



## **Workshop urban node Budapest**

### **Summary report on outcomes and conclusions (draft)**

**Thursday 3 May 2018**

**BKK**

**19-21 Rumbach, Sebestyén utca, Budapest, Hungary H-1075**

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# 1 Introduction

On Thursday 3 May 2018 the Vital Nodes workshop in the urban node Budapest took place as part of the Coordination and Support action (CSA) Vital Nodes ([www.vitalnodes.eu](http://www.vitalnodes.eu)). Executed under the European Commission's Horizon 2020 programme. About 20 professionals in the field of freight and logistics, infrastructure planning and spatial planning gathered to discuss the challenges and opportunities for the urban node Budapest in relation to the city initiatives and the European TEN-T corridors. Local partner BKK Centre for BudapestTransport hosted the workshop.

## 1.1 Goals of the Vital Nodes project

This workshop is part of the first series of 8 urban node workshops that take place in 2018. The workshops all contribute to the main goals of the Vital Nodes project:

- Deliver evidence-based recommendations for effective and sustainable integration of the nodes into the TEN-T network corridors, addressing specifically the multi-and intermodal connection between long-distance and last-mile freight logistics. Addressing funding needs (for infrastructure and spatial developments), updating and redefining guidelines for infrastructure investments and funding instruments on European infrastructure.

While focussing on integrating long-distance freight and last-mile delivery improving the performance of the urban nodes throughout the entire TEN-T network. It will also support the deployment innovations in the urban nodes, while establishing a long-lasting European expert network. Enabling efficient, sustainable freight delivery across the TEN-T urban nodes (metropolitan areas), by bringing together existing European, national and regional networks of experts and professionals.

## 1.2 Goals of the Vital Nodes workshop Budapest

In order to address the right challenges and formulate most efficient recommendations, the workshop in urban node Budapest aims to:

- Come to a common agreement on fingerprint Budapest (typology, position of the urban node Budapest / facts and figures of the node);
- Come to common agreement on key challenges;
- Deepen the understanding of the challenges;
- Explore solutions for the challenges;
- Change the mind-set: thinking on different scales (cross-border/TEN-T corridor, regional/functional area level, local/city level) and dimension, adaptively: balancing choices between short term actions and long term objectives;
- Suggest on good practices from Budapest.

Moderator Joep de Roo (Eurodite) guided the participants through the workshop during which specific challenges, drivers, (implementation) barriers and possible solutions/good practices have been discussed. This discussion has been linked to the role of the urban node Budapest on the TEN-T corridor and future needs according to this. The identified challenges, solutions and good practices are collected within the Vital Nodes project. They will be input for other urban node workshops and all together form input for recommendation to the European commission.

### 1.3 Outcomes

During the workshop in the urban node Budapest good discussions took place and exchange of knowledge and first good practices were shared - as were discovered to be in place in Budapest and brought in by the presentation on experiences in earlier Vital Nodes workshops.

Via short pitches, perspectives from different stakeholders and geographical levels were shared after which key challenges were addressed in plenary discussions:

- The need to reserve space for future use (e.g. sustainable logistics);
- Road and rail bottlenecks in the city;
- Lack of (open) data to monitor policy changes in mobility and logistics;
- Adaptability in policy changes and innovations.

Take-aways/lessons learned are among others:

- The awareness of the urban node function;
- Possibilities and impossibilities of micro and midi hubs in the city;
- Vulnerability of the network in and around the urban node Budapest;
- Interconnection between infrastructure networks.

### 1.4 Follow-up

#### Validation

Following the outcomes of the workshop the challenges and the (impact of) solutions need to be validated by the stakeholders related to the specific urban node.

#### First recommendations to the European Commission

Based on the outcomes of this Vital Nodes workshop in Budapest and the 8 other workshop in other urban nodes as part of the first phase of the project, First recommendations to the European Commission will be drafted this autumn.

#### Second phase of the Vital Nodes project

In autumn of 2018 the second phase of the Vital Nodes project will start, deepening the challenges in urban nodes and aiming for further deployment of possible solutions. This phase will be formed by thematic oriented sessions with a growing amount of nodes involved.

### **Expert pool**

Currently an expert pool is in development by the Vital Nodes consortium. Goal of the expert pool is to bring together knowledge from different fields of expertise, related to the development of urban nodes and the combination between long distance freight and last mile delivery and stimulate knowledge exchange between different urban nodes throughout Europe

### **Knowledge exchange and updates**

Via the Vital nodes website ([vitalnodes.eu](http://vitalnodes.eu)) and the Vital Nodes newsletter, outcomes and updates on the Vital Nodes project are shared regularly.

### **Policy dialogue**

Besides a policy dialogue is being planned for autumn in which a discussion between the urban nodes and the European Commission is facilitated according to the themes of the Vital Nodes project.

## 2 Fingerprint Budapest

To get a clear understanding on the status of an urban node a so-called 'fingerprint' is developed, including characteristics of the node based on facts and figures (secondary data and stakeholder input) and resulting in key challenges of the urban node Budapest. This fingerprint is used as a starting point of the workshop discussion (see the appendix, attachment 1)..

### 2.1 Some characteristics of the urban node Budapest

From the Vital Nodes project team a presentation is given on the Fingerprint of the urban node Budapest. A short analysis based on facts and figures and developments in city and region.

#### 2.1.1 Local level

Budapest is among the ten biggest cities in the EU based on population, importance as a leisure destination and as an economic hub (Alpha- world city). The city has 1,7 million inhabitants and is one of the biggest Urban Nodes in the EU. The metropolitan region is estimated to count around 3 million inhabitants. This creates challenges from an urban mobility point of view but also because of the big 'construction boom' in the city.

Besides, Budapest is a major hub for East-West oriented logistics. In fact Hungary acts as a turning point, according to for instance Dutch logistics companies. Capacity of the Budapest railway node is a challenge (CEF funded study).

Important planning instrument is the Bálázs Mór Plan 2014-2030 (BMT plan) linking economic growth and vitality, see [http://www.sump-challenges.eu/sites/www.sump-challenges.eu/files/bmt2016\\_eng\\_v3.pdf](http://www.sump-challenges.eu/sites/www.sump-challenges.eu/files/bmt2016_eng_v3.pdf)

#### 2.1.2 Regional level (functional urban area)

There is an increasing number of intermodal rail freight shuttles e.g. to Germany or to the Port of Koper on the Adriatic sea. The BMT plan calls for more waterborne transport of freight within the city region. In general terms a strong growth in wages and general economic growth has major influence on mobility (congestion, safety) and freight volumes.

#### 2.1.3 Corridor level

Budapest is situated on three TEN-T Corridors (Mediterranean, Orient-East Med and Rhine-Danube corridor) and is an important rail hub for passengers and freight (e.g. from Budapest to Beograd) whereas Budapest has strong links with Vienna and Bratislava but accessibility from the west is a challenge as the M1 motorway is quite congested. Completion of the ring road (M0) is an issue, as traffic has to cross the western city districts.

The Danube is important for inland waterway transport although the potential of navigation on the Danube is not fully used at this point in time.

### 3 Discussion on challenges in Budapest

In two smaller groups, stakeholders at the workshop give an overview of different challenges in the city, related to accessibility, safety, economy, vitality and connectivity.

- The lack of a real time information system for better organizing freight transport;
- The low rate of environmentally friendly transportation vehicles in the total fleet;
- Lack of harmonization of transportation needs. There are no (institutional) integrators. The sectoral approach is dominant;
- The low number and lack of efficiency of promotion campaigns to stimulate environmentally friendly technologies and vehicles;
- Restrictive legislation (not supportive for new/ innovative developments);
- Difficulty to forge partnerships and access of funds.



#### **Accessibility**

- Congested road (M1) to Vienna and Bratislava (low capacity and bad shape).
- Completion of M0 ring road in the northwest. Difficult, also due to many small owners/ fragmentation
- Major transit corridors in the city are congested during peak and off-peak hours.
- E-mobility developments are only focused on charging infrastructure.
- Freight trains are running late due to capacity issues and regulations.
- Need for intermodal connections, bike + train and walking, especially for leisure activities in the area around the capital.
- Accessibility is an issue in the city center and when getting into the city. Two different challenges, both dealing with accessibility. In these situations capacity growth causes the growth of car movements as well.
- Budapest Airport: lacking good public transport connection to the city (no access to the metro network) nor to the surrounding city region. This is important for employees and passengers. Besides the airport is not well accessible by bike.
- Connect housing developments with metro, tram and bike routes.
- Lack of "white labelled" urban (micro) consolidation centers.
- Bottleneck of the Southern rail bridge, capacity problems with passenger trains vs. freight trains, long-distance and regional trains. This Southern rail bridge is the only crossing possibility for rail freight over the Danube
- Rail connection to the port does not have enough capacity
- Operational problems with rail freight
- Peak hour problems: peak hour freight traffic ruling (area and time), peak hour freight traffic checking (penalties), peak hour travelers in public transportation.





### **Safety**

- Traffic safety and cohabitation of space: Challenge is how to cope with cargo bikes in the city center and especially in mixed areas with pedestrians or when leisure cyclists conflict with hurried bike couriers. Besides several bike lanes suddenly come to an end, this leads to confusion among cyclists.
- Risk for using cargo bikes, bikes are bigger than normal bikes and can therefore be more dangerous: There are no regulations for brakes nor is there a need to have a specific driving license. However, no serious accident has yet occurred.
- A lot has to do with bad driving habits of people. As an example people do drive 70 or 80 km/h on places where 50 km/h is allowed, which results in dangerous situations.
- Traffic disturbance caused by freight transport (Freight transporting vehicles not following laws), with an impact on noise and safety. Related is the issue of weak regulation and a lack of enforcement regarding freight transport.
- Low number of loading areas in the inner city and no real time infra causing conflicts and having lorries stopping at parking areas or just on the street illegally. There is a need for differentiation even within city limits in regards of both regulations and habits of delivery actors.

### **Economy**

- The low number of loading areas in the city and the suboptimal location of these loading areas.
- Delivery organisation, more efficient and multi-modal freight delivery.
- Lack of economic viewpoint in decisions on transport developments.
- Parking: “price of a parking place is higher than gold”.
- There is a need for adaptive regulations that are capable of classifying and controlling new technological advances/modes of transport as soon as they make it onto the roads.
- Inefficient use of space, e.g. lots of the railway company MAV real estate taking up space that are not in use (former shunting yards, repair facilities, etc.).

### **Vitality**

- Noise and pollution problems around main roads and railroads.
- Improve the quality of public space along the Danube for inhabitants and tourists.
- There is a lot of (transit) freight transport through the (inner) city, always traffic jams in the city.
- A lack of robust sustainable transport solutions - community E-bike system, community taxi system, etc.

### **Connectivity**

- Improvement of the connection between Buda and Pest, add more capacity to cross the Danube. There are no bridges between the M0 and the city center ringroad.
- Budapest Airport, see ‘accessibility’: Lacking good public transport connection to the city (no access to the metro network) nor to the surrounding city region.
- Railway company is not cooperative, improvement of the train-road connection in downtown.
- Ad-hoc housing developments; increasing prices / logistics centers generate less income.
- Inefficient commuter train network in the city
- Heavy duty lorries on some inner city roads due to the lack of some connections (the incomplete M0 motorway).
- Not optimal use of rail freight and waterborne freight transport
- Lack of effective maintenance schemes of road infrastructure
- Traffic jams on highways as well (M1 – Vienna – Budapest)
- New modes of delivery (cargo bikes) are an unknown/new phenomenon from the perspective of traditional users. Cargo bikes in downtown streets asks for a ‘shared space’ on the public domain.



## 3.1 Analysis

Good practice mentioned during the discussion is the limitation of freight transport in peak hours (demand management)

During the discussion automatically a division was made between local level, regional/functional level and national/corridor level.

### Plenary challenges addressed as being the key challenges of the urban node Budapest

1. Reserve space for future use (sustainable logistics)
2. Road and rail bottlenecks in the city
3. Adaptability in policy changes and innovations (changing circumstances)

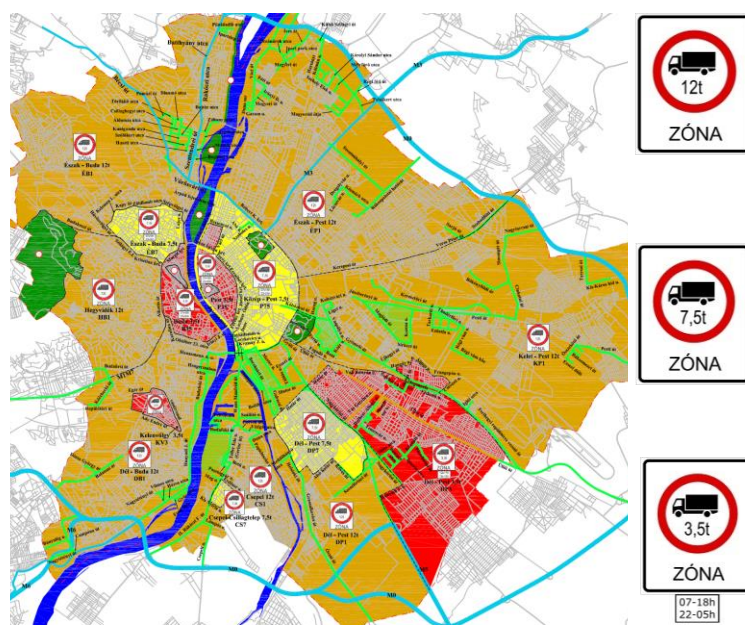
## 4 Pitches of good practices

### 4.1 BKK Centre for Budapest Transport

Máté Lénárt (BKK Centre for Budapest Transport) has given a short pitch in which he described two BKK good practices in Budapest.

#### 4.1.1 SUMP (2014 – 2030) – livable, safety and predictable – rehabilitation

- Strategic approach in the Budapest Transport Development Strategy 2014-2030 (BMT) or Balázs Mór Plan
- First SUMP based transport development strategy for Budapest. Good example is the reassessment of the public space at Deák Ferenc tér and Károlyi krt.
- Strategic objectives; liveable urban environment, safe – predictable and dynamic transport, cooperative regional connections The results are said to be felt through the entire city.
- The freight urban strategy was made in 2008
- For freight vehicles an access permit for the city is required with different rates for vehicles up to 12 tons / 7,5 tons / 3.5 tons). Environmentally friendly vehicles get a discount.
- There is free entrance for freight transport with a destination in the city on the designated routes (light green routes on the map).
- However, enforcement is quite limited, it is not a daily routine: there are some cameras in the city (fee is for the company), or the truck driver has



**Total weight restricted zone (12t, 7,5t, 3,5t)**

to be stopped by the police to get a fee and deliver some points on his driving license, but this chance is low. But only 50-60% of the people seem to follow the rules.

- In some historic parts of the city an access permit is needed for all vehicles, such as the Castle Hill.

The completion of the M0 Northwest might have immediate effects by getting rid of lots of lorries that are now crossing the city center whereas they are transit traffic.

#### 4.1.2 Public bike sharing scheme

A public bike-sharing scheme has been introduced in Budapest in 2014 – nicknamed the ‘MOL Bubi’ – with 125 docking stations and 1,500 bikes. Bike sharing bikes are redistributed to empty stations by the operator by cargo bikes to avoid generation of additional motorised traffic.

## 4.2 Cycle logistics

Kilián Zsolt (Cycle logistics) has given a pitch on the experiences with the cargo bike system in Budapest.

Some elements from his pitch:

- Roughly half of the packages weight less than 2 kg and therefore could be easily shifted to cargo bicycles
- The regulations of the inner-city are not followed strictly.
- Instead of cycling 25 km to the city center, smaller hubs closer to the city center are needed. Now many delivery vans are entering the city from the surrounding area (about 25 km). Nowadays these mini/midi hubs are too small to replace all diesel vans by electric vehicles or cargo bikes.
- Road limitations apply;
- 300-350 parcels per day are delivered.
- Profitable – even after the European subsidies stopped to fund the project.
- Use of space and location(s) for micro consolidation centers. Now 100 m<sup>2</sup> is available, but there is a need for 200 m<sup>2</sup>. This should be put in the mindset of developers, allowing those spaces of buildings to be used for such businesses.
- Potential locations for (temporary) pilot urban micro consolidation centers could be near Keleti station or in the former Slaughterhouse area, south of the city center (near Közvágóhid). This proposition of mini and midi hubs looks quite similar as will be done in Vienna and Rotterdam (the new Feyenoord stadium).
- Need of an **urban logistics cooperation platform**. At this moment this seems impossible in Budapest as there are too many stakeholders and the different city districts do have their own policies. An initiative of DHL is considered a marketing issue, “window-dressing”, as big flows of freight go by air (e.g. Lyon to Stockholm costs are 86 kg CO<sub>2</sub> per parcel).
- Big challenge is a **coherent policy at metropolitan level** on urban logistics.
- A link between trucks and cargo bikes has not been successful.
- Cargo bikes are used close to the depot so they can be used more rounds a day. Goal is to make profit also in the new situation where the EU funding has ended.

- Data: At this moment the company (Cycle logistics) has no access to data. This is a problem (e.g. how many vans does the company replace by cargo bikes?).

### 4.3 Vienna experiences

From the Vital Nodes project team a presentation is given about the experiences in the Vital Nodes workshop in Vienna (16 January 2018), especially on logistic oriented development (LOD), micro and midi hubs and brownfield development.

#### ***Building Blocks for Logistics Oriented Development***

As economic activities will mainly concentrate in city regions, this will result in a growth of convenience logistics, warehouses and on-demand delivery which will have a growing impact on liveability issues (environment, quality of life, health and noise) and accessibility in cities. At this moment a connection is missing between local initiatives as Wien Süd and Hafen Wien and the European multimodal transport network.

Logistics Oriented Development (LOD) has been described by the CEDR-funded research project 'FLUXNET' as a concept integrating multimodal transport networks, liveability and spatial planning (source:

[http://www.cedr.eu/download/other\\_public\\_files/research\\_programme/call\\_2015/freight\\_and\\_logistics\\_in\\_a\\_multimodal\\_context/FLUXNET-REPORT\\_DEF.pdf](http://www.cedr.eu/download/other_public_files/research_programme/call_2015/freight_and_logistics_in_a_multimodal_context/FLUXNET-REPORT_DEF.pdf)<http://www.must.nl/de/blog/fluxnet/>). LOD combines transport infrastructure, terminals (nodes) and modes of transport (via road, rail, water and aviation) and brings together (interests of) local, regional and national planning authorities, infrastructure providers and actors in the transport and logistics sectors.

#### ***Wien Süd as joint multimodal cargo terminal***

Considering the concentration of intermodal goods traffic in and around Vienna a multifunctional cargo terminal, the RRT Wien Süd, has been built at the southern city border of Vienna - at the interface of a rail line (the Pottendorfer rail line) and the S1 highway. The cargo center is jointly developed by Vienna, Lower Austria and the Chamber of Commerce (WKO). The RRT Wien Süd went into operation in December 2016 and serves as a major freight hub in the region, connecting basically all directions by lying directly on a high-level rail-road crossing. The terminal's capacity might experience a further stage of expansion in a second step.

#### ***Produktive Stadt***

From a spatial planning perspective the city of Vienna, together with other stakeholders, thought about the claim of space this good handling would need, already in an earlier phase. In the 'Productive City' (Produktive Stadt), started in November 2017, the city is prominently mentioning the big need for space to handle goods. This is another initiative of Vienna and Lower Austria combining several other stakeholders at city and regional level. This approach should offer solutions for finding space for 'new' industrial functions in the city of the future. As freight operators and national road and rail operators are

not among the stakeholders (yet), the outcomes are expected to stay mostly within the silo of the own planners and business community.

### ***Micro and midi hubs***

Nevertheless Vienna is now looking for possibilities to develop micro hubs (100 – 150 m<sup>2</sup>) and midi hubs (1,000 m<sup>2</sup>) in the city. Perhaps Vienna's main terminals Wien-Süd and Hafen Freudenau offer opportunities for connecting long-distance and last-mile freight logistics. At the moment it is easier to find locations for the smaller micro hubs than for midi hubs, as empty shop space can be transformed into micro hubs. Rail access to midi hubs is much more difficult and expensive to realize so the choice was made for trucks delivery in order to get a realistic business case.

The interaction between the different policy fields (housing, distribution and planning policy) is interesting also when the distance from the consolidation centers to the city grows and causes lots of traffic in the city. The city of Vienna now reserved for what is needed, except for housing. While the brownfields traditionally are used as housing development locations. In an attempt to set aside those areas for future manufacturing and industrial work/mixed zones. To be able to give companies a place not only outside of the city center, but also within – to limit the traffic movements. In this way the brownfields are now transformation and conversion areas, while not upgrading the areas “to death” by ruling out housing and upgrading. So no extra investments in these conversion areas in quality of urban space and green, otherwise it will become very expensive. However a challenge is the lacking link with the network.

## 5 Synthesis

The main outcomes of the two subgroups are discussed plenary. Following up on those outcomes (described below) is strongly advised for the future logistic and spatial development (liveability) of Budapest.

- In general, the ring road M0 has already brought development potential close to the city center.
- Csepel Island, the area around the Airport and the southern bend along the M1 highway are the main intermodal hubs for freight logistics (where in total 90% of the goods is being handled). However, an integrated approach in area and demand management is strongly advised in order to tackle future flows and growth. An integrated action plan for the M0 corridor zone and Csepel Island is crucial.
- Chinese market might be a 'special' practice (the 8th district has an old Chinese Market with a closed railway station, a sports center and tram depot).
- Reserve space for future use of freight and logistics: This should imply political support for midi and mini hubs, management and ownership, flexibility, etc.
- There is a lack of a shared vision. There are many fragmented ideas, but not one overarching leading vision on how to tackle future transport in relation to spatial development. This halts many initiatives and ideas because there is not a baseline nor an objective to measure against.
- However, the institutional background is difficult, at local / municipal level there is no freedom to act, collaboration between districts is difficult, and policy is very centralized. Districts in Budapest have no overarching power so (**solution**) private operators can be the key. An interview of shopkeepers showed that they are interested in the bottom line, e.g. in parking possibilities for lorries near their shop and less in carbon-free initiatives. So best way is to first identify micro-management solutions, then think on awareness-raising.
- Along the M0 ring road ownership of land is very fragmented, no actor can buy these small parcels of land.
- Remark: More space needed does not automatically mean more land, you can also think of a part of a building that can be used for smaller functions in the city..
- "Institutionally there are no strong integrators" (government nor other organizations). There is no cooperative environment, there is competition between providers.
- Three main pillars should contribute to smarter city logistics: restrictive regulations, territorial partnership and a specific fund. As long as there is no strategy, legislation is insufficient.
- Fundamental challenge needed: There is no connection between territorial-and transport planning.
- Resilience in policy changes and innovations.
- There is potential for consolidation, but it is difficult to modify a system that is up and running. At this moment big trucks are still entering cities in Hungary to deliver small parcels.
- **Data:** Use possibilities for tracking and monitoring, challenge is stimulating business intelligence, improve the level and quality of services (a minimum set of data exists, e.g. on brownfields). Now there is a vacuum, with a lack of data and a lack of openness to data. There is no level of service indicators in the city, e.g. on the service level of logistics.
- The city has too few loading bases in the city. The issue is to use them right. How to balance this? By collecting data about these loading bases. A loading permit is free for 20 minutes (free parking).
- Solution could be connecting mobility ('dungles into lorries' > cloud system), introduce adaptive pricing and stimulate the usage of roads in off-peak hours.
- In Budapest huge amounts of greenfields are available, so greenfields are more preferred than brownfields. Especially in southern Budapest huge (public) brownfields exist near railways, but

brownfield redevelopment is over-bureaucratized and is being privatized in a corrupt way. Besides there are no data on the status of brownfield areas, e.g. is the area polluted with asbestos?

- Rail and road bottlenecks: The railway bridge across the Danube will be renewed with an additional (third) track. Resilience is an issue. The new railway bridge (with the third rail) across the Danube should be ready in 2022 (CEF funded) but then still the speed will be limited due to the station on the east bank. This railway bridge is of EU importance but will remain vulnerable.

### ***The urban node Budapest on the European corridors***

- 4 logistics hub developments throughout Hungary (Kisvárdá or Nyíregyháza (northeast), Békéscsaba (east), Zalaegerszeg (west) and one more)
- Hubs in the surroundings are Sopron, Győr and Szekesfehérvár.
- Is Budapest a transit or a starting point?
- Transit traffic passing Budapest on the axes Southwest-Northeast and Southeast-Northwest. Multimodality (road and rail), especially trains, more tracks will be needed, especially between Budapest and Vienna, for passengers and freight.
- Budapest has a main function for transit and consolidation on the corridor between Kraków and Skopje. Besides there is Hungarian transit and offshore traffic in the Carpathian / Pannonian Basin towards China.
- Ambition of Budapest as a consolidation center for offshore trade in Piraeus and Koper, with more added value and more service layers, as a frontrunner in innovations in the supply chain? Goal is to reposition Budapest – including Budapest airport – as a center for consolidation on specific markets.
- Interoperability is an issues – ERTMS (not there yet, technical systems combining in the same system, traffic management as barrier = less developed) – scale is necessary.
- Needed are: Multilevel governance and innovations in policies and businesses.



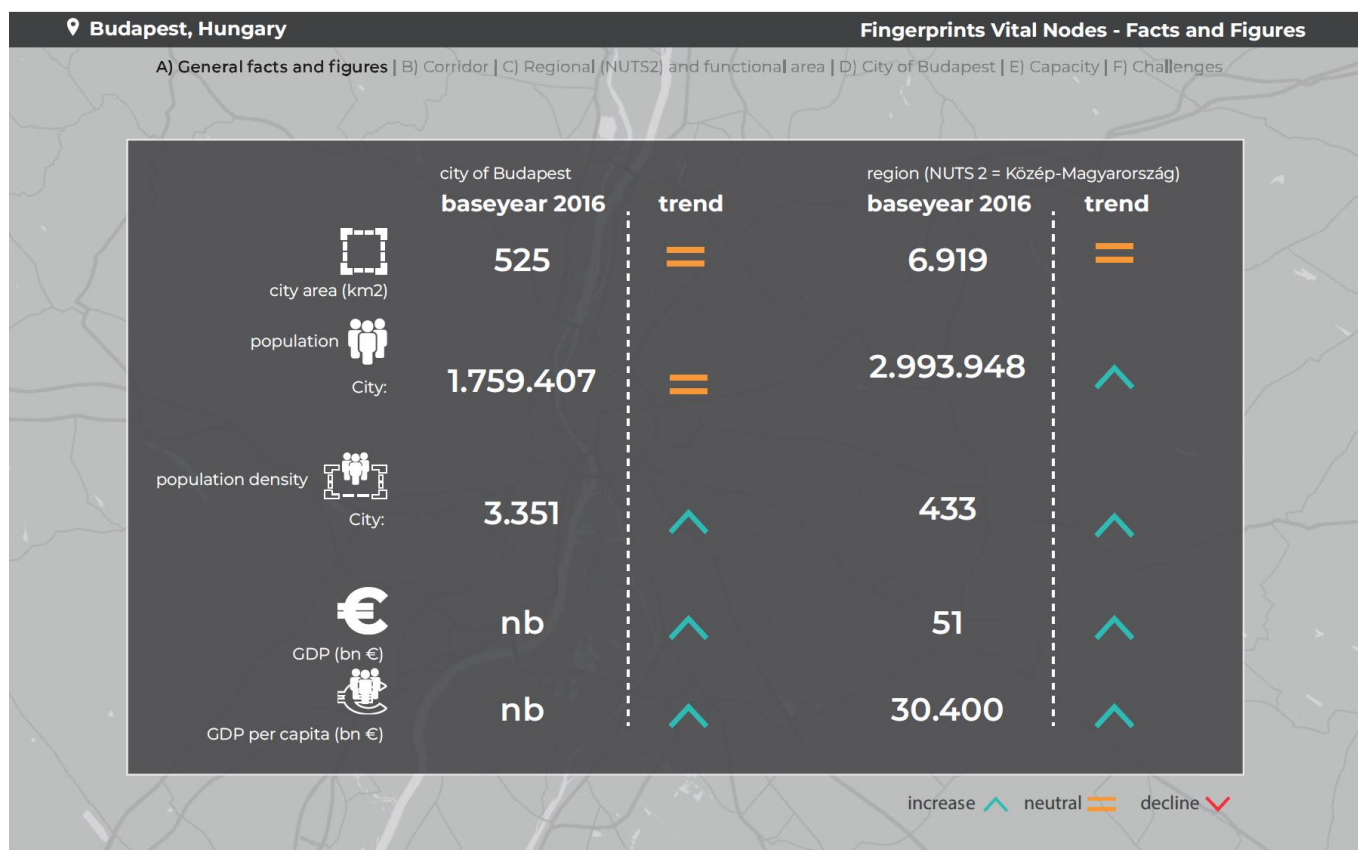
## Attachments

1. Fingerprint urban node Budapest (info graphic)
2. Good practices with validation of scores
3. Map corridor level
4. Map regional / urban node level
5. Map city level
6. List of participants Budapest workshop
7. Programme urban node workshop Budapest





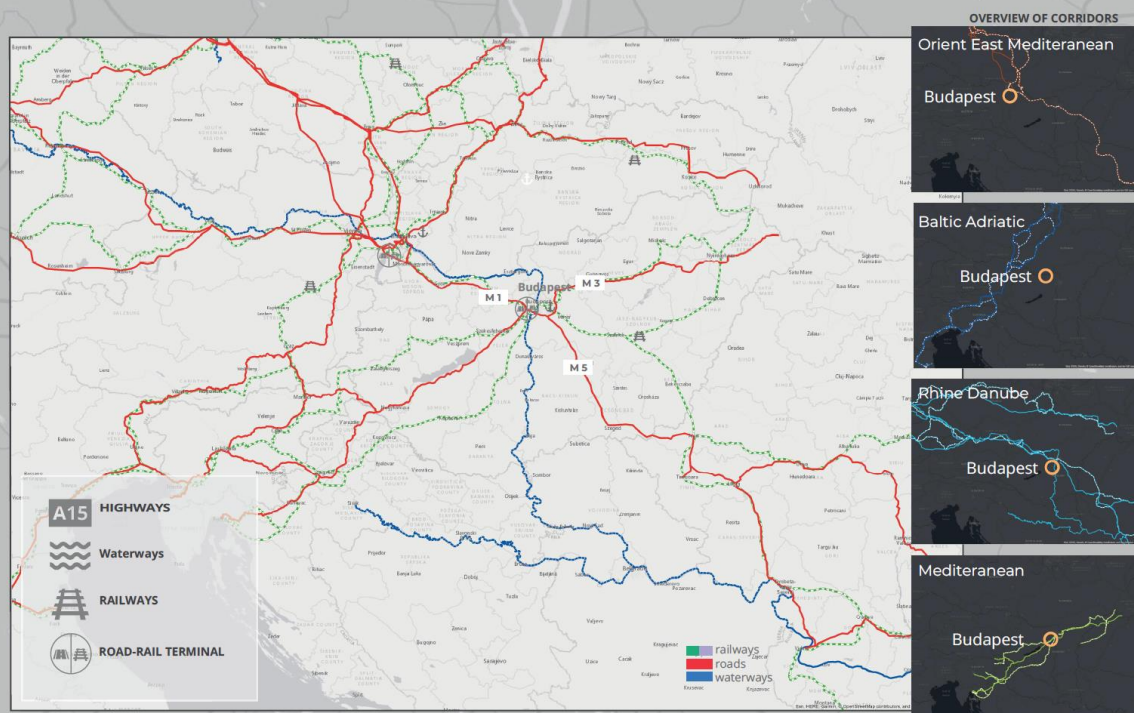
## 1. Fingerprint urban node Budapest (info graphic)



📍 **Budapest, Hungary**

**Fingerprints Vital Nodes - Facts and Figures**

A) General facts and figures | **B) Corridor** | C) Regional (NUTS2) and functional area | D) City of Budapest | E) Capacity | F) Challenges



## 📍 Budapest, Hungary

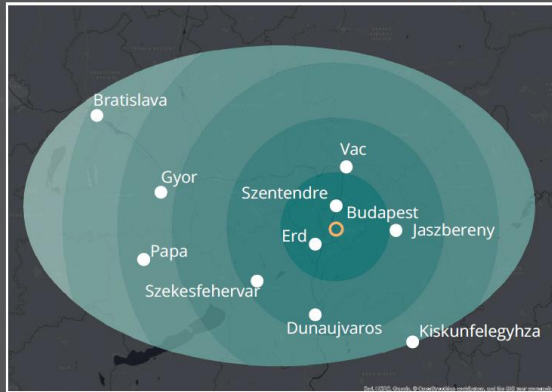
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### IMPORTANT CHARACTERISTICS:

Regional train services in the Budapest area are upgraded with new trainsets (Flirt) and infrastructure improvements. There is a rise in the number of intermodal freight trains running from the different Budapest terminals towards for instance the port of Koper or inland German destinations such as Munich. The BMT plan calls for Cooperative regional connections, including waterborne services within the region and waterborne freight transportation connections should be enhanced on the border area of Budapest and the town of Érd.

### INDICATIVE FUA



### FREIGHT INFRASTRUCTURE baseyear 2016

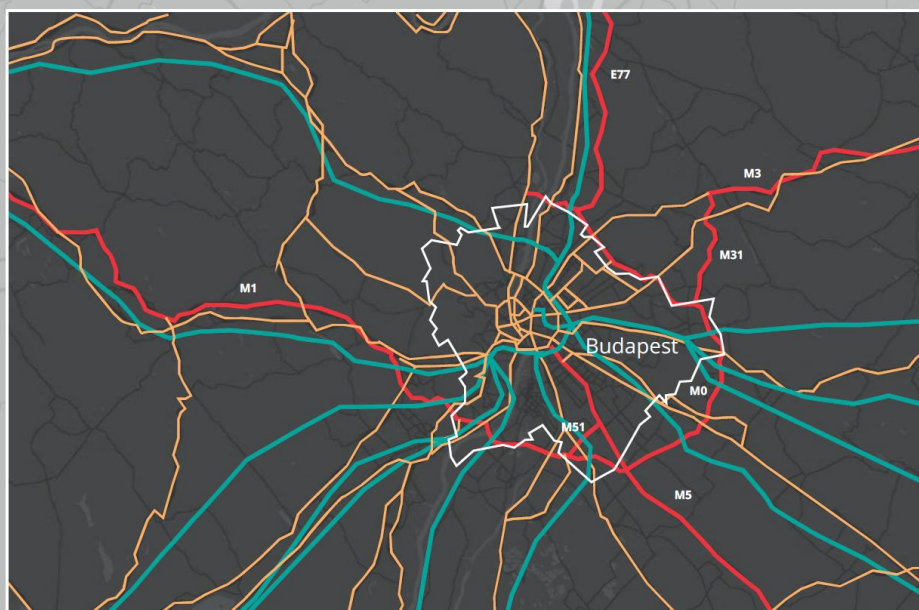
	Number	ha	mton	TEU
Road-Rail terminal	3 =	119 ^	na ^	510,000 (cap) ^
Air terminal	1 =	0 ^	0.12 ^	na ^
Trimodal terminal (deepsea)	1 ^	10 ^	2.2 ^	170,000 ^

increase ^ neutral = decline v

📍 **Budapest, Hungary**

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A) General facts and figures | B) Corridor | C) Regional (NUTS2) and functional area | **D) City of Budapest** | E) Capacity | F) Challenges



**Budapest, Hungary**
**Fingerprints Vital Nodes - Facts and Figures**

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**CAPACITY RAIL**

Under the current CEF programme a study is undertaken for capacity development at the Budapest railway node which currently is a bottleneck


**CAPACITY WATER**

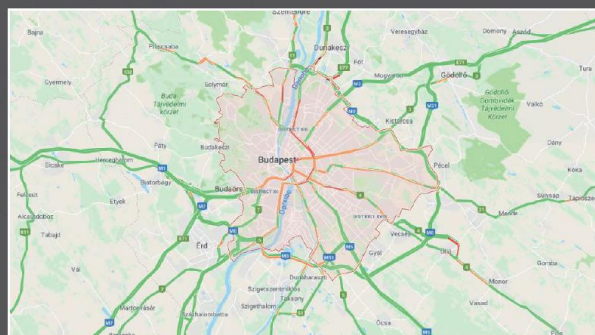
No major capacity issues observed


**CAPACITY AVIATION**

There are major redevelopments for freight handling at Budapest airport (BUD). The BUD:2020 Development Program will give a 250.000 tonnes p/a capacity.


**CAPACITY ROAD**

Average intensity road on evening peak:



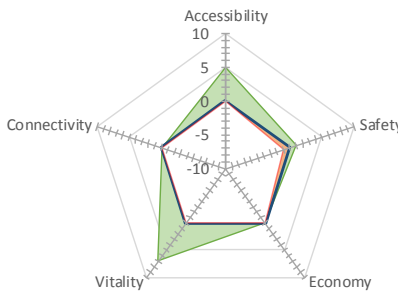


**📍 Budapest, Hungary**
**Fingerprints Vital Nodes - Facts and Figures**

 A) General facts and figures | B) Corridor | C) Regional (NUTS2) and functional area | D) City of Budapest | E) Capacity | **F) Challenges**
**CHALLENGES**

- The lack of a (real-time) information system for better organizing freight transport
- The low rate of environmentally friendly transportation vehicles would not be an issue as there are just a few models on the market. The problem here is the lack of control/enforcement while there is a very high rate of environmentally outdated (EUR4 or older) passenger and transport vehicles
- Lack of harmonization of transportation needs
- The low number and lack of efficiency of promotion campaigns to stimulate environmentally friendly technologies and vehicles

## 2. Good practices with validation of scores

Solutions name	Micro consolidation centres (Low-emission last mile delivery)		
Type of solution	Optimizing a terminal		
Node example	Budapest		
Link or contact	<a href="mailto:zsolt.kilian@gmail.com">Dipl.-Ing. KILIÁN, Zsolt // zsolt.kilian@gmail.com // +36 30 348 6266</a>		
Investment costs	Investment costs: less than 50k / yearly revenues between 20-30k / financially sustainable (creates profit)		
Description	Last mile delivery solution that shifts the parcels from diesel vans to cargo bicycles, tricycles & electric vehicles. In order to keep the distance minimal there must have been a 'Micro Consolidation Centre' opened close to the historical city centre. All parcels are transported from the main HUB to the MCC early morning before rush hour, therefore it can be said that we could eliminate a tiny piece of traffic on a critical section of the network.		
Impact overview			
Impact criteria	Questions	Answer	
<b>A Accessibility</b>	The solution impacts the chosen modality of the flows	1	
	The solution impacts the route of the flows	1	
	The solution impacts the volume of the flows	1	
	The solution impacts the timing of the flows	1	
	The solution impacts the available infrastructure capacity	1	
<b>B Safety</b>	The solution impacts the number of pedestrian casualties	0	
	The solution impacts the number of cyclist casualties	-1	
	The solution impacts the number of motorised vehicle casualties	1	
	The solution impacts the external safety of dangerous goods transport	0	
	The solution impacts the external safety of warehousing operations	0	
<b>C Economy</b>	The solution impacts the attractiveness of the local scale (city) of the Node for investments (value captur	0	
	The solution impacts the attractiveness of the FUA from logistics perspective of the Node for investmen	0	
	The solution impacts the price of living in urban areas (socio economic)	0	
	The solution impacts synergies with other sectors	0	
	The solution impacts the GDP	0	
<b>D Vitality</b>	The solution impacts the air quality	2	
	The solution impacts the visual quality of the environment	1	
	The solution impacts the level of noise pollution	1	
	The solution impacts the ease of moving in the city for citizens	2	
	The solution impacts the quality of living	1	
<b>E Connectivity</b>	The solution impacts the connection between the city and the functional urban area from a mobility p	0	
	The solution impacts the connection between the city and the functional area from a logistics perspec	0	
	The solution impacts the connection with other Nodes on the Corridor	0	
	The solution impacts the connection with other TEN-T Corridors	0	
	The solution impacts the connection with the comprehensive network	0	

2 strong positive impact 1 Positive impact 0 No substantial impact -1 Negative impact -2 strong negative impact

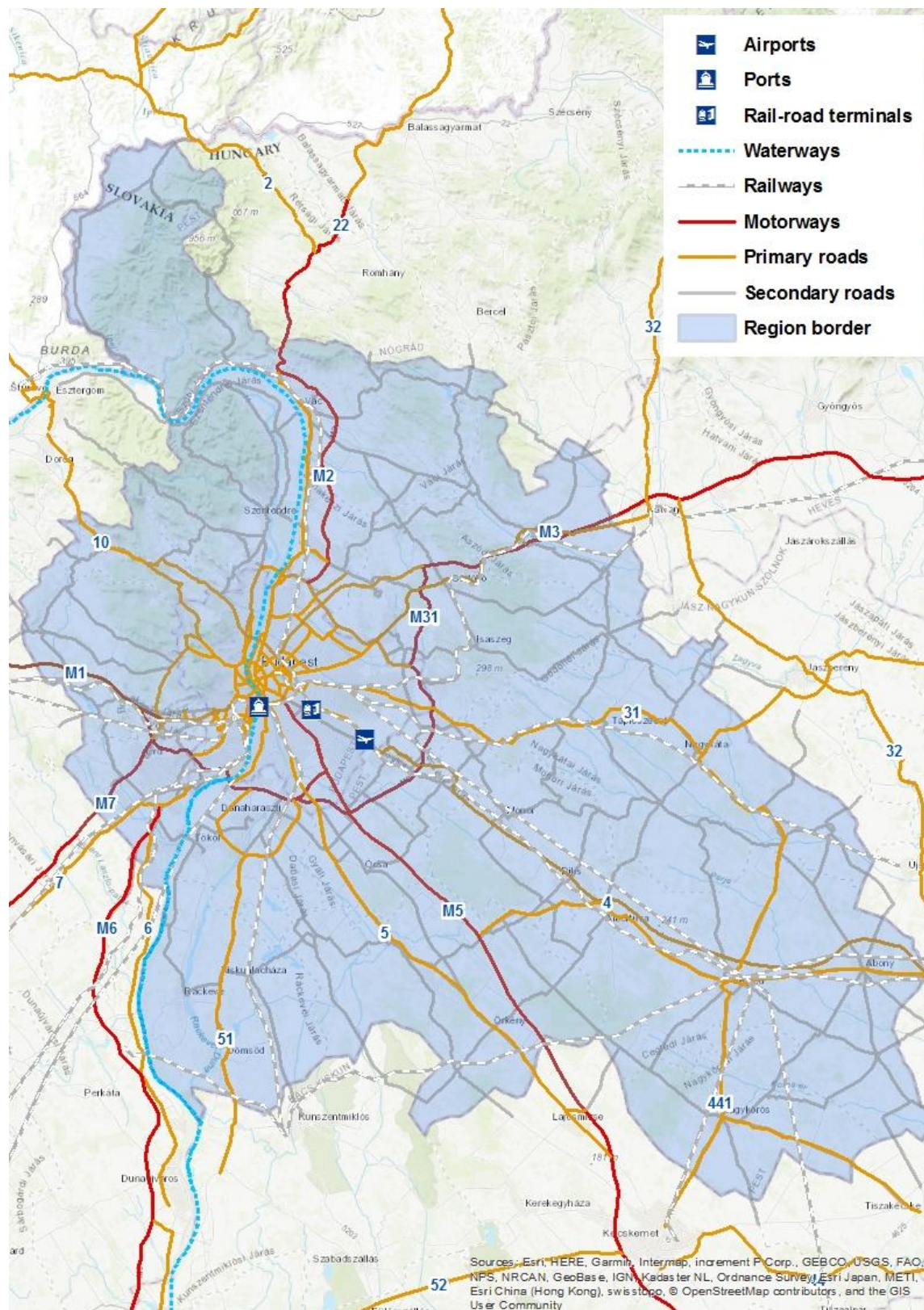


### 3. Map corridor level



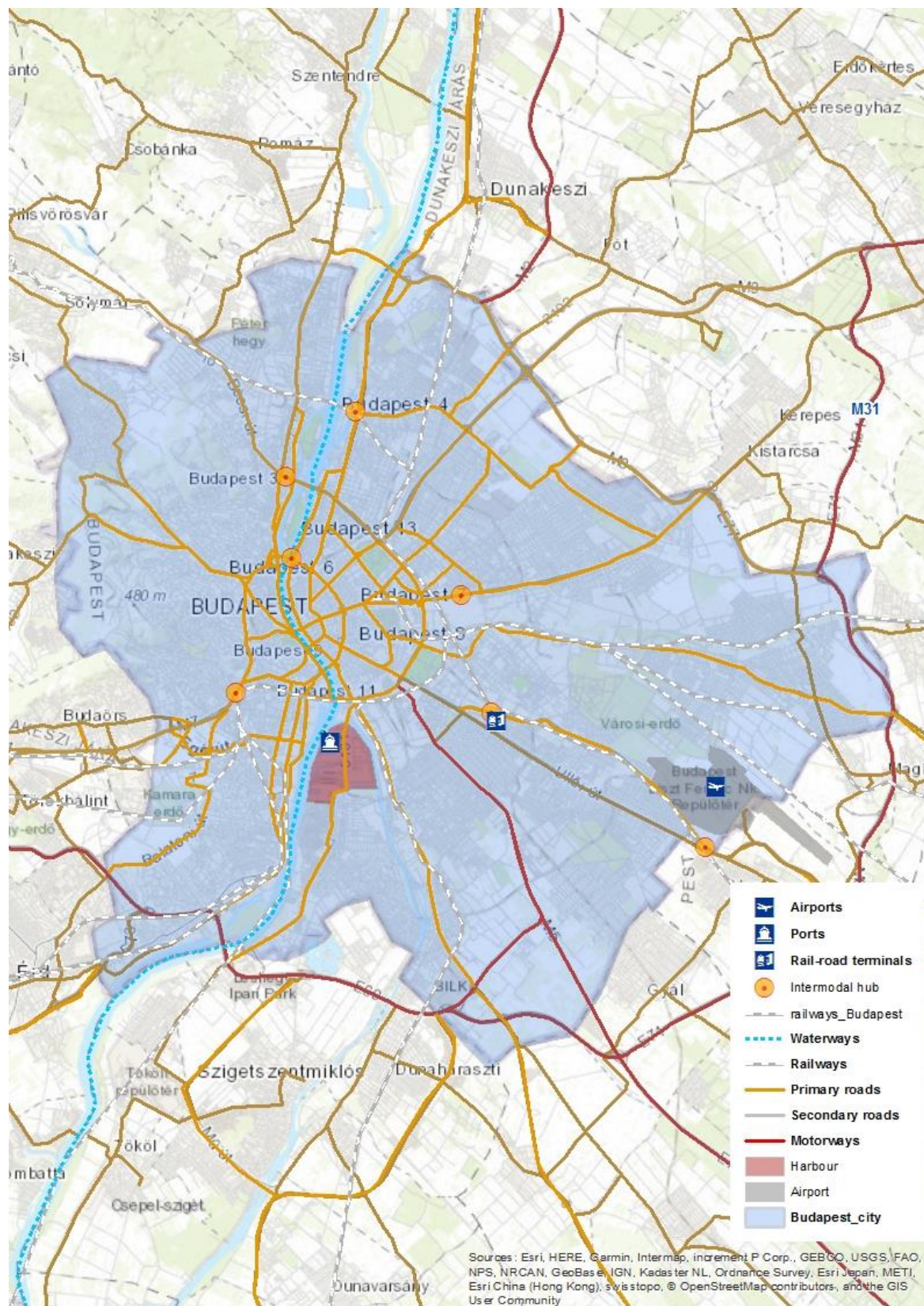


#### 4. Map regional / urban node level





## 5. Map city level



## 6. List of participants Budapest workshop

Name	Organization
Orsolya Béres	Mobilissimus Kft.
Tamás Bíró	National Government/NFM/Ministry of National Development
Halmos Tamas	BKK
Balász Fejes	BKK - Mobility Strategy - Strategy and Innovation
Soóki-Tóth Gábor	Budapest Airport Region Cluster / Városfejlesztés21
Viktor Győri	Municipality of the City of Budapest Mayor's Office Department of Urban Planning
Dávid Hentz	Belváros-Lipótváros Városfejlesztő Kft
Valler Imre	Budapest Közút
Hunyadi István	XVIII. District
László Sándor Kerényi	BKK - Mobility Strategy - Strategy and Innovation
Dóra Kókai	Municipality of Budapest
Berzlánovich Krisztián	Budapest Közút
Máté Lénárt	BKK - Mobility Strategy - Strategy and Innovation
Edit Nemes-Imricskó	Eurodite
Judit Sánta	Municipality of the City of Budapest Mayor's Office Department of Urban Planning
Hanna Szernzo	MRI
Joep de Roo	Eurodite (moderator)
Peter Wolf	Local government of Pest County
Kilián Zsolt	Hajtás Pajtás Kft. / freelancer
<b><i>Vital Nodes Organisation</i></b>	
Onno de Jong	Ecorys
Kevin van der Linden	Rijkswaterstaat
Raymond Linssen	Rijkswaterstaat

## 7. Programme urban node workshop Budapest

09.00 – 09.30	Welcome
09.30 – 10.00	<p>Start, welcome and introduction round</p> <ul style="list-style-type: none"> <li>- Short introduction to the Vital Nodes project, including goal of the Vital Nodes project and goal of this workshop - by Kevin van der Linden (Rijkswaterstaat)</li> <li>- Programme workshop – by moderator Joep de Roo (Eurodite)</li> </ul>
10.00 – 10.45	<p>Presentation “Fingerprint Budapest” - by Onno de Jong (Ecorys)</p> <ul style="list-style-type: none"> <li>- Facts and Figures</li> <li>- Challenges / barriers</li> </ul> <p>The Vienna experience - by Raymond Linssen (Rijkswaterstaat)</p>
10.45 – 11.00	Break
11.00 – 12.00	<p>Working on Budapest’s Challenges (In two groups)</p> <p>Interactive discussion via maps (“spatial dimension”) on the challenges of the urban node Budapest</p> <p>Sharing outcomes of the group discussions by the two groups – in plenum</p> <p>Pitches on perspectives /good practices</p> <ul style="list-style-type: none"> <li>- Short pitches/presentations on perspective and good practices by stakeholders (tbc)</li> </ul>
12.00 – 13.00	Lunch
13.00 – 14.30	<p>Working on Budapest’s Challenges (in two groups)</p> <ul style="list-style-type: none"> <li>- Continue interactive discussion on challenges to decide on ‘key’ challenges (to be discussed afterwards in more detail)</li> </ul> <p>Sharing of outcomes of the two groups – in plenum</p> <p>Working on Budapest’s Challenges - Solutions, drivers &amp; barriers and possible impacts (in two groups)</p> <ul style="list-style-type: none"> <li>- Towards (directions of) solutions</li> </ul>
14.30 – 15.00	Break
15.00 – 16.00	<p>Plenary discussion on outcomes of the discussions</p> <ul style="list-style-type: none"> <li>- Discussing the (key) challenges and thoughts on solutions</li> </ul> <p>What is the added value for Europe, what do we need and what can we recommend?</p> <ul style="list-style-type: none"> <li>- Interactive discussion on “Integrating urban node Budapest in the TEN-T network” – in plenum</li> <li>- Sharing / summary of outcomes of the discussions</li> </ul> <p>Wrap up and follow-up – by moderator Joep de Roo (Eurodite) and Kevin van der Linden (Rijkswaterstaat)</p>
16.00 – 17.00	Informal networking