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D.T3.1.2 Study on the long term mobility strategy for the  
Municipality of Budapest Főváros XVIII. District  
Pestszentlőrinc - Pestszentimre

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April 2019

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## 1. INTRODUCTION

The purpose of this study is to support the creation of a comprehensive long-term mobility strategy for the Municipality of Budapest District 18 Pestszentlőrinc - Pestszentimre (District 18) and to support their activities in revising their integrated urban development strategy by providing new input in the field of sustainable urban mobility. The project framework does not provide sufficient framework to elaborate a proper sustainable urban mobility plan (SUMP) including a thorough background analysis, however other existing and valid municipal strategic documents and the studies created in LAirA project stood at our disposal.

The study kept the vision and strategic objectives of the valid integrated urban development strategy, but created new priorities for the thematic and territorial goals in field of mobility. A list of measures is proposed under each priority that are already existent in the integrated urban development strategy of the Budapest Municipality and the Municipality of District 18, Bicycle Traffic Network Plan for Municipality of District 18, Budapest Mobility Plan (SUMP of Budapest), AirLED/SULPiTER/LAirA project deliverables, outputs and results, the Hungarian Gazette of the Hungarian Government or complemented with new project elements and ideas.

## 2. ANALYSIS - OVERVIEW OF THE MOBILITY SYSTEM OF THE DISTRICT 18

The goals of the following analysis is to provide a general overview of the transport system of Pestszentlőrinc-Pestszentimre based on the LAirA D1.2.3 deliverable, Bicycle Traffic Network Plan for Municipality of Budapest District 18 and the transport analysis of the integrated urban development strategy of the District 18. The intervention areas and proposed measures are in line with the existing strategic goals. The mobility of District 18 cannot be determined on its own, therefore it has to be embedded in a wider context, region. The district is located to the South-East of Budapest along the border of Budapest with the municipalities of Vecsés and Gyál, as well as neighbouring districts XXIII., XIX., X. and XVII.

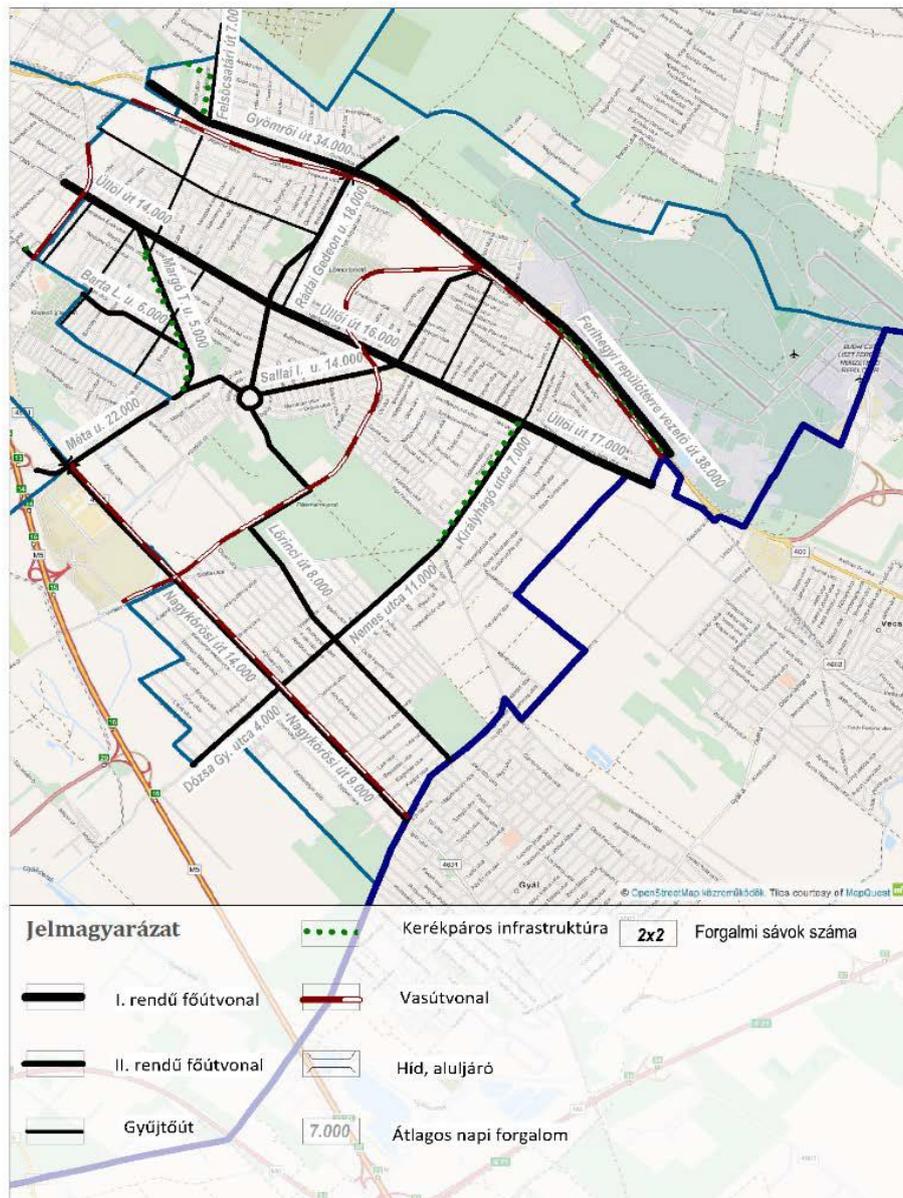
The majority of the areas of Liszt Ferenc international Airport is found in the District 18 and the entrances on the landside are located there too. The airport and thereby the district too is embedded into the European and Hungarian highway network that is shown in the following figure:



FIGURE 1: FAST-ROAD NETWORK OF BUDAPEST AND ITS SURROUNDINGS INCLUDING THE AIRPORT AND BUDAPEST DOWNTOWN LINK

District 18 is directly connected to the Hungarian fast-road network and to the downtown of Budapest via Üllői road - Ferihegyi repülőtérre vezető road - main road #4. (M4 highway) axis, but the fast road network is accessible via M0 and M5 highways too.

The District 18 haven't experience considerable road network development other than refurbishment of existing road infrastructure. The area lacks the circular road infrastructure and in some areas the road connection with neighbouring municipalities is not sufficient. Located in the outskirts of Budapest, the District 18 has a strong through road traffic from the agglomeration as well as a strong traffic volume connected to the airport.



**FIGURE 2: ROAD NETWORK OF PESTSZENTLŐRINC-PESTSZENTIMRE (INTEGRATED URBAN DEVELOPMENT STRATEGY OF BUDAPEST 18 2014-2020, 2015)**

Hungary has a radial railway network with Budapest centre. Out of the radial lines Budapest - Szolnok - Záhony (Railwayline #100) passes through the Northern part of the district. In addition the Budapest - Lajosmizse railwayline (#142) goes along the Southern and Western part of the district that is waiting for modernization and electrification. Both lines have great importance in the commuter traffic of the agglomeration, and the line #100 having key domestic importance experiences close to shortage of capacities, while the #142 has bottlenecks that hinder the increase of existing capacities. Both railwaylines meet at Kőbánya-Kispest and can access to Nyugati Train Station. District 18 has a railway lines that is not in use connecting the Budapest - Kelebia and Budapest - Cegléd railway lines between Soroksár és Szemeretelep with the so called 'Burma-railwayline'.



**FIGURE 3: THE BURMA RAILWAYLINE AND ITS SURROUNDINGS**

The railwayline #100 has a significant isolating impact on the urban structure. There are two road level-crossings (Honvéd street és Üllői road) in the district, while one non-level crossing (Ráday Gedeon street). In addition pedestrians and cyclists may use an overpass at Ferihegy train station and at Felsőcsatári road, though both have elevator, but non of them are in operation. The overpass at Pestszentlőrinc train station is only accessible for pedestrian. It is not barrier-free.

The railwayline #142 has only level-crossings in the District 18.



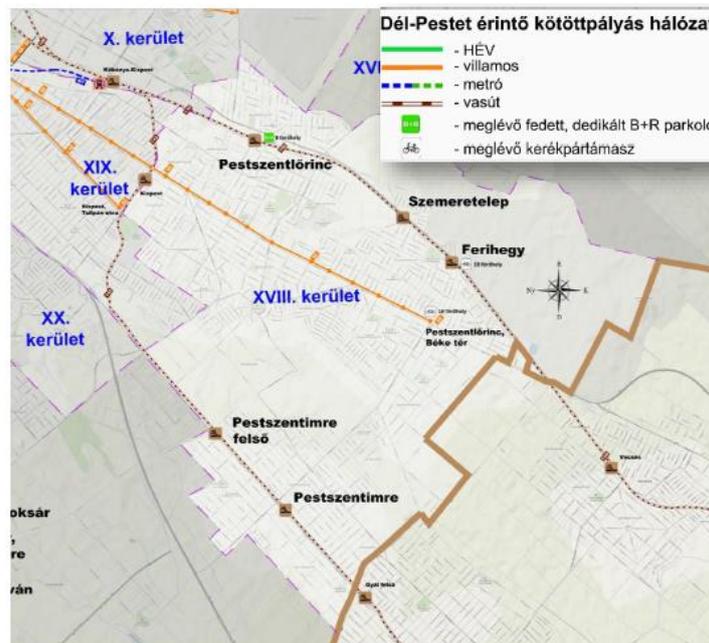
**FIGURE 4: PASSENGER RAILWAY CONNECTIONS AND STATIONS IN THE DISTRICT 18**

Bus transport (BKK, Volánbusz) has a significant role in the public transport of Pestszentlőrinc-Pestszentimre. Bus routes add up to 17,9km in the district. There is a bus depot right at the vicinity in the District 19.



**FIGURE 5:** BY MEANS OF THE EXTENSION OF THE TRAMLINE 42, THE GLORIETT-LAKÓTELEP WILL HAVE A DIRECT URBAN BOUND RAIL CONNECTION TO THE METROLINE M3 PROVIDING A PARALLEL ROUTE OR REPLACING THE EXISTING BUSLINE 194.

Pestszentlőrinc-Pestszentimre has no metro and suburban rail lines. Tramline 50 has a significant role in the public transport of the district providing an East-West connection within the district and to the metroline M3. The tramline 42 operates only to the boundary of the District 18 until the railwayline 142. The extension of the tramline is on the agenda for many years.



**FIGURE 6:** BOUND-RAIL NETWORK WITHIN DISTRICT 18

The total length of the cyclist infrastructure in Pestszentlőrinc-Pestszentimre is 8,5 km, that lags behind the Budapest average despite the favourable relief conditions to cycling. Only few routes have separated cyclist infrastructure: Ferihegyi repülőtérre vezető road (Ferihegy 1 - Üllői road között), Margó Tivadar - Kele street, Királyhágó road. In the large residential areas of Pestszentlőrinc-Pestszentimre

Zone 30s and residential zones prevail, that make those public space suitable for cycling.

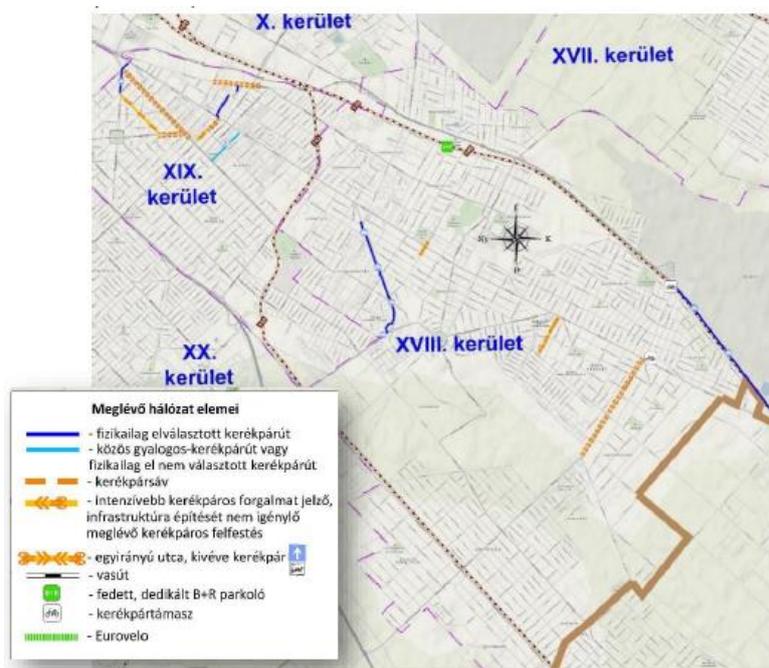


FIGURE 7: BICYCLE TRAFFIC NETWORK FOR MUNICIPALITY OF BUDAPEST DISTRICT 18

The only pedestrian zone in Pestszentlőrinc-Pestszentimre can be found at Szervét Mihály tér. Higher passenger traffic is experienced along the residential blocks and the Üllői road with higher concentration of institutional and retail function. The pedestrian road network is close to complete, but in many places it requires refurbishment and making it barrier-free.

The total population of Pestszentlőrinc-Pestszentimre is 100.912 living in 43.656 dwelling units and owning 32.797 cars (2016). The densifying but mostly family-house with garden areas experience more and more street conflicts due to the rising demand for parking places and that more and more cars are stored in the public space instead of the own properties. The 34% of the dwelling units are found in large areas with blocks of flats (Havanna lakótelep, Szent Lőrinc lakótelep, Lakatos lakótelep, Gloriett lakótelep, Alacskai úti lakótelep). The number of car parkplaces lags behind the actual demand causing green space conflicts too. District 18 has only one P+R facility at Ferihegy train station, however, many areas near large capacity public transport stations experience spontaneous P+R facilities such as at Ferihegy train station.

## 3. GOALS AND MEASURES OF THE MOBILITY STRATEGY

### 3.1. Vision

The vision of the district is the cornerstone of the study on urban mobility strategy. Pestszentlőrinc-Pestszentimre concisely determines its plans, how the district would ideally look like in 15 years and what development goals should be assigned to reach them. In order to reach the vision, goals are being formulated as a means to reach that in a system of overall, thematic and horizontal objectives.

The long term vision and the related overall goals are being formulated in 2015 determined by the document '2030-ig szóló Budapest XVIII. Kerülete Területfejlesztési Konceptiója'. The analysis, having investigated the role of the district within Budapest and the agglomeration, the potential development of the local economy, society and environment of the district set the following vision:

*„Independent district with distinct identity with regional integrating role, increasing number of workplaces, providing a livable and sustainable home for its dwellers.*

In more details the vision means the following:

- An independent district keeping its own identity,
- that is integral part of capital and the region having a strong centre and subcentres, excellent transport links serving the needs of local people and strengthening its role at Budapest and at regional level,
- the airport has a considerable economic potential in the functional urban area of Budapest,
- quality, safe and green urban dwelling environment providing high-standard of living,
- high-quality local services and workplaces, and good quality, safe and differentiated internal connections,
- citizens are environmental-conscious, and active at community level and at self-provision.

The vision entails the mobility at 3 levels and intends to reach a quality development. The first is determined by the location of the airport and the capital within national and international context focusing on transit-like traffic. The second deals with the links and position within Budapest and the micro-region. The third one has a focus on the internal travels and related infrastructure within the district.

### 3.2. Objectives

The vision of the Municipality of Budapest District 18 Pestszentlőrinc - Pestszentimre appears in the existing strategic documents. The reach of this future

state is carried out via and comprehensive set of goals. The figure below shows the set of goals with linkage to the sustainable urban mobility.

Based on the vision, three long term overall goals can be determined for the societal, environmental and economic field. Non of the overall goals refers directly to mobility, but indirectly the sporty population, safe environment, and attractive environment for the entrepreneurs are all linked with sustainable, safe and quality mobility system.

The district has set so called horizontal goals too. One of them concerning the mobility refers to sustainability as a basic principle.

There are 10 thematic and 3 territorial mid-term goals. Out of them two refers directly, while three of them indirectly to mobility:

Thematic objectives referring directly to mobility:

- T7. - Developed regional accessibility taking into account the needs of the district.
- T8. - Sustainable and environmental-friendly mobility system well-connected to external networks and promoting local mobility.

Thematic and territorial objectives related indirectly to mobility:

- T3. - Active, healthy and sporty population
- T9. - Harmonic and quality built environment
- TR3. - The surrounding of the Airport is
- Dynamically developing economic and healthcare service providing airport area in the functional urban area of Budapest.

Taking into account the vision and the objectives of the district, 4+1 priorities were formulated in order to create a human-focused, sustainable urban mobility system.

- 1) Improving accessibility of the District 18 Budapest at macro- (international, domestic) and at micro-regional level.
- 2) Mobility development within the capital or beyond the boundary of the district;
- 3) Improving mobility connections within the the district;
- 4) Strengthening the sustainable mobility solutions of the Liszt Ferenc International Airport;
- 5) Awareness raising and communication

Urban Development Concept	Vision	Independent district with strong identity, and integration regional role with expanding offer for workplaces that is a livable and sustainable home for its residents		
	Overall objectives (2030)	SOCIETY Active, sporty, educated, solidary local society	ENVIRONMENT Comfortable, safe, quality green residential urban environment	ECONOMY Attractive entrepreneurial environment for the local, creative-innovative and service sector too
Integrated Urban Development Strategy	Thematic (T) and territorial (TR) objectives	T1. – Solidary, patriotic community	TR1. Multifunctional district centre with locally available quality services	
		T2. – Quality public services, sustainable institutional operation	TR2. Knowledge-, skill- and green-based innovative economic development with the renewal of brownfields	
		T3. – Active, healthy and sporty population	T7. – Developed regional accessibility taking into account the needs of the district	
			T8. – Sustainable and environmental-friendly mobility system well-connected to external networks and promoting local mobility	
		T4. – Quality, energy efficient housing stock capable of meeting versatile social needs		
		T5. – Urban green network capable of satisfying recreational needs		TR-3.- Dynamically developing economic and healthcare service providing airport area in the functional urban area of Budapest
		T6. – New, renewing, well-functioning public space		T10. – Sustainable and modern municipal asset management
			T9. – Harmonic and quality built environment	
Current strategy	Priorities of the current strategy	<ol style="list-style-type: none"> <li>1. Improving accessibility of the District 18 Budapest at macro- (international, domestic) and at micro-regional level</li> <li>2. Mobility development within the capital or beyond the boundary of the district</li> <li>3. Improving mobility connections within the the district</li> <li>4. Strengthening the sustainable mobility solutions of the Liszt Ferenc International Airport</li> </ol>		
	Horizontal priority	Awareness raising and communication		

FIGURE 8: OVERVIEW OF THE BUDAPEST CAPITAL DISTRICT 18'S STRATEGIC OBJECTIVES (IN HUNGARIAN)

### 3.3. Priorities

The mobility system is a complex system with many players in which the priorities appear in well-distinguished decision-layers. Even though the territorial focus is on District 18, the priorities deal with different layers of the transport infrastructure hierarchy including international, domestic, regional or district-wide measures.

Large and mirco-regional priorities are realized based on national level decision and resopurces. The Dsitrict has the least influence on them.

The second priority requires the the cooperation with districts in Budapest or with neighbouring settlements. The district has direct or indirect impact on these developments.

The decisions within the third priority are exlusively under the authority of the district. The municipality has the largest impact on them.

On the fourth priority the district has very limited direct influence, because this is under the Budapest Airport's authority. However, the LAirA project and the investments connected to the mobility system have influence on them.

The four plus one priorities are aligned with the vision and objectives, with the aspects of sustainable urban mobility planning, as well as to influencing needs and doing environmental awareness raising. At last, the horizontal priority concerns the whole district facilitating the formulation of a(n) (environmental-)conscious local population.

- 1) Improving accessibility of the District 18 Budapest at macro- (international, domestic) and at micro-regional level;
- 2) Mobility development within the capital or beyond the boundary of the district;
- 3) Improving mobility connections within the the district;
- 4) Strengthening the sustainable mobility solutions of the Liszt Ferenc International Airport;
- 5) Horizontal priority: awareness raising and communication.

## **Determining intervention areas**

Based on the abovelisted priorities, the intervention areas can be clearly determined and mobility development directions can be designated within each priority under which the future measures and projects can be enlisted.

- 1) Improving accessibility of the District 18 Budapest at macro- (international, domestic) and at micro-regional level**
  - 1.1 Introducing an integrated public transport system and extending it beyond the city boundary
  - 1.2 Improving the public transport network connections of District 18, of the Eastern agglomeration and of the domestic network
  - 1.3 Facilitating the change of transport mode for the agglomeration commuters
  - 1.4 Road developments beyond the boundary of Budapest in which District 18 is concerned
  
- 2) Mobility development within the capital or beyond the boundary of the district**
  - 2.1 Improving urban public transport connections and services
  - 2.2 Promoting alternative-fuelled vehicles
  - 2.3 Promoting shared mobility use
  - 2.4 Providing safe and attractive bicycle connections
  - 2.5 Road developments of the XVIII. district
  
- 3) Improving mobility connections within the the district**
  - 3.1 Influencing external factors for mobility need
  - 3.2 Re-designing urban public space and creating quality public spaces
  - 3.3 Improving city logistics
  - 3.4 Developing cyclist routes and auxiliary infrastructure within the public space
  - 3.5 Improving traffic safety
  - 3.6 Improving parking management and infrastructure
  
- 4) Strengthening the sustainable mobility solutions of the Liszt Ferenc International Airport**
  - 4.1 Improving public transport links between Budapest downtown and the airport
  - 4.2 Improving the mobility processes in supplying the airport and internal traffic.
  
- 5) Horizontal priority: awareness raising and communication**

## Thematic measures

In this chapter, we describe the thematic measures, project initiatives under each intervention area, priority. Not all measures can be distinguished from others, therefore the strongest links are highlighted too.

### 1. IMPROVING ACCESSIBILITY OF THE DISTRICT 18 BUDAPEST AT MACRO-(INTERNATIONAL, DOMESTIC) AND AT MICRO-REGIONAL LEVEL

The following thematic measures that are of international and domestic interest and whose impact is much wider than the District 18. Priorities overarching administrative boundaries are implemented primarily based on governmental decisions. The District 18 has only very limited influence on them, though their impact on the mobility system of the area is considerable. The implementation of these measures can be fostered mostly via strong lobby activities.

#### 1.1 Introducing an integrated public transport system and extending it beyond the city boundary

ID	Measure	Other areas concerned
1.1.1	Establishment of a regional public transport organizer institution harmonizing urban and functional urban area transport	
1.1.2	Creating integrated ticketing system of BKK - MÁV - Volán and harmonizing their services	

##### 1.1.1 Establishment of a regional public transport organizer institution harmonizing urban and functional urban area transport

The Budapest Mobility Plan 2030 (draft version before adoption) formulates the package of „Efficient insitutional system” for the functional urban area formulates the need and task for an integrated transport organization for the area. The agglomeration traffic is integral part of the urban public transport, therefore it would be beneficial to handle the whole system together.

##### 1.1.2 Creating integrated ticketing system of BKK - MÁV - Volán and harmonizing their services

The Budapest Mobility Plan 2030’s package of „Efficient insitutional system” highlights the importance of integrated timetable, ticekting- and information system as a major task for the institution to be established in 1.1.1. Harmonized public transport system can provide high-quality service within the FUA of Budapest. This was the public transport system will be user-friendlier, the quality of service improves and the level of comfort of the passengers is rising within Budapest, to/from the municipality of Gyál, Vecsés, Üllő, Gyömrő, Dabas or Monor.

## 1.2 Improving the public transport network connections of District 18, of the Eastern agglomeration and of the domestic network

ID	Measure	Other areas concerned
1.2.1	Connecting Budapest Liszt Ferenc International Airport with railways	4.1
1.2.2	Developing railwayline #100	1.3
1.2.3	Refurbishment and development of the railwayline # 142, Kőbánya-Kispest - Lajosmizse - Kecskemét	1.3
1.2.4	Implementation of integrated passenger traffic information system and connected measures	1.1

### 1.2.1 Connecting Budapest Liszt Ferenc International Airport with railways

The main objective of this development is to integrate the airport into the domestic and international railway network, ease the traffic along the suburban section of the railwayline #100. This way, there could be a direct railway link to the majority of large Hungarian cities without reaching a head station in Budapest.

The suburban section on railwayline #100 can increase capacities for commuter traffic as well as an underground station could be built under the terminal buildings to make walking distances smaller.

### 1.2.2 Developing railwayline #100

Easing the suburban section of the railwayline #100 by building a new electrified double-track between Kőbánya-Kispest - Airport station - Monor, the capacity limit will be higher than the actual one for the commuter trains. Intermodality developments are necessary along the railwayline (P+R and B+R facilities, feeding bus lines) in the agglomeration and in the District 18. The capacity of the rolling stock shall be increased too, that will be realized by inaugurating KISS trains. The actual location of the train stations and stops is to be revised to serve better the needs of the commuters.

### 1.2.3 Refurbishment and development of the railwayline # 142, Kőbánya-Kispest - Lajosmizse - Kecskemét

The railwayline #142 Budapest - Lajosmizse - Kecskemét is located along the border of district 18 that is the only non-electrified railwayline in Budapest. Many of the stations are located in or in close vicinity of the District 18. The low quality of the railwayline makes its impact only limited in the commuter traffic, therefore its complex refurbishment and development is due. For this reason some of the stops and stations need relocation to follow the changing demand and to improve the intermodality of the stations (e.g. single platform use for train and bus etc.). Facilitating the change to sustainable transport modes and improving the infrastructure at the stations is vital: B+R, P+R, K+R facilities, real-time passenger information and making the stations barrier-free. The increase of capacities is

coming from the elimination of bottleneck and increase of seat capacities of the rolling stock. The refurbishment of the section Lajosmizse - Kecskemét and introducing service at least every hour including commuter fast trains.

### 1.2.4 Implementation of integrated passenger traffic information system and connected measures

The Budapest public transport has a dynamic passenger information system called the FUTÁR that has a good reputation among the users. At most of the stops, there is no digital screen to show the next vehicles to come. Moreover, neither the non-urban bus operators are included in the real-time system, nor the railways. It is vital to develop the FUTÁR with a wider integrated look on the public transport mobility services including the suburban services between the District 18 and neighbouring settlements.

### 1.3 Facilitating the change of transport mode for the agglomeration commuters

ID	Measure	Other areas concerned
1.3.1	Establishment of new P+R and B+R facilities and extension of the existing one	2.3
1.3.2	Establishment Ferihegy-Vecsés intermodal node	2.1, 4.2



FIGURE 9: B+R STORAGE FACILITIES AT THE RAILWAY STATION PESTSZENTLŐRINC

### 1.3.1 Establishment of new P+R and B+R facilities and extension of the existing one

One key element in creating livable urban environment is reducing the volume of traffic, namely the car use. Important measure to make people change mode coming from marginal or mobility poor areas by car or by bicycle to mobility the nodes where they could change to public transport. In the District 18 the along the railwayline #100 and #142 (e.g. at Ferihegy train stop) the capacity of existing P+R and P+R facilities need extension and new ones are to be created. These measures can lower the through traffic towards Budapest downtown.

### 1.3.2 Establishment Ferihegy-Vecsés intermodal node

New intermodal node to be established at the crossing of Üllői road - Main Road #4 - Lincoln road along the border of District 18 and the Municipality of Vecsés. This can be realized when refurbishing the Ferihegyi repülőtérre vezető road and the construction of the airport rail link. This improvement includes the exploration of the Airport City and presumes the extension of Tram #50 to the node as well as the reconstruction of Üllői road.

## 1.4 Road developments beyond the boundary of Budapest in which District 18 is concerned

ID	Measure	Other areas concerned
1.4.1	Complex development of the Ferihegyi Repülőtérre vezető road, and strengthening crossing connections in District 18	2.5
1.4.2	Developing missing road links in the micro region	2.5

### 1.4.1 Complex development of the Ferihegyi Repülőtérre vezető road, and strengthening crossing connections in District 18

Complex development of the Ferihegyi Repülőtérre vezető road between Határ road and Liszt Ferenc International Airport Terminal 1. The reconstruction includes the redesign of Gyömrői road too, reconstruction of the crossing, more frequent entry/exit points and the elimination of physical barriers.



FIGURE 10: FERIHEGYI REPÜLŐTÉRRE VEZETŐ ROAD

#### 1.4.2 Developing missing road links in the micro region

In order to provide good road accessibility of the economic areas between District 18, The municipality of Vecsés and Gyál, the road connections must be improved. The explored area strengthens the connection between the settlements and creates new routes in the region too such as along: Halomi road - Széchenyi street (Vecsés) and Alacskai road - Határ road (Vecsés - Gyál).

## 2. MOBILITY DEVELOPMENT WITHIN THE CAPITAL OR BEYOND THE BOUNDARY OF THE DISTRICT

The second priority presumes the cooperation with neighbouring districts and municipalities. On these developments the District 18 had direct or indirect influence. In Budapest issues, lobbying and influencing developments within the Budapest City Hall and relevant transport and urban development committees. As a results of the developments, the position and accessibility of District 18 improves in the region, whereas the locally departing - arriving and through traffic is diverted towards the sustainability modes.

### 2.1 Improving urban public transport connections and services

ID	Measure	Other areas concerned
2.1.1	Development and extension of tramline #50	1.1
2.1.2	Extension of tramline #42 to Gloriett-telep, and optionally to Pestszentimre	1.1
2.1.3	Revision of the existing buslines (routes, timetables) according to the needs of large employers and public institutions	1.1
2.1.4	Barrier-free trams and buses to the District 18	1.1
2.1.5	Developing facilities of public transport stop	1.3
2.1.6	Examining the introduction of demand-driven public transport services	

#### 2.1.1 Development and extension of tramline #50

Development of tramline #50 means the reconstruction of tracks and stops, platforms between Határ road and Béke square and the revision of stop frequency and changes to other lines. The extension of the tramline along Üllői road to the intermodal node (railwayline, new airport main gate, P+R etc.) is highly recommended. The extension shall be in line with the development plans of the area and the airport.

#### 2.1.2 Extension of tramline #42 to Gloriett-telep, and optionally to Pestszentimre

With the extension of tramline#42 the Havanna and Gloriett areas were linked with bound rail public transport and directly linked with the metroline M3. Further potential plan might be the extension of the tramine to Pestszentimre.



FIGURE 11: THE ENTRANCE OF GLORIETT LAKÓTELEP. THE SPACE FOR THE TRAM IS VISIBLE

### **2.1.3 Revision of the existing buslines (routes, timetables) according to the needs of large employers and public institutions**

Optimizing the public transport system according to the changing needs of the passengers is a recurring activity. The large employers and public institutions are among the most visited destinations everyday commuters, therefore their travel needs and habits are largely determining the system. Surveying their travel behaviour can help to re-organize and make the system more efficient, if necessary.

### **2.1.4 Barrier-free trams and buses to the District 18**

Barrier-free transport vehicles and stops provide equal right to the physically-disabled, elderly, young mothers with children to use the public transport. First of all, the stops and the vehicles have to be suitable for them. As an example, CAF trams will arrive to the tramline #50 that needs improvements along the line to make them accessible for everyone.

### **2.1.5 Developing facilities of public transport stops**

The public transport stops are important part of the mobility chain and has great impact on the user experience to keep the existing passengers and to attract new ones. Therefore increasing the level of comfort in the stops by providing weather-proof conditions, better street furniture, quality and barrier-free surfaces, real-time travel information etc.

### **2.1.6. Examining the introduction of demand-driven public transport services**

There are areas where public transport is far or really scarce. These mobility poor areas need better adaptable, flexible service based on the actual demand.

Examining the introduction of such system in the District 18 would increase the chances and the equality of the citizens living in those areas.

## 2.2 Promoting alternative-fuelled vehicles

ID	Measure	Other areas concerned
2.2.1	Procurement of electric, gas-fuelled or other environmentally-friendly buses	1.1
2.2.2	Deploying new electric, LPG and CNG filling stations	

### 2.2.1 Procurement of electric, gas-fuelled or other environmentally-friendly buses

On part of the bus fleet of Budapest is getting very old. In the South-Pest region the ratio of older buses with high-floored buses. The gradual renewal of the bus fleet shall be in line with the EU directives to lower such environmental impacts. This way the level of service should not differ from other parts of Budapest.

### 2.2.2 Deploying new electric, LPG and CNG filling stations

The Municipality of Budapest and the Hungarian government is planning to promote alternative-fuelled vehicle-use therefore in the deploying electric charging stations all around the city, including District 18.



FIGURE 12: ELECTRIC CHARGING STATION NEXT TO THE CITY HALL OF DISTRICT 18

## 2.3 Promoting shared mobility

ID	Measure	Other areas concerned
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2.3.1	Developing and extending the use-area of the BudapestBike (Bubi) public-bike sharing system and other environmentally-friendly shared mobility modes to the area of District 18	3.6, 4.2
2.3.2	Promoting carpooling (ridesharing)	3.6, 4.2
2.3.3	Promoting carsharing	3.6, 4.2

### **2.3.1 Developing and extending the use-area of the BudapestBike (BuBi) public-bike sharing system and other environmentally-friendly shared mobility modes to the area of District 18**

The coverage areas of the MOL Bubi public bike-sharing system. The gradual extension of the system has not reached the District 18 and other outskirts. It is advisable to deploy docking stations around larger transport nodes such as train stations etc. The public bike-sharing is suitable for the first and last mile trips in a larger travel chain. Private shared-mobility service providers are also on the market (e.g. Yellow Zebra, Donkey Republic, Lime, Blink City) with bikes, e-bikes, e-scooters, but non-of them reach the District 18 including the Liszt Ferenc International Airport. Supporting shared-mobility providers along the local needs is advisable helping the shorter trips within the district and to the large employers such as at Liszt Ferenc International Airport.

### **2.3.2 Promoting carpooling (ridesharing)**

The usual number of travellers in a car is just above 1. In order to increase efficiency, occupancy of car-use, the promotion of carpooling is advisable to help reducing the volume of commuters. The ridesharing fits to all types of areas (scarce, dense) when the destination is the same and parts of the trips can be shared. Large employers can play a role in this issues such as pilot project of the Budapest Airport with the oszkar.com service provder.

### **2.3.3 Promoting carsharing**

Car-sharing is getting more and more popular in Budapest and one car of this kind could help in avoiding the ownership of 5-6 other cars, reducing traffic. These zones do not touch the District 18, but with the gradual increase of the needs, outskirts and the airport will be involved in the areas. In the Budapest 18, dense residential areas, the airport could be a potential beginning for the market players to set sails.

## **2.4 Providing safe and attractive bicycle connections**

<b>ID</b>	<b>Measure</b>	<b>Other areas concerned</b>
2.4.1	Creating major cyclist corridors in District 18	3.4

2.4.2	Connecting the bicycle network with the neighbouring districts and settlements	3.4
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### 2.4.1 Creating major cyclist corridors in District 18

Bicycle connections of high importance can help the safe and fast travel of cyclists. Straight or radial roads help to lower travel time and to make cycling more attractive.

Major cyclist corridors:

- Ferihegyi Repülőtérre vezető road - Gyömrői road ;
- Along Üllői road between Határ road and Vecsés shopping center;
- Along Nagykőrösi road from Pestszentimre towards the centre and towards Gyál;
- Along Puskás Ferenc street - Csapó street - Barta Lajos street - Kinizsi Pál street.



FIGURE 13: THE BEGINNING OF THE BIKE ROAD ALONG FERIEGYS REPÜLŐTÉRRE VEZETŐ ROAD AT THE JUNCTION OF ÜLLŐI ROAD - MAIN ROAD #4

### 2.4.2 Connecting the bicycle network with the neighbouring districts and settlements

This measure supports the short and medium-distance biking within District 18 and to the neighbouring settlements to designate bicycle routes and link them to major transport destinations.

Recommended links to develop:

- Burma-railway axis along Vecsési road - Hunyadi János road - Kettős-Körös street - Vág street;
- Along Szentlőrinci road - Méta street;
- Along Dózsa György road - Majori road;
- Along Lakatos road - Harmat street;

- Along Maglódi road - Álmos street - Tünde street.

## 2.5 Road developments of the District 18

ID	Measure	Other areas concerned
2.5.1	Supervision of the road crossings from safety aspect	2.4, 3.5
2.5.2	Complex reconstruction and development of the Üllői road	
2.5.3	Building a road overpass between Lakatos road - Harmat street including pedestrian and cyclist connection	1.4
2.5.4	Improving accessibility of the northern part of Szemeretelep és az Üllői road (former barracks) by heavy duty trucks	
2.5.5	Realizing static and dynamic traffic management and information solutions	1.1

### 2.5.1 Supervision of the road crossings from safety aspect

Supervision of the road crossings, pedestrian and cyclist crossing in the District 18 in order to prioritize and to provide safe conditions to the weaker transport participants. This way the discrimination of the environmental-friendly modes at crossings (e.g. right of way, too long waiting times, bad visibility etc) can be eliminated too, and the general and the safety comfort of pedestrians and cyclists could increase.

### 2.5.2 Complex reconstruction and development of the Üllői road

Together with the development and extension of the tramline #50, the time has come to reconstruct and develop Üllői road with a complex view between Határ road metro station and Ferihegy-Vecsés intermodal node. This includes the complex redesign of the road (e.g. trees, bike path, green lines, parking places), renewal of stormwater management or the location of public transport stops.

### 2.5.3 Building a road overpass between Lakatos road - Harmat street including pedestrian and cyclist connection

Since the closure of Felsőcsatári road level crossing, there is no car traffic between District 18 and District 10 in the area. This key road connection is to be re-established between Lakatos street and Harmat street through a long overpass. It provides connection to the pedestrians and to the cyclists too.



FIGURE 14: THE BEGINNING OF ALSÓ ERDŐSOR TODAY

#### **2.5.4 Improving accessibility of the northern part of Szemeretelep and the Üllői road (former barracks) by heavy duty trucks**

Improving the accessibility of the area by heavy duty trucks enclosed by the Burma-railway line and the railwayline #100 gives opportunity for developing local economy as well as in the area of former barracks at Üllői road.

#### **2.5.5 Realizing static and dynamic traffic management and information solutions**

Complete renewal for the signage system of the roads with new, static and dynamic boards in Budapest showing traffic information along the main roads.

### 3. IMPROVING MOBILITY CONNECTIONS WITHIN THE THE DISTRICT

The third thematic priority includes such measures on which the municipality has close to complete authority, predominantly internal transport connections within the District 18. The following solutions help the municipality to improve the mobility within its area focusing on sustainable mobility modes.

#### 3.1. Influencing external factors force for mobility need

ID	Measure	Other areas concerned
3.1.1	Elaboration and implementation of SUMP for Pestszentlőrinc-Pestszentimre and its microregion	1.1
3.1.2	Halting the increase and reducing the need for mobility with the help of regulations in urban development	1.1
3.1.3	Creating capacities and local institutions for mobility planning and implementation	

##### 3.1.1 Elaboration and implementation of SUMP for Pestszentlőrinc-Pestszentimre and its microregion

A strategy incorporating the long-term goals is the prerequisite of developing a sustainable and efficient mobility system in the District 18 and what steps, measures need to be implemented to reach them. The SUMP (Sustainable Urban Mobility Plan) is an ideal tool for that, because it is such a planning tool, that handles all forms of mobility integrated for the whole area and for its connections with the neighbouring microregion in order to create a liveable city that is focused on the needs of citizens.

##### 3.1.2 Halting the increase and reducing the need for mobility with the help of regulations in urban development

Conscious regulation of the land-use the process of urban sprawl - that creates excessive mobility demand and air pollution - can be stopped or reduced. In order to counterbalance the process, densification of urban sub-centres or urban function could be necessary. The process of urban planning and design shall be carried out based on the planned and expected future traffic.

##### 3.1.3 Creating capacities and local institutions for mobility planning and implementation

To carry out the activities drafted in 3.1.1, the capacities of the municipality shall be increased by setting up such a small organization, department that is capable of understanding and conducting the whole process from handling of the problems to the implementation of the measures.

### 3.2 Re-designing urban public space and creating quality public spaces

ID	Measure	Other areas concerned
3.2.1	Analysis of the pedestrian infrastructure and making it barrier-free	3.5
3.2.2	Reducing the isolation effect of the road and the railway infrastructure by improving pedestrian and cyclist connectivity	1.2
3.2.3	Extending residential areas and Tempo 30 zones and creating new ones	3.5
3.2.4	Revising the traffic order around large institutions inducing high traffic	3.5

#### 3.2.1 Analysis of the pedestrian infrastructure and making it barrier-free

Every trip starts and finishes with walking. This is an inevitable form of mobility, and its significance is often underestimated, although in good conditions people tend to choose this natural mobility mode. A pedestrian infrastructure action plan shall be elaborated based on overall analysis prioritizing areas and completing barrier-free conversion and helping the crossing of streets.

#### 3.2.2 Reducing the isolation effect of the road and the railway infrastructure by improving pedestrian and cyclist connectivity

The railwaylines running in District 18 separating heavily the urban structure and lower the accessibility, in most of the cases hinder urban development. The goal is to improve the safe, barrier-free connectivity of the separated areas on foot, by bicycle, by public transport and by car. These areas are located along the railwayline #100 and #142.

#### 3.2.3 Extending residential areas and Tempo 30 zones and creating new ones

Traffic calmed residential areas are more comfortable for all users than the Tempo 30 zones. Especially around public educational institutions it is worth to introduce such traffic calmed zones to save the weaker players of mobility. Along subordinate roads of the neighbourhoods introduction on 20 or 30km/h speed limit might be beneficial or by extending the Tempo 30 zone system.

#### 3.2.4 Revising the traffic order around large institutions inducing high traffic

Revising road traffic order around large institutions inducing large traffic can lead to improve the conditions for the use of sustainable mobility modes (walking, cycling, public transport), while curbing car-traffic around e.g. schools, market, sports hall, shopping mall, city hall, train station etc. in order to keep the areas safe and health.

### 3.3 Improving city logistics

ID	Measure	Other areas concerned
3.3.1	Developing concentrated places of (un)loading	
3.3.2	Promoting consolidation centers, neighbourhood consolidation points and alternative last mile solutions	
3.3.3	Revising the regulatory framework for the logistics, loading system in connection with local commercial and industrial activities.	3.1, 3.6

### 3.3.1 Developing concentrated places of (un)loading

Increasing the number of concentrated loading spots and testing intelligent loading spots. The goal is to regulate the way of (un)loading in densely built-in areas, subcenters. This requires the increase of loading spots, while introducing mixed use parking-loading spots and testing intelligent elements.

### 3.3.2 Promoting consolidation centers, neighbourhood consolidation points and alternative last mile solutions

The last mile of of cargo delivery means the last short section of the delivery process (few kilometers) from the producer, whole sales to the end-user and this section is responsible for considerable amount of pollution. The amount of cargo delivery is increasing rapidly throughout the world, therefore the need for using cleaner alternatives for the last mile (bicycle, cargobike, e-car, walking) and the need for creating consolidation centers and points to make the systems more efficient.

### 3.3.3 Revising the regulatory framework for the logistics, loading system in connection with local commercial and industrial activities.

Revising the Freight Transport Strategy for Budapest to lower the amount of freight transport and better align with the number of permission.

## 3.4 Developing cyclist routes and auxiliary infrastructure within the public space

ID	Measure	Other areas concerned
3.4.1	Developing intra-district cycling routes	2.4, 1.3
3.4.2	Opening one-way streets to the two-way cyclist traffic	2.4
3.4.3	Deploying bicycle racks	3.6

3.4.4	Improving the cyclist informaton system (boards, maps) in the public space	
3.4.5	Improving auxiliary functions, conditions for cycling	

### 3.4.1 Developing intra-district cycling routes

Bicycle is the best transport mode for short trips within the district. Under safe conditions, more and more people will use this transport mode, therefore the improving the conditions for cycling along the following roads is recommended:

- Pestszentimre és Pestszentlőrinc összekötése a Halmi-erdőn keresztül,
- Szálfa street - Dózsa György street,
- Fiume street / Kőrös street - Vág street,
- Nefelejcs street - Szent László street,
- Honvéd street,
- Álmos street - Frangepán street,
- Alacskai road,
- Nagybánya street - Királyhágó street - Nemes street - Dózsa György street,
- Lakatos road -Bartók Lajos street,
- Lakatos road - Felsőcsatári road,
- Baross street,
- Városház street - Thököly road,
- Cziffra György street - Gilicze square - Cziffra György street,
- Dráva street - Száva street - Halomi road.

### 3.4.2 Opening one-way streets to the two-way cyclist traffic

Opening one-ways streets for two-way cyclist traffic can significantly shorten the trips by bicycle. The following streets are proposed to open and to investigate the opening of further one-way streets in District 18:

- Baross street, Üllői road és a Kossuth Lajos street között,
- Vasút street jelenleg egyirányú szakaszán a Nemes street és a Vezér street között,
- Álmos street - Frangepán street.



FIGURE 15: THE ONE-WAY **ÁLMOS STREET**. THERE IS A NEED FOR OPENING IT FOR CYCLISTS IN BOTH WAYS

### 3.4.3 Deploying bicycle racks

One of the most important element of a bicycle friendly city is the care about bicycle parking places or bicycle racks at destinations. Around large institutions that induce large traffic it is recommended to deploy bicycle racks at visible public space used for short- or mid-term parking.



FIGURE 16: THE ENTRANCE OF THE CITY HALL OF DISTRICT 18 WITH A CAR PARK BUT WITHOUT PROPER AND SAFE BICYCLE RACKS

### 3.4.4 Improving the cyclist informaton system (boards, maps) in the public space

Cycling is totally competitive with car-used for short distances within the range of 5 km in urban environment, though it has no significantly distadvantage at longer distances. During cycling electric devices (e.g. GPS) are less frequently used,

therefore in the orientation cyclists often rely on route signs, information boards or on maps in order to find the way especially until the bikers learn the route or for newcomers, visitors.

### 3.4.5 Improving auxiliary functions, conditions for cycling

Deploying auxiliary infrastructure in the public space to make cycling more comfortable and support those living an active lifestyle e.g. drinking wells, self-repair spots, pumping stations, etc. In addition, public institutions shall have such freely accessible changing rooms with shower, where workers can easily change to active lifestyle.

## 3.5 Improving traffic safety

ID	Measure	Other areas concerned
3.5.1	Protecting the weaker mobility parties	2.4, 3.2
3.5.2	Road traffic calming	
3.5.3	Improving safety for public transport	
3.5.4	Improving safety in public space	3.2

### 3.5.1 Protecting the weaker mobility parties

Some weaker parties of the society e.g. pedestrian, cyclists, micromobility users, children, elderly are more prone to danger caused by road traffic and cannot equally protect themselves, therefore all efforts are necessary to protect them at crossings (visibility, speed limit, cross-sectional redesign etc.) or in other public areas where car traffic shall be calmed or totally banned.

### 3.5.2 Road traffic calming

With the increase of the maximum speed, the risk of accident increases too that is especially dangerous for the vulnerable, weaker parties. The traffic calming of specific road sections with total or partial time limitation. At lower level roads than main road, the speed limit shall not increase 30 km/h, but lower speed is totally justifiable in traffic calmed residential areas.

### 3.5.3 Improving safety for public transport

One key element for the attractiveness of public transport is the subjective safety while using it during waiting and travel. Therefore the clean, safe public transport stops and safe inner environment for vehicles including cleanness, crowdedness can increase the trust and safety of public transport.

### 3.5.4 Improving safety in public space

People tend to use sustainable transport modes including walking, public transport if they feel comfortable and safe in the public space. Subjective safety feeling differs according to age, gender etc. but there are such urban design elements that can contribute to the overall safety feeling of people and as a result they spend more time in the public space thereby inducing safety feeling others are the public space will not be desolate, but full of life. Bicycle racks, public transport stops, sidewalks, green infrastructure need well-visible, well-lighted, well-kept open spaces to contribute to the well-being of the local residents.

### 3.6 Improving public parking management and parking infrastructure

ID	Measure	Other areas concerned
3.6.1	Introduction of public parking management	
3.6.2	Designating highlighted parking space for shared mobility modes in densely populated areas and at public institutions	3.2

#### 3.6.1 Introduction of public parking management

The existence of a parking management system helps to keep a good balance of demand and offer. The introduction of the system primarily benefits areas with parking issues (e.g. Havanna-lakótelep), but it can be gradually extended to other parts of the district later on. Land-use and public space use conflicts can be better solved by regulated parking management tools as well as the green space - parking car conflict can be mitigated.

#### 3.6.2 Designating highlighted parking space for shared mobility modes in densely populated areas and at public institutions

Shared-mobility modes can reduce car-ownership, therefore these modes are given extra attention such as by designated, well-located parking places. Shared-mobility modes such as car-sharing, public-bike sharing or micromobility tools are recommended to be deployed close to the entrance of blocks of flats, public institutions or among the best places in car parking lots

#### 4. STRENGTHENING THE SUSTAINABLE MOBILITY SOLUTIONS OF THE LISZT FERENC INTERNATIONAL AIRPORT

The Liszt Ferenc International Airport is a very strong player at national economy level, a large employer and a great intermodal hub at once.

The private operator company of the airport is participating in the LAirA project that is led by the District 18 of Budapest showing dedication to develop the landside accessibility of the airport more sustainable. The airport handles 15 million passengers (2018) a year, its economic significance is inevitable. Nearly 10000 people, the population of a small town work there 0-24, and such intensive operation has environmental footprint while having clear benefits for the national economy too. The airport has a distinguished importance that is why it is given an additional priority.

Although, the District 18 has low impact on the development of the private airport operation company, but in some fields they could act for common goals such as in an economic cluster in which the measures to improve the environmental-friendly accessibility of the airport fits well. The measures are to improve the accessibility and to make better use of the existing capacities and promote the sustainable mobility modes for the passenger and for the workers at the airport. The measures shall be embedded to different levels of strategic plans and planning such as for the Budapest Airport, Hungarian government, domestic and regional plans, plans of the capital, the district etc. The proposed measures are the following:

##### 4.1 Improving public transport links between Budapest downtown and the airport

ID	Measure	Other areas concerned
4.1.1	Improving bus connection of the airport with Budapest downtown and the surrounding micro region	1.1, 1.2
4.1.2	Creating a sound connection between the planned train station and the terminal buildings	

##### 4.1.1 Improving bus connection of the airport with Budapest downtown and the surrounding micro region

Bound-rail transport can only serve small part of the airport near Ferihegy railway stop, whereas the public transport is dominated by the buses. The increased passenger numbers require the more frequent connection as well as direct connection to the downtown at night too. Many regional bus lines are passing by the main road by the airport, but many avoid the terminal 2, that could primarily help the workers and the the passengers too in the area. It is proposed to revise the routes and the timetables for the buses to better integrate terminal 2 into the regional network.

#### 4.1.2 Creating a sound connection between the planned train station and the terminal buildings

A train station is planned to connect the airport to the domestic railway network. The train station is planned a longer walking-distance from the terminal buildings that requires a comfortable physical connection. This includes barrier-free accessibility, service different passenger needs (e.g. trolleys), good way-finding system, static and dynamic integrated information system and easy ticketing system among many others.

#### 4.2 Improving the mobility processes in supplying the airport and internal traffic

ID	Measure	Other areas concerned
4.2.1	Building new airport gate	
4.2.2	Creating a roundabout in front of terminal 2	
4.2.3	Building a multi-storey car park at terminal 2	
4.2.4	Priorizing sustainable mobility modes	2.3
4.2.5	Refurbishment and development of intra-airport road network	
4.2.6	Cycling development at the airport	
4.2.7	Deploying network of e-recharging points	
4.2.8	Environmental-friendly vehicle fleet	
4.2.9	Promoting carpooling among airport workers	
4.2.10	Promotion of micromobility modes at the airport	
4.2.11	Developing air-rail freight logistics	
4.2.12	Improving way-finding system	
4.3.13	Elaboration of workplace mobility plan	

##### 4.2.1 Building new airport gate

The growing airport requires new entrance gate for workers that is part of the reorganization of the intra-airport road network. It will be located at the double-roundabout right that border of District 18 in Vecsés, next to a potential intermodal nodes. This will enable the higher concentration of the workers' mobility flow through the new gate.

##### 4.2.2 Creating a roundabout in front of terminal 2

As a result of cargo city, new hotel and a planned multi-storey car park, the induced traffic has an increasing share of freight traffic. To sustain a steady flow of safe road transport, a roundabout is being built in front of terminal 2.

#### **4.2.3 Building a multi-storey car park at terminal 2**

The majority of the passenger landside transport is done by private cars (including taxis). The parking lots are now stretching around the terminal building at long walking distance from the terminal and the parking lots experience shortage of capacities that triggers the space efficient extension of the parking capacity close to the terminal building.

#### **4.2.4 Priorizing sustainable mobility modes**

The use of environmental friendly modes can be made more comfortable, if the waiting, parking places are closer to the entrance of the terminal building including local, regional and international buses, shared mobility modes, electricity and other alternative energy sources fuelled cars and taxis.

#### **4.2.5 Refurbishment and development of intra-airport road network**

The economic growth is changing the internal structure of the airport services that needs more coordination and planning. The intra-airport traffic is based on road transport and the road infrastructure is about to be refurbished and extended to meet the needs of the internal development of the airport. That contains better internal connections to new buildings, refurbishment of the roads and to concentrate more the worker traffic to fewer number of gates, such as to the new planned gate.

#### **4.2.6 Cycling development at the airport**

Most area of the Budapest Airport is hardly accessible by bicycle, whereas inside the airport area workers mostly use cars. Parallel to the intra-airport road network development, a bicycle road network is being developed to create safe and fast cycling connection between the buildings. Furthermore, bicycle racks will be deployed and Budapest Airport will establish bike-sharing for intra-airport use that can be parked to designated areas. Beyond the infrastructural development, it is worth to raise the awareness of the workers by organizing events, information brochures e.g. how to use the new system and what are the airport rules to keep etc. The intra-airport bicycle road network will connect the old and new entrance gates with the terminal 2. The airport would like to connect the terminal buildings and the gates with the surrounding bicycle road network to foster commuting by bicycle.

#### **4.2.7 Deploying network of e-recharging points**

The vehicles of the Budapest Airport and of services providers at the airport will be gradually replaced to electric ones, however, crucial point is the existence of the charging infrastructure that need development on the landside and the airside of the airport. The careful planning and deployment of the charging infrastructure will foster the spread of electromobility.

#### **4.2.8 Environmental-friendly vehicle fleet**

On the long run, the Budapest Airport and other service providers will change their vehicle fleet to electric or to other alternative propulsion. Environmental aspects in case of future procurements will play a more important role such as for tendering minibus transfer, public transport, taxi service providers, but also for the own fleet.

#### **4.2.9 Promoting carpooling among airport workers**

The LAirA project revealed, that the majority of workers commute by private car that has considerable environmental impact and takes up plenty of free space. The nearly 10000 worker at the airport makes up a critical mass, that worth considering the use of an own, carpooling system. This could help to reduce the number of individual commuters by car, and the workers could share rides with other workers reducing the unnecessary environmental impact and the amount of space required for parking. The Budapest Airport will introduce a closed carpooling system that will be available only for the workers at the airport.

#### **4.2.10 Promotion of micromobility modes at the airport**

The development of intra-airport bicycle infrastructure enables the use of micromobility modes such as e-scooter that helps avoiding excessive intra-airport car use.

#### **4.2.11 Developing air-rail freight logistics**

The airport's cargo development have an effect on the air-rail cargo capacity too. The share of air-rail cargo transfer can be increased by extending capacities namely the renewal of existing tracks and their extension with auxiliary infrastructure for (un)loading.

#### **4.2.12 Improving way-finding system**

The improvement of the way-finding system primarily supports the better orientation passengers within the terminal building and among the airport buildings with Hungarian and English information boards, self-explaining pictograms and colours.

#### **4.2.13 Elaboration of workplace mobility plan**

Large employers, significant economic players such Budapest Airport and the companies operating at the venue of the airport are proposed to prepare a workplace mobility plan to oversee mobility patterns, their economic and environmental impact. Building on the plan, concerted actions, investments can influence the modal split, while the awareness raising activities can be better targeted.

## 5. HORIZONTAL PRIORITY: AWARENESS RAISING AND COMMUNICATION

The fifth, horizontal priority suits to the integrated urban development strategy for Pestszentlőrinc-Pestszentimre. This is a key priority facilitating the formation of a(n environmental) conscious community, the individuals will have a broader information to make better, more sustainable decisions.

ID	Measure	Other areas concerned
H1	Mobility awareness raising at elementary and high-schools	
H2	Awareness raising campaigns to support sustainable urban mobility	3.1
H3	Fostering the elaboration of workplace and institutional mobility plans in the district at institutions and at large employers	3.1, 4.2
H4	Procurement and operation of a municipal and institutional bicycle fleet	
H5	Procurement of an environmental friendly municipal car fleet	
H6	Creation of a municipal online mobility platform	3.1

### H1 - Mobility awareness raising at elementary and high-schools

The awareness raising and education of the new generation influences a lot their future modal choice, lifestyle they choose. The goal is to bring up safely and consciously travelling young people, by teaching them how to use sustainable transport modes, learn the traffic rules, choose consciously the transport modes. Beyond awareness raising at school, free-time activities accompanied by parents or teachers can play an exemplary role for the youth.

### H2 - Awareness raising campaigns to support sustainable urban mobility

The majority of the commuters in the outskirts choose the car. With the help of funny and creative campaigns to promote sustainable mobility modes on the contrary to car use. Specific campaigns can address better workplaces, institutions and the citizen according to the local needs.

With the help of new ICT solutions, the younger generations can be addressed better with help of gamification (challenges, competitions etc.) process, they can learn positive mobility patterns and habits that can divert them for unnecessary car use. Even though the ICT technologies are getting widespread, the printed materials for awareness raising and educational materials still play a considerable role.

### **H3 Fostering the elaboration of workplace and institutional mobility plans in the district at insitutions and at large employers**

The goal of this measure to think about the commuting, mobility of the workers, students in a systematic way and to foster the use sustainable mobility modes. First, mapping the mobility patterns, based on the results providing solutions backed by a strong communication campaign.

### **H4 - Procurement and operation of a municipal and institutional bicycle fleet**

Many workers of local institution tend to live closer to their workplace only few kilometers from their workplace. One way to support their commuting is by having a bicycle fleet that stays at their disposal to use. E-bikes or pedelecs could be part of the fleet depending on some specific needs (e.g. elderly).

### **H5 - Procurement of an environmental friendly municipal car fleet**

The exemplary role of a municipality is inevitable in showing clean, less polluting mobility solutions such as replacing petrol-fuelled car fleet to electric or other cleaner ones. The price of alternative fuelled cars is still higher than conventional ones, but gradual changing of the fleet can help in the awareness raising activities.

### **H6 - Creation of a municipal online mobility platform**

Many service providers play a role in the mobility. The high number of stakeholders communicate on their own channels. The creation of a municipal platform can help to collect all municipal mobility related issues and service providers to one platform in which citizens of District 18 can inform about mobility modes but with focus on sustainable mobility.

#### 4. CONCLUSION AND NEXT STEPS

This study on the long term mobility strategy for the Municipality of Budapest Főváros XVIII. District Pestszentlőrinc - Pestszentimre can serve as a strong basis for future sustainable urban mobility plan and action plan, as well as to the revision of the integrated urban development strategy. Deeper analysis could not be carried out within LAirA project, however, revising and building on existing strategic plans could help to determine the major directions in which the District 18 shall develop its mobility system on the long- and mid-term.

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## ANNEX 1 – MEASURES CONNECTED TO BUDAPEST LISZT FERENC INTERNATIONAL AIRPORT

### Public transport development

- Establishment of a regional public transport organizer institution harmonizing urban and functional urban area transport;
- Creating integrated ticketing system of BKK - MÁV - Volán and harmonizing their services;
- Connecting Budapest Liszt Ferenc International Airport with railways;
- Creating a sound connection between the planned train station and the terminal buildings;
- Developing railwayline #100;
- Implementation of integrated passenger traffic information and connecting measures;
- Establishment of new P+R and B+R facilities and extension of the existing one;
- Establishment Ferihegy-Vecsés intermodal node;
- Development and extension of tramline #50;
- Revision of the existing buslines (routes, timetables) according to the needs of large employers and public institutions;
- Barrier-free trams and buses to the District 18;
- Improving bus connection of the airport with Budapest downtown and the surrounding micro region;
- Procurement of electric, gas-fuelled or other environmentally-friendly buses.

### Road development

- A complex development of the Ferihegyi Repülőtérre vezető road, and strengthening crossing connections in District 18;
- Complex reconstruction and development of the Üllői road;
- Building new airport gate;
- Creating a roundabout in front of terminal 2;
- Building a multi-storey car park at terminal 2;
- Realizing static and dynamic traffic management and information solutions;
- Deploying new electric, LPG and CNG filling stations;
- Promoting carpooling (ridesharing);
- Promoting carsharing;
- Promoting carpooling among airport workers.

### Soft mobility mode development közlekedési módok fejlesztése:

- Creating major cyclist corridors in District 18;
- Analysis of the pedestrian infrastructure and making it barrier-free;
- Reducing the isolation effect of the road and the railway infrastructure by improving pedestrian and cyclist connectivity;
- Improving the cyclist information system (boards, maps) in the public space;
- Improving auxiliary functions, conditions for cycling;

- Developing and extending the use-area of the BudapestBike (BuBi) public-bike sharing system and other environmentally-friendly shared mobility modes to the area of District 18.

#### **Freight transport**

- Developing air-rail freight logistics.

#### **Institutional, strategic background**

- Establishment of a regional public transport organizer institution harmonizing urban and functional urban area;
- Elaboration and implementation of SUMP for Pestszentlőrinc-Pestszentimre and its microregion;
- Fostering the elaboration of workplace and institutional mobility plans in the district at institutions and at large employers;
- Creation of a municipal online mobility platform;
- Elaboration of workplace mobility plan.