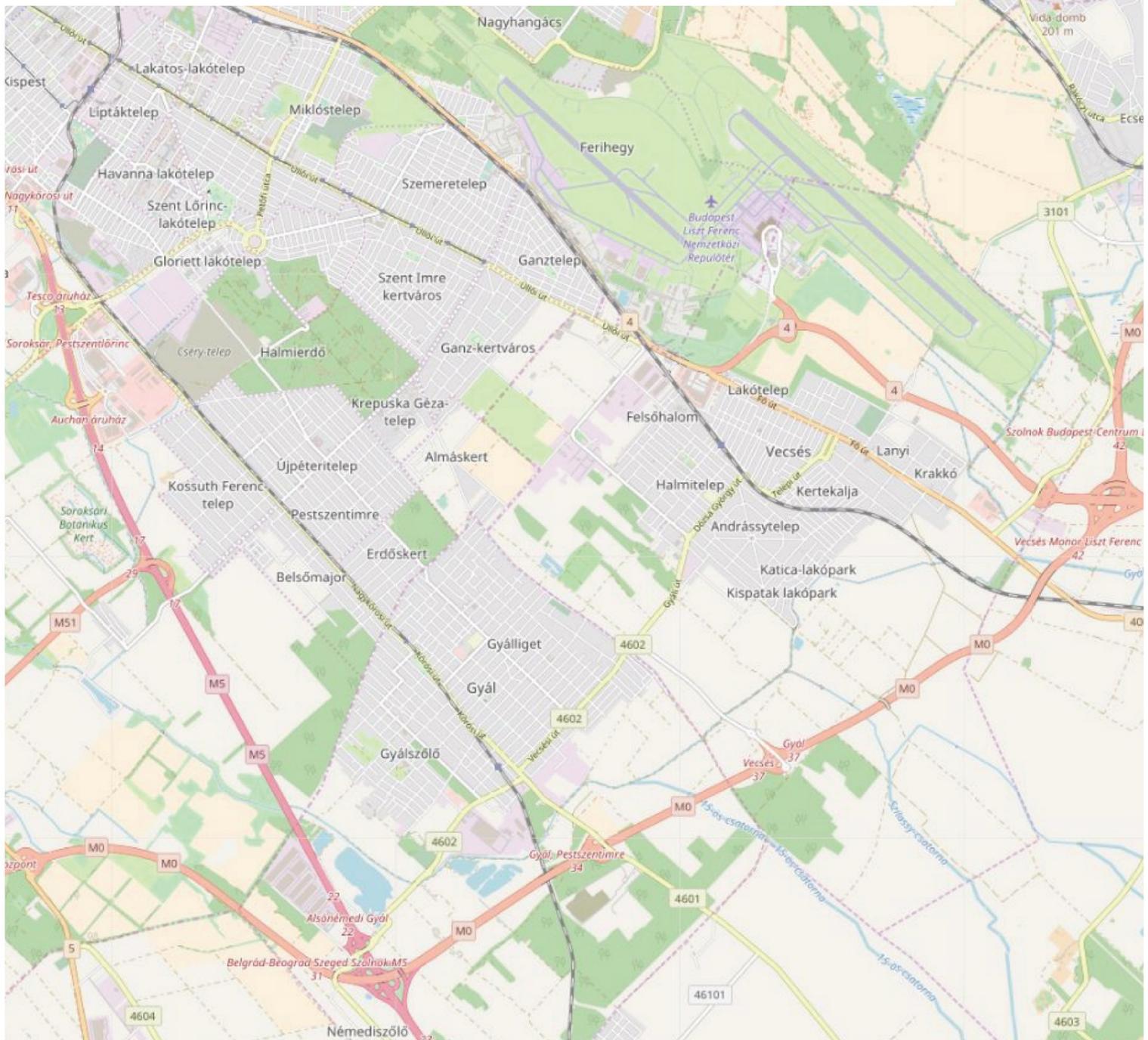




# SULPITER FUA (Functional Urban Area) report

## Processing and evaluation of surveys and questionnaires from Budapest and Vecsés

### Executive summary





## Executive summary

### 1 Goal

This paper summarizes the report generated from the project Sulpiter's evaluation of surveys and questionnaires of retail shops and logistics service providers conducted in the FUA (Functional Urban Area) of Budapest and Vecsés. The goal of the project is to obtain information on the urban freight processes, infrastructure and its stakeholders in the area.

The retail questionnaires concerning the demand side of the mentioned logistics processes potentially contain 165 questions. This number could deteriorate depending on the context. The main categories were the following:

- general questions concerning the units,
- potential external warehouses,
- potential own fleet,
- suppliers, goods reception,
- potential delivery towards customers, and
- issues, suggestions.

The number of questionnaires to be filled out was determined based on the population of each district of Budapest (and in addition, Vecsés), and the number of firms of interest located inside them. District XVIII. and Vecsés is overrepresented because they were the project leaders. Altogether 381 questionnaires were gathered from the demand side.

The 3<sup>rd</sup> party logistics service provider surveys concerning the supply side featured the same topics, but with different methods. The answers were categorized so they could be compared to the demand side. 10 logistics service providers were surveyed from the FUA. The low number of surveys means that the answers can be used to get a notion of the supply side of the urban freight situation, but their statistical relevance is little. Regardless, since major companies participated in the survey, their answers can mean more – on the demand side, smaller units were questioned, units of multinational companies seldom made it to our list.

The following tasks were undertaken on the filled-out responses before further evaluation:

1. The data were organized in MS Excel.
2. The data were cleaned, sorted and uniformed.
3. The data were consolidated.

Statistical evaluations were carried out on the database with MS Excel and SPSS software. All questions were marked with the number of answers given. Quantitative and qualitative tags were given to each question. Descriptive statistics were executed on the quantitative questions, the main parameters (mean, deviation, median, mode, minimum, maximum, range) can be seen on the Excel file and in the full report. Appropriate bins were made where necessary. The qualitative questions were evaluated with regard to the context. The categories and diagrams, and all other data can be found in the Excel file and in the full report.

## 2 Demand units

### 2.1 Units

The potential set of units to question included retailers and wholesalers of all kinds, HoReCa units, and the actual set of units questioned was very heterogenous and contained the majority of the available unit types. Notable categories were “Restaurants, bar, café, pastry”, “Food & beverage” and “Clothing and shoes retail”.

All questioned units reported at least one employee. Median and mode were both 2 people, the mean was drawn higher by few larger units. The results are skewed to the left because of this, and this is also the case with several other questions.

Size of the shop floor is also well represented by the median and mode, 40 and 30 m<sup>2</sup>, respectively. The mean value was drawn higher again by few larger units.

### 2.2 Warehousing

22% of the units does not have room to store items inside, the others have an average of 21 m<sup>2</sup> storage space. Despite this, only 14% has access to external warehouses. Most of these (59%) are located inside the FUA, and have a mean distance of 29 km to the unit. Second external warehouses tend to be further away, even abroad. No instance of a third external warehouse was registered. The area of these warehouses differs largely, but the knowledge of the responders was not precise enough on this subject.

### 2.3 Fleet

39% of the responders has a fleet (79% of this is owned, only 2% leased). 48% of it is passenger car, 23% van (under 3,5 tons of gross vehicle weight, GVW), but there are some cargo-bikes, motorbikes, heavy goods vehicles and articulated trucks mentioned as well. The specific size of the fleet is only one vehicle (median and mode), the maximum was 15 vehicles.

79% of these vehicles is powered by internal combustion engines (ICE), mostly diesel engines. 3% electric cars and less than half percent hybrids were registered.

Environmental classification could not be precisely obtained, but the answers showed the largest category was EURO-5, which is rather surprising considering these vehicles were made after 2010, meaning they are half the age of the average Hungarian vehicle.

The usual space where the vehicles of the own fleet unload at the units is public parking area (71%). 19% can unload in private space, 7% can only do it in an illegal manner (bus stop, sidewalk, double parking). Only the rest can use public loading areas. At the external warehouses, 74% uses private space, 21% public parking. 5% still unloads illegally.

### 2.4 Supply

Most units use the services of only a few suppliers, an average of 5. However, the goods supplied by them is heterogenous.

The inbound goods can arrive in three categories (based on Incoterms):

- Delivery Duty Paid (DDP, the transportation of the goods to the units is the risk and cost of the supplier),

- Ex Works (EXW, the transportation of the goods to the units is the risk and cost of the units), and
- Off-truck, sales directly from the vehicles.

About a third of the supplies is EXW, two-thirds are DDP, and minimal Off-truck. 39% the mode is determined jointly by both supplier and unit, 38% determined by the unit only, and 23% the supplier only.

39% of the supplies was done by a 3<sup>rd</sup> party logistics provider, including multinational companies e.g. GLS, DPD, DHL, Hungarian enterprises e.g. Waberers, MPL and SMEs. Express couriers were only used in 13% of the cases. Almost all supplies target the unit itself, not an external warehouse.

75% of the supplies has a frequency of a week or more, and only 12% of them can be considered daily supplies.

Compared to the units' own fleet, the suppliers unload in a different manner. The ratio of illegal parking is 38%, much higher than in the case of the own fleet, and private and public parking spaces are less used.

47% of the supplies comes in boxes, but a lot of other unit load types occur, like pallet, crate, shrink film. Most goods have, in accordance with their unit loads, small dimensions but with high deviations. 40% of them are under 20 kg, meaning manual material handling. The other part is handled by some equipment (hand pallet stacker) or machine (forklift truck).

Few responders could identify peak periods, most of them informed us of yearly seasonalities (mainly the summer months and December). Daily peak intervals usually take place between 9:30 and 12:00, even though the preferred time of some units would be early in the morning between 5 AM and 9 AM or between 12 AM and 4 PM. But this preference represents just a minority, and 41% is actually satisfied with the current times. 20% can imagine a scenario of night deliveries instead of the present situation, so it is a rather far cry.

The duration of the goods reception is as important as the timing, 25% of it takes more than 20 minutes (including material handling, inspection and administration). The average supply has 11 unit loads.

The vehicles used by the suppliers are rather vans and trucks, not cars like in the case of own fleet.

## 2.5 Deliveries

Only 23% of the responders delivers its goods to the customers, the others only sell them at the store. 56% of the deliverers uses its own vehicles, mainly passenger cars. 81% of the deliveries start at the shop, not at an external warehouse. 54% of the trips occur weekly or monthly, and even so these trips mostly reach one or two customers, only 14% reach more than 5 destinations. The destinations can be found inside the FUA.

## 2.6 Issues, suggestions

30% of the responders has no issues to mention about logistics, claiming all is well. Those who do have problems with the accessibility of the loading points (either physically or legally), or often arrive with loaded vehicles just to realize that the loading area is occupied by a passenger car (which is illegal), or would change the timing of the supplies or the process of the goods reception. At least 10% of the problems led to illegal activities.

Two-thirds of the responders suggested something to these issues. These included changes to the layout of the loading areas, to the regulations, the time of supplies etc.

### 3 Logistics providers

10 surveys have been made with 3<sup>rd</sup> party logistics service providers. 7 of these are CEP (courier, express, parcels) companies and 3 are carriers. 5 of these firms operate from the Liszt Ferenc International Airport, 3 from Budapest and 2 from Vecsés. 9 operates as a limited liability company and one as a (private) corporation.

These companies mainly have a fleet of vans (under 3,5 tons GVW), but also have heavy trucks as well. All of them have at least 10 vehicles. They are mainly powered by diesel engines, rarely petrol and in one case an electric motor. Most have EURO-4 and EURO-5 as environmental classification, but in some cases, they could not answer this question. This coincides with the answers obtained from the demand side questionnaire.

During the pick-up and delivery trips, these providers stop by at plants, warehouses, retailers. These usually start at a warehouse and end at their own site.

The goods transported are various (they are CEP companies), but the type most mentioned is electronics & computers – these occur in every survey.

Obviously, all participants deliver on a daily basis, (more than once, daily in a lot of times), and their overall cargo weight is almost always more than 100 kg, often heavier than 1 ton. The deliveries take more than 20 minutes in every time.

The usual unloading space at the destinations in the case of the 3<sup>rd</sup> party logistics service providers (somewhat similarly to the answers obtained from the units) are the sidewalk and double parking, but the overall illegal ratio is higher. This eliminates the possibility of biased answers got from the units and reveals that unloading in urban areas is indeed an existing issue. A bit higher percentage than the units disclosed (30%) has told us they do night deliveries.

Multiple issues have been mentioned, namely the lack of unloading space, the bad accessibility of unloading space, and the lack of coordination among destinations (this way the number and length of the trips is worse than ideal). The duration of the goods reception is also an issue, as the units have told us – but the culprit cannot be determined. Certain categories emerged here that the units have not mentioned, like danger of damaged goods, different unit load types and equipments needed to handle them, pointing to a lack of standardization as a possible root cause.

Most 3<sup>rd</sup> party logistics service providers suggested improved unloading conditions and more parking space as a measure to improve their operation.