts and the Settlements Structure of Vas County



Source: Hungarian Central Statistical Office 2016.

The smaller settlements of the western part of Vas are better situated than the villages of the east and the south. The people of these villages having unfavourable age-structure, income, and labour-market circumstances where the last factor forces the 75% of the inhabitants to professional commute.

- **description of main touristic points and other relevant points of interest.**

According to the data of the 'Tourism in Hungary 2016' study approx. 11% of the total arrivals and the total guest nights were realized and spent in the Western Transdanubian tourist region – that means 1,15 million arrivals and more than 3 million guest nights regionally. The 3 million nights split nearly equally between the domestic and the international tourism segments.

Considering to the particular geographical and geothermal conditions of Vas county the main tourism segments are: medical tourism (Bük/Bükfürdő; Sárvár, Szombathely) for spa (hot springs) and dentist, hiking tourism (Kőszeg Hills, Őrség area) and fishing tourism. In 2014 1.37 million guest nights at the commercial units were registered in Vas county with 53,3% international tourism share. On the most

visited Hungarian settlement TOP10 list of 2016 two destinations from Vas county can be found – because of the medical tourism – Sárvár (701.000 nights) and Bük (485.000 nights). The main origins of the local county tourisms are: the Czech Republic (251.000 nights), Austria (209.000 nights) and Germany (156.000 nights).

Recent population and demographic trends

With 983.251 inhabitants, the Western Transdanubian region is the second less populous region of Hungary. Its population – after a short growing period (till 2006) and a permanent decreasing trend – actually has been stagnating since 2000 – when it was 984.151. The dynamics of the decreasing is slower than the country average, so the share of the region's population has grown to 10,4% from 9,8% of 2000.

Vas county has an unfavourable situation: the number of the inhabitants has been decreasing continuously since 2000 (266.411 capita) by approx. 5% reaching 253.109 capita in 2017. The measure of the decreasing has followed the country average: the 2,7% share of 2000 shrunk to 2,6% of 2016 so the relative population position of Vas has unchanged.

According to the KSH vital statistics the decline in population of Vas has been caused by the high number of death, which exceeded the number of live births by 4 per 1000 inhabitants in 2015. The positive effect of the domestic migration (1,5 per 1000 inh. in 2015) is unable to compensate the decreasing trend. (The domestic migration balance of Vas can be seen below).

Domestic Migration Balance of Vas County (capita, 2013-2016)

	2013	2014	2015	2016
Emigration	11 028	12 236	13 009	13 488
Imigration	11 529	12 935	13 847	14 380
Balance	501	699	838	892

Source: Hungarian Central Statistical Office, 2017

The population density of Vas county is relatively low, 77 inhabitants per km2 compared to both the country average (107 inhabitants per km^2) and Western Transdanubia (88 inhabitants per km^2).

Transport network and accessibility conditions

- Interurban and regional transport road and railway transport network with possible connections to transnational networks;

Vas County (NUTS3) transport network can be characterised with a cross-roads of the two main traffic direction (East-West) and North-South (also known as Amber road or Baltic-Adriatic Corridor) or SETA (South-East-Transport-Axis).

Figure 1 Seta Corridor Source: Grenzbahn project http://www.b-mobil.info/hu/projektek/projekte-grenzbahn

Since 2016 the road networks counts with a motorway section on M86 which allows the centre of the county (Szombathely) to be linked to the international motorway network. At the same time the busiest and most problematic section of the old main no 86. experienced a significant traffic calming due to the shift of traffic to the newly built motorway. Motorway M86 also reduces the traffic intensity on road the traditional main road no. 8. as the fastest journey to Styria from Central goes via M86 and not main road no. 8. The other main traffic corridor is the main road no. 84 which from Sopron and Austria crosses Vas county's Central Eastern part with lake Balaton area.

Vas County's railway network has been upgraded significantly with nearly all important lines are electrified now since GYSEV is operating all of them from 2011. All lines are single track with the exception of 2 short sections at Celldömölk-Boba at the Eastern edge of the County and between Poprác-Szombathely where two important lines are jointly running. The main line 16. is part of the Baltic-Adriatic corridor as a part of the new "Amber" Rail Freight Corridor (RFC) no. 11. It is also the main routes for intercity trains between Budapest/Győr and Szombathely. The other main route for rapid trains via Celldömölk towards Székesfehérvár. Since 2001 the corridor between Sopron-Szombathely-Szentgotthárd has been upgraded and plays an important role in regional transport with upgraded multimodal stations. The rural border area around Szentgotthárd at the Austrian-Slovenia-Hungarian tri- border will be the case of one of the pilot activities in WPT2. The busy suburban branch line to Kőszeg from Szombathely is planned to be modernised thus it will serves as a pilot area in WPT2. The main connection towards the South Zala County and Slovenia via Hodos and to Croatia via Nagykanizsa and Murakeresztúr/Gyékényes is also partly electrified but it is planned to be fully electrified with a new bypass track towards Slovenia at Zalaszentiván junction.

Some previously closed branch lines are planned to be rebuilt on mid-term between Szombathely and Oberwart in Burgenland (Austria) and between Zalalövő and Körmend. In case of the cross-border Szombathely-Oberwart connection there are plans to be built as a tram-train within Szombathely as one EU project (Grenzbahn) has pointed out.

As of 2016 the total length of railway lines in Vas County is 282 kms.

Logistic activities are concentrated around Szombathely which is the most significant transport hub of Vas County. Concerning airport there is only a small airport nearby which is used only for leisure purposes with small aircrafts. The joint development is planned for a long-time with the nearby industry park but no action has been taken so far. The nearest airport in the region are located in Győr-Moson-Sopron County (GYMS) and the larger ones in Austria (Vienna and Graz).

Figure 2. Rail freight flows around Vas County in 2015 Figure: Road freight flows around Vas County in 2015 Sources: Grenzbahn

Figure 3. GYSEV Railway network in Western Hungary

-Main passenger intermodal points and cross border sections

The average level of motorisation is higher and sharply increasing in Vas County (385 per 1000 inhabitants in 2016) then Hungary's average value 325 per 1000 inhabitants in 2016.

The average speed for buses is around 40 km/hours due to the small settlement structure. For railways 60-70 km/hour is the average speed for regional services while 80-90 km/hour for fast/Inter City train services. Top speed on some sections of the railway lines is 120 km/hours but usually 80-100 km/hours is allowed on most sections but this is still better than the full Hungarian average rail speed which includes many secondary lines in bad condition.

The current modal split in domestic transport is the following 27% Bus, 11% Rail, 56% Car, 5% Bicycle. However in cross-border transport from Vas county bus has under 1 % share and rail is also around 1-2 %

since there is only one smaller traffic border crossing for rail at Szentgotthárd which is served by 14 pairs of trains on a workday as of 2017. The rest of the cross-border trips are realised by car and 1-2 % by bike.

The share of cross-border commuters (from all commuters) in Vas County was around 10 % compared to 2,1 % value of Hungary. Roughly 80 % of them is commuting up to one hour in cross-border commuting. In average 71 % commutes maximum 1 hour in Hungary while the average commuting time was around 28 minutes in 2011. In Vas County 43,5 % of the local residents is commuting which is slightly more than the 34 % of Hungary's average value.

The main bottlenecks are the not good enough connected bus and rail services in most cases and the needed for demand responsive transport systems. The growing number of private car usage is an issue in several settlements which are suffering from transit traffic. Several junctions on the outskirts of Szombathely are facing with increasing traffic jams in peak-hours.

Organisation of transport sector and key stakeholders

Local public transport at municipality level is either directly awarded to transport operators or competitively tendered, in accordance with Regulation EC 1370/2007. Local public transport services within one settlement or municipality are financed by the local government. Local public transport is operated by ÉNYKK in 2 cities of Vas County of which Körmend's network is very basic with around 8 departures per workday while Szombathely's local bus network is rather important in the city. Till 1974 a tram line was also in use in Szombathely.

The national law which regulates the passenger transport is the no. XLI law of 2012 about Passenger Transport Service. In Hungary there is a centralised system for all regional, national or long-distance scheduled bus or passenger rail services which means that the Central Government's Ministry of National Development orders and finances the services from the mostly state-owned regional bus provider ÉNYKK and from the regional rail operator company GYSEV. Fast train and some regional passenger rail services towards Celldömölk are run by MÁV-START Hungary's main incumbent state-owned passenger rail operator company.

In the Ministry there are 13 colleagues dealing with all domestic Public Service Obligation (PSO) services. Further 30 colleagues in KTI Passenger Directorate (KTI SZI) is dealing with domestic services. In a branch office in Szombathely there are 5 colleagues of which are 3 experts for coordinative tasks between local governments, service providers in Western Hungary (Vas County and 3 more counties) and the ministry who fully owns KTI.

Coordination with Austrian partners for rail services is regular with GYSEV which is a mixed Hungarian-Austrian mostly public owned regional rail company.

2. Territorial needs assessment

Connectivity

Cross-border transport flows

Following the Eastern enlargement of the EU in 2004 the mainly-economic-reasoned migration boosted from the new EU-10 countries to the EU-15 countries although their labour markets were partly liberalised until 2011. Its form is varying from permanent (resident) to temporary (relocation or daily commute).

The Austrian-Hungarian border regions commuting originates on a 'weakened historical tie' based special institutional arrangements of the 1990's, where the administrative requirements of the Hungarian employees were lightened on mutual interests. At the Millennium according to some rough estimation 12.000-15.000 cross-border commuters from the border region worked in Burgenland. Since 2008 the number of the Hungarian emigrants has been rising significantly because of the negative effects of the economic and financial crisis of 2008 and the fully liberalisation of the EU labour market of 2011. Due to those changes the total number of the daily commuters nowadays has reached from 22.000 (from state administration) to 30.000-40.000 (from academia) - to Austria.

In the research phase two travel surveys were found, describing the cross-border transport and commuter flows at the Western Transdanubia-Burgenland border: the KSH study based on the 2011 Census and the analysis of the EMAH Project based on the cross-border traffic counting of May and July of 2013.

In the EMAH Project the travel counting and s questioning was carried out in May & July of 2013 at the Austrian-Hungarian border (5 rail border crossings and 7 road board stations between Burgenland and Győr-Moson-Sopron; Vas). The modal split of the cross-border transport shows a dominant car using travel habit (approx. 93%) and rail transport share of 7% - basically with 0% bus ratio. This split quite differs from the country average passenger transport split where car 'only' has 56%, rail takes 11%, and travelling with bus hit 27% share next to the 5% ratio of the bicycle.

More than half (52%) of the cross-border trips was a professional travel; buying and visiting relatives & friends purposes have 11-11% share. 9% potion of the total journey connected to tourism and leisure. 6% ratio was administration or healthcare-related, and 4 % ratio was school-related.

It should be noted that the EMAH Project did not examine the origins of the commuters so the results of the survey are rather a country average than Western Transdanubia specific although 75,9% of the total daily commuters to Austria come from Vas and Győr-Moson-Sopron counties – see below.

Origin of the daily cross-border commuters by county (2011, Census)

County	daily cross-border commuters to daily total commuters in the county	of which: daily cross-border commuters to AT to the daily cross-border commuters in the county	daily cross-border commuters to AT of the county to daily total cross-border commuters to AT
Győr-Moson-Sopron	16,3%	91,0%	54,5%
Komárom-	0,8%	62,2%	1,3%

Esztergom			
Vas	10,0%	99,1%	21,4%
Zala	2,2%	88,3%	4,0%
Veszprém	1,1%	91,7%	2,8%
Tolna	0,8%	91,7%	1,0%
Somogy	0,8%	89,2%	1,2%
Baranya	0,9%	83,0%	1,5%
Fejér	0,5%	77,9%	1,3%
Budapest	1,8%	55,5%	3,5%
Pest	0,3%	60,0%	2,5%
			95,0%

Source: Hungarian Central Statistical Office, 2015

Commuter's flows

According to the upper Hungarian Central Statistical Office (KSH) table approx. 55% (12.252 capita) of the commuters to Austria come from Győr-Moson-Sopron county, 21,4% (4.855 capita) of them journey daily from Vas county. Around 76,4-81,6% of the employees of Vas and Győr-Moson-Sopron) travel less than 1 hour – the country cross-border average is 73%; 19-9-16,3% share spends 1-2 hours reaching his/her workplace. A very few percent commute more than 2 hours to the other side of Austria.

The data of the KSH study confirm the existing assumptions: most of the cross-border commuter of Vas and Győr-Moson-Sopron to Austria comes from the skilled workers with secondary qualifications and employees with passed final examination at secondary level groups – 79-85% portion. The majority of the commuters work in 'traditional' sectors like agriculture; industry; construction; accommodation and food service activities; and 'newly added' branches like human health and social work activities. The 'younger-movable' (15-44 years) generations are over-represented in the total with 74% (Győr-Moson-Sopron)-79% (Vas).

The results of Census 2011 and the EMAH Project show a little bit different pictures about the split of the commuters by profession (industries) – the reason could be a sampling issue. According to the KSH the workers employed in the agriculture takes 7,1% share while in EMAH Project it did 11% - both are far higher than the country commuter average of 3,7%. The Census 2011 measured 31,1% portions on industry and construction, EMAH Project did 38% - the country commuter average is 38,4%. Thus there is an approx. 7% digression between the two surveys: the KSH data assessed 58% of the cross-border commuters from the tertiary economy while the EMAH Project did it 51%.

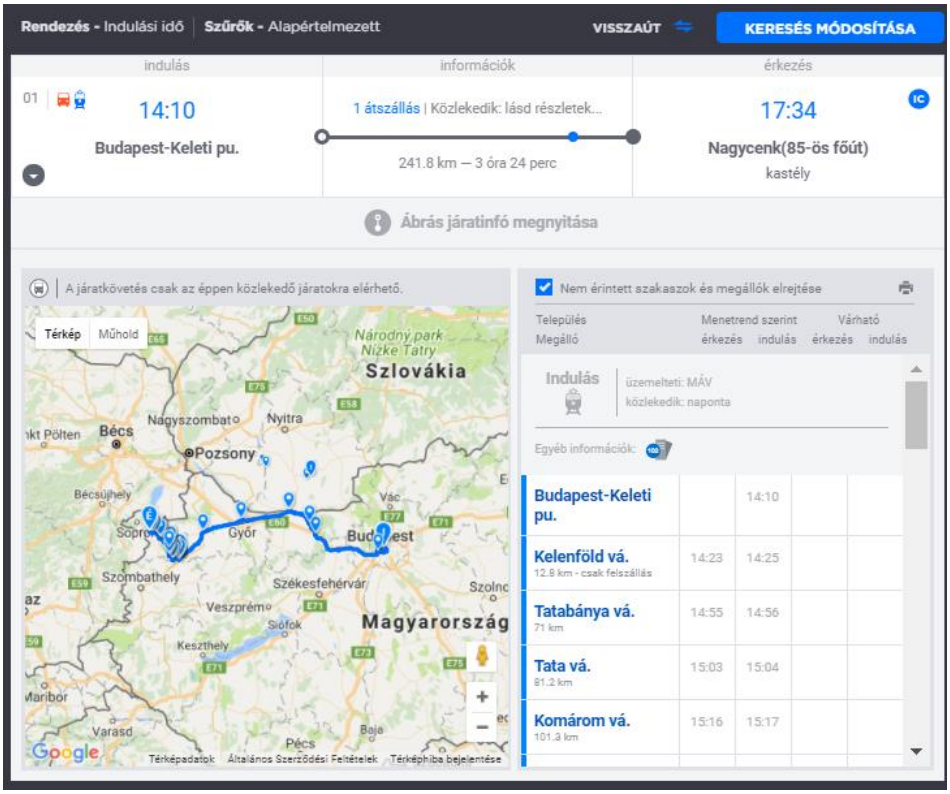
Infomobility systems

In the field of Hungarian infomobility systems, inter-urban and long distance bus timetables as well as regional and long-distance railway timetables are available countrywide. Each undertaker also operates its own schedule database, linking to the common database at national level. However, urban traffic information (city bus, tram, metro, etc.) is only published by the provider. Those databases content only the timetables of each cities (e.g. Budapest, BKK), but there is also a combined city-specific searcher for various cities covering a whole region (e.g. ÉNYKK). The mode of data access (static / dynamic) depends on the undertaker.

2.0.1. General characters

In order to a simpler modal split, a new system (menetrendek.hu) was established in 2016. This manages the entire Hungarian regional and national timetable database unified which can simplify the navigation between the more than 3150 settlements in Hungary.

There are detailed timetables, stops and map locations for each mode (bus and rail) available on the result site and the walking directions and distances between each stops are listed as well.



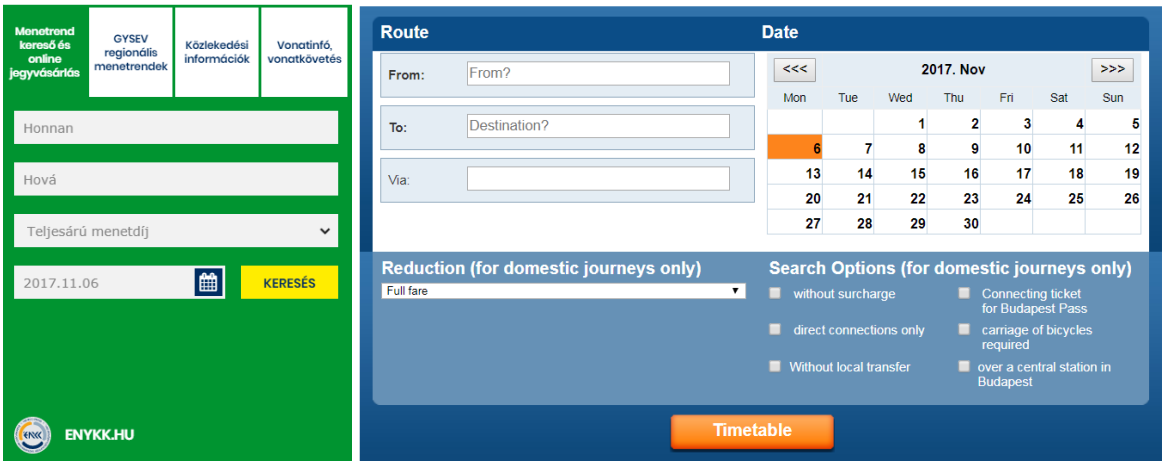
Railway timetables are published on the own website of the two Hungarian passenger transport companies (MÁV-START Zrt., GYSEV Zrt.) also. Here are such information available as 1st class coaches, bicycle transport facilities, dining car etc.), and fares (e.g. InterCity supplement and various other discounts) as well. As for menetrendek.hu intermodal connection information is now reliable and urban public transport transfer is under development. Possible multi-modal ticket emitting feature is also planned. Monthly visitors number exceeds 1,5 million as of September 2017 which is 3 times more than in 2015 when it provided only bus timetable data on an outdated website. Timetable adjustments and database update is carried out nearly daily.

Systems are funded under the PSO.

2.0.2. Pre-trip specifications

Before the trip, at each stations can be accessed a paper-based guide on the timetable for the given line and personal information on the main stations and transport hubs. Timetables are both manually and electronically available one month before the date of validity, and 15 days in the case of mid-year changes in advance.

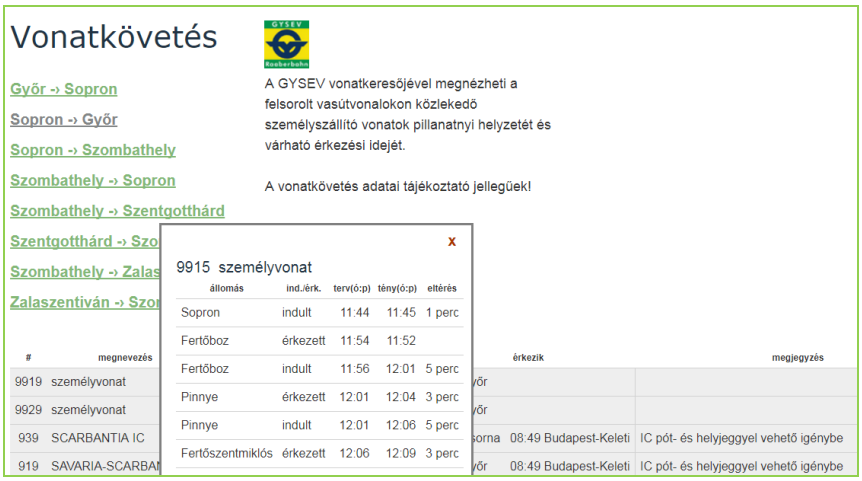
Temporary service changes may be reached within 15 days before the entry into force. During that period, dynamic search interfaces result the modified time data automatically.



The ELVIRA database (owned by the Hungarian State railway, MÁV) contents the full range of Hungarian domestic trains and partly the international trains, too. The system is both in English and German languages available. The search interface is also submitted directly from GYSEV's website.

2.0.3. On-trip specifications

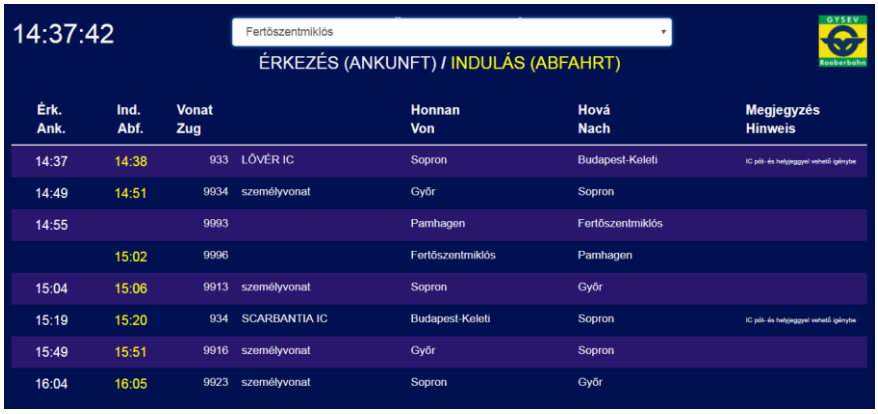
The “GYSEV Vonatkövetés” (train follower) site can let the passengers know the current position and estimated time of arrival of passenger trains running on the lines listed below.

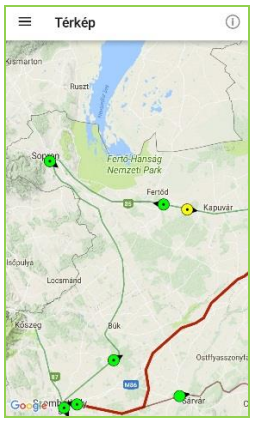


The current timetable of domestic and international trains departing from/arriving to Hungary can be accessed nationwide through the “Vonatinfó” (Train Info) site which is also available as a mobile application. The Google Maps-based interface of the application also includes the exact location of each passenger train running in Hungary, including the network of GYSEV Zrt.

Since October 2016 General Transit Feed Specification (GTFS) data is available free of charge for app developers and other travel planners.

Departure and arrival data for each railway station is also available both as HTML and as mobile format and includes real-time information for each train.





On-board passenger information monitors (FEDUR) on the InterCity coaches and motor units, developed by GYSEV, display the current and the estimated departure and arrival datas of a train, and show the current position of the vehicle as well. The OpenStreetMap-based map can be used to determine the location of the vehicle by GPS and also to calculate the difference between actual and expected time schedules.

2.0.4. Features of ITS in the ticketing system

Linked to the timetabling records, it is possible to purchase tickets on-line. All domestic tickets and supplements as well as some international tickets can be bought online on ELVIRA system.

Depending on the type, tickets can be distributed as follows:

- Presented on a mobile phone / laptop with QR codes
- Printed at home with QR codes
- Printed from a ticket kiosk at certain railway stations

Online tickets can also sold for the lines of GYSEV Zrt. The revenues are accounted according to the general model applied by both railway companies.

There is a discount of 3% is available for tickets printed at home and presented on a mobile device, regardless of its category.

An easy-to-use new version of Vonatinfo App is under public testing as of November 2017 and will enable to buy tickets by smartphones much easier than the current online ticket sale portal on ELVIRA.

Integrated ticketing and tariff schemes

This section focuses on 'state of the art' analysis of Multimodal integrated tariff and ticketing schemes (ITTS) that are currently in operation in CE countries. The main aim is to collect data on current situation and on gaps forming a status report.

Organisational and financial framework and the public passenger transport of the selected region;

GYSEV is owned by the Hungarian State (65,7%), the Austrian State (28,2%) and the Strabag SE (6,1%).

The costs of the operation are financed by the Hungarian State in Hungary and by the Austrian State in Austria.

categorization of the ticketing mediums and ticketing products per transport mode - or per transport operators if needed;

There are paper tickets issued at the cashier desks / on board or printed at home.

Ticketing products:

one-way tickets (valid on the day of its issue under 100 km, valid for 2 days between 101-200 km, valid for 3 days between 201- 400 km, valid for 4 days up to 400 km)

retour tickets (valid for 15 days)

season tickets valid for 30 days / half month / 1 month)

combined tickets including the use of the regional / local trains and busses and further services (f.e. admission tickets, programs)

description of the tariff system;

The tariffs are determined by the Hungarian State in Hungary and by the Austrian State in Austria.

There is a zona-tariff system for journeys under 500 km in use with the minimum of 5 km to be paid. The zonas are rising per 5 km under 50 km, per 10 km under 100 km, per 20 km under 300 km and per 50 km under 500 km. For journeys up to 500 km there is a fixed tariff to be paid.

There are discounts provided by the state (welfare/social discounts) and ones provided by the company (business discounts).

The welfare discounts of 20 – 100% are available for disables / big families / children / students / pensioners / public servants. EU and EFTA citizens above 65 years of age travel for free on second class within Hungary with their national IDs.

The business discounts are provided occasionally by the train company for groups / for special events / for defined period of times / defined products or selling channel)

Technical features, marketing (sales channels) of the ticketing system;

GYSEV has no integrated ticketing system on its own. GYSEV has cash registers with single memory units at the bigger stations issuing paper tickets. Tickets on board are issued by hand. The online selling channel of the Hungarian Railway Company (MÁV – START) are also available for our passengers.

Short analysis of the integrated tariff and ticket system of the selected region – if it is available (main trains, level of integration, financial-technical implementation).

No integrated tariff system is available generally but there are combined daily and season tickets including 3 kinds of transportation services provided by the GYSEV (train) and the ÉNYKK (bus). These products integrate the single tariffs of the different vehicles of transport.

No real integrated ticketing system is operated by GYSEV.

The legal and constitutional conditions of the integration is missing. The owner's intention to the integration has been signified already, but the plan of action for the implementation has to be worked out.

Main features would be integrated:

- timetables of trains and buses
- travel information system of trains and buses
- ticketing system of trains and buses

Common efficient and reliable long-term economic background of the operation would be needed to re-adjust income-losses of certain operators. For instance when some busy bus lines will be shifted to the parallel upgraded railway than bus operator will face less revenue on its less used routes and limited feeder services.

3. SWOT analysis

Strengths	Weaknesses
• Favourable location at the Austrian border • Better conditions of the infrastructure than national average • Ongoing integrated tariff pilots (unique in Hungary) • Flexible local operator companies	• high settlement per 100 km^2 value: fragmented small-villages-dominated settlement network; • low population density; • high share of the professions like construction among the cross-border commuters;
Opportunities	**Threats**
• Commuting-intensive agglomeration zone of Szombathely and centres – best and integrated practices from the	• Sign of the self-organized car-pooling among the cross-border commuters;

domestic commuting road passenger transport; • Fully integrated cross-border tariff system • Timetable harmonisation between modes and with cross-border connections	• high value of the number of passenger cars per 1000 inhabitants; • Not strong enough political support for integrated ticketing and introduction of new cross-border PT services

4. Overall conclusion

According to the facts and results stated in the Overview and 2.1. TNA phase, it can be said that planning a more effective cross-border public transport system in Vas county is difficult for some reasons.

As it was mentioned earlier the county has a fragmented small-villages-dominated settlement network with low population density, which practically means the hardness of reaching efficiently the cross-border commuters of the small villages with the population less than 500 – especially in the eastern and southern area of the county. Assuming an effective domestic commuting road passenger transport due to the commuting-intensive agglomeration zones of the seat (Szombathely) and the towns of Vas, that could be a valid opportunity to introduce and implement best and integrated practices of that domestic PT system into the cross-border commuting public transport.

During the EMAH Project some signs of the self-organized car-pooling were detected – the average commuting car usage was 1,7 capita per car. There are three factors with together a spreading self-organized car-pooling system could be a threat in the future:

- The high share of the typical 'non-suitable public transport' professions – like the seasonal agriculture workers, construction brigades, etc. – among the cross-border commuters which generate car using.
- The high value of the number of passenger cars per 1000 inhabitants in Vas which is 114% (385 cars per 1000 capita) of the country average.
- The slow process of tariff integration makes PT offers less competitive to private car usage
- The need for timetable harmonisation is crucial as the current parallel services are not efficient enough and there is only a very limited bus service across the border which should be more at Kőszeg and Szentgotthárd pilot areas