



# 6<sup>th</sup> Workshop

## Managing Transportation

### *Inventory compilation*



## INVENTORY ON MANAGING TRANSPORTATION

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- B. INSTITUTIONAL STRUCTURE, FUNCTIONAL QUESTIONS:** questionnaire about the local and regional institutions and their functions.
- C. QUESTIONS ON REGULATIONS:** detailed questions about the different fields of transport management.
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BARCELONA

# SMART-MR INVENTORY ON MANAGING TRANSPORTATION

AMB – Barcelona Metropolitan Area

PP(s) responsible: BKK Centre for Budapest Transport



General instructions on the level city/region/MR:

In the SMART-MR project the majority of the questions and data is related to the Metropolitan region (MR) which means the metropolitan city and the surrounding region together, thus where not indicated in the following Inventory, please describe your MR. If there is a lack of data, or information, please indicate, whether you refer to the city, or region itself. In some questions specific data is asked about the city or region separately, in these cases region is meant the area outside the city.

## A) QUESTIONS ON DATA ABOUT TRANSPORTATION

### 1. General data about the city/region

	City	Region
Area (km <sup>2</sup> )	101	636
Population	1.620.809	3.213.775
Density (capita/km <sup>2</sup> )	16.048	5.053

### 2. Public transport network and performance in the city (the latest possible data):

Year:	Network length (km)	Number of vehicles	Passengers transported/year	Passenger km/year
Metro	119	171	390.395.567	85,78 M
Suburban rail	153,5	82	65,6M	Data not available
Tramway	29,1	23	26,8M	2,5M
Trolleybus	--	--	--	--
Bus	4.551,34	1.791	286.836.107	78.5M
Other				
Total	4.834,94	2.067	769,6 M	166.78M

### 3. Questions on the bus system (city, trolleybuses excluded):

- What is the average age of the buses? 9,28 years
- What propulsion system do buses use? (If exact numbers are not available, please indicate with "+" or "--" whether the system is available.)

Detailed information only for metropolitan buses.

Propulsion system	Number of buses
Diesel EUR III or lower	138
Diesel EUR IV	221
Diesel EUR V	249
Diesel EUR VI or higher	78
CNG	--
Hybrid (diesel/electric)	19
Full electric	1
Other (please specify)	--



For urban buses (City of Barcelona), the information available is the following:

TOTAL	DIESEL	CNG	Hybrid diesel-electric	Hybrid diesel-CNG	Electric
1085	496	378	194	13	4

#### 4. Modal split

- **What is the modal split in your city/region (share of PT, cars, bicycles, taxi, walking, etc.)?** (Data 2016)
  - Barcelona City: 47% active mobility (walking and bike), 33% PT, 20% private motorised mobility
  - Barcelona Metropolitan Region: 42% active mobility, 22% PT, 36% private motorised mobility
- **How and out of which data is the modal split calculated (no. of passengers, or passenger km)?** Annual survey on a working day in passengers (trips), 'EMEF' (10.100 surveys in 2017)
- **How often is the modal split calculation updated?** Once a year

#### 5. Please describe the data sources which you use for statistics (if demand, supply and fleet data sources are common, please feel free to join cells):

	Demand data	Supply data	Fleet data
What are general data sources, which you use?	- Surveys (AMB) - Ticketing (Metropolitan Transport Authority – ATM)	- Kilometres and hours of service - Expeditions	AMB/Operators: we have a mixed system, where the majority of buses are from AMB and the rest from the operator.
What kind of (strategic) agreements do you have with data suppliers?	AMB is part of the ATM (Metropolitan Transport Authority), which supplies data. We have agreements between AMB/ATM/operators.	Each month, the operators have to send us the information within 3 weeks.	For the buses from the operator, each year they have to send us a summary. Besides, we make a certificate for each bus (so we know the characteristics).
What kind of long time data series do you have, and for which period? (E.g. for the past 10 years, from 1970, etc.)	Since 1986 (it used to be every 5 years, but since 2003 it's every year).	2001	Digitalized information since 2008
Which part of the data is open and how is it publicly accessible?	The summary is public (detail level: operator, month/year).	Data from different PT authorities is published every year.	Data from different PT authorities is published every year.



	Other information (more detailed) can be obtained upon request to AMB (established channels)	Other information (more detailed) can be obtained upon request to AMB (established channels)	Other information (more detailed) can be obtained upon request to AMB (established channels)
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## 6. What kind of tariff and ticketing system do you use in your city/region?

- **Is there an integrated ticketing system?** Yes
- **Is the ticketing system paper based or electronic?** Currently it's a paper-based system with a magnetic band, but a contactless system is about to be launched this year.
- **Is the pricing system km based, ring/zone based, or other?** Zone based.
- **Do you use a single ticket per ride or is it time-based?** Both: single ticket is not integrated. The rest of tickets are time-based (maximum 1h15min to travel in the same zone).
- **What are the basic ticket/pass types being used?** Multimodal integrated magnetic card:
  - 1) **Barcelona travel card Hola BCN:** If you visit Barcelona, with this travel card you can make an unlimited number of journeys over 2 (48h, €15), 3 (72h, €22), 4 (96h, €28.50) or 5 days (120h, €35).
  - 2) **Single tickets:** One-way metro and bus tickets for a single journey on public transport in Barcelona (€2.20).
  - 3) **Integrated tickets and multi-journey tickets:** Travel cards for those who travel frequently and with different transport operators.
    - **T-10 card:** A multi-person travel card allowing 10 journeys to be made on all operators in the Integrated Fare System. (Price: 1 zone / From €10.20)
    - **T-50/30 card:** An individual travel card allowing 50 journeys to be made over 30 days on all operators in the Integrated Fare System. (Price: 1 zone / From €43.50)
    - **T-mes card:** A holder-specific travel card allowing unlimited journeys to be made for one month on all operators in the Integrated Fare System. (Price: 1 zone / From €54)
    - **T-trimestre card:** A holder-specific travel card allowing unlimited journeys to be made over 90 days on all operators in the Integrated Fare System. (Price: 1 zone / From €145.30)
    - **T-jove card:** Under 25s can use this travel card to make unlimited journeys over 90 days on all operators in the integrated transport system. (Price: 1 zone / From €105)
    - **T-70/30 card:** A multi-person travel card allowing 70 journeys to be made over 30 days on all operators in the integrated transport system. (Price: 1 zone / From €60.90)
    - **T-dia card:** An individual travel allowing an unlimited number of journeys to be made in one day on all operators in the integrated transport system. (Price: 1 zone / From €8.60)
    - **T-4 card:** 10 journeys at a special price for holders of certain ID cards. (Price: 1 zone / From €4)



- **T-16 card:** A personalised travel card for children and young people aged 4 to 16 years for unlimited free travel.
  - **T-mes FM/FN general card:** The advantages of the T-mes at a special price for general-type large and single-parent families. (Price: 1 zone / From €43.20)
- 4) **Bus tours and cable car:** Travel cards to get around the city on public transport, Barcelona Bus Turístic (from €30), Montjuïc cable car (from €9.20), etc.
- **What is the price of a single ticket/monthly pass within the city (in EUR)?** For the same zone: 2.20€ for the single ticket, 54€ for the monthly pass.

Price table for 2018 below:

Preus 2018 € (IVA inclòs)						
	1 zona	2 zones	3 zones	4 zones	5 zones	6 zones
Bitllet senzill	2,20	3,10	4,10	5,25	6,70	7,80
<b>TÍTOLS INTEGRATS</b>						
T-10	10,20	20,10	27,40	35,25	40,50	43,05
T-50/30	43,50					
T-70/30	60,90	88,05	120,75	147,90	169,35	183,70
T-mes	54,00	72,70	102,00	124,90	143,35	153,55
T-trimestre	145,30	196,50	275,25	337,15	386,80	414,40
T-jove	105,00	142,00	199,20	244,00	280,00	300,00
T-dia	8,60	13,10	16,45	18,40	20,60	23,05
<b>Famílies Monoparentals/Nombrosos</b>						
T-mes FM/FN general	43,20	58,15	81,60	99,95	114,65	122,85
T-mes FM/FN especial	27,00	36,35	51,00	62,45	71,70	76,80
T-trimestre FM/FN general	116,25	157,20	220,20	289,75	309,45	331,55
T-trimestre FM/FN especial	72,65	98,25	137,65	168,60	193,40	207,20
T-jove FM/FN general	84,00	113,60	159,35	195,20	224,00	240,00
T-jove FM/FN especial	52,50	71,00	99,60	122,00	140,00	150,00
T-70/90 FM/FN general	57,05	112,35	153,30	197,40	226,65	240,95
T-70/90 FM/FN especial	35,65	70,20	95,80	123,40	141,65	150,60
<b>Bonificació per a persones en atur</b>						
T-mes	9,95	9,95	9,95	9,95	9,95	9,95
<b>Altres títols</b>						
T-aire	1,85	3,60	4,95	6,35	7,30	7,75
T-10 Treb. aeroport	10,20	20,10	27,40	35,25	40,50	43,05
<b>Preus packs ampliació Berguedà i Ripollès € (IVA inclòs)</b>						
Pack "Berguedà-Barcelona"	53,25 (7 zones)					
Pack "Berguedà-Bages"	35,25 (4 zones)					
Pack "Ripollès-Barcelona"	53,25 (7 zones)					

- **What is the most used ticket/pass and what is its price (if different from the previous question)?** T-10 (ten integrated tickets to spend during one year, 10.20€) is the most used
- **What are basic discounts used (students, elderly, etc.)?** Students, elderly, jobless, T16 (free rides for kids from 4 to 16 y/o)
- **Are there any changes in the ticketing system foreseen?** Yes, very soon the system will be contactless and the integration area will be the whole Catalonia.





- **What is the current average petrol price (EUR/l)?**
  - Diesel: 1.186 €/l
  - Gasoline 95: 1.289€/l
  - GLP: 0.648€/l
- **Are your bus service tender contracts (if available) dependent on the petrol price? If yes, how?** Yes. The tenderer offers €/km and each year we update this price with the petrol price evolution. This cost represents approximately 15% of operation cost.

**7. Please describe the public transport connection of the (main) airport with the city centre.**

Mode	Distance	Travel time	Frequency (peak)	Single fare (EUR)	Operated by public, or private company
<b>Track based (METRO L9 Sud), to T1 and T2</b>	15-20km	32 min from Zona Universitària (1h3min from Catalunya square, combining metro L1+L9sud)	7 min	4,60€ (not integrated)	Public company (TMB)
<b>Track based (TRAIN Rodalies), to T2</b>	15-20km	40 min from Catalunya square	30 min	2,20€ (integrated)	Public company (RENFE)
<b>Bus (Aerobus), to T1 and T2</b>	15-20km	35 min from Catalunya square	5 min	5,90€ (single) / 10,20€ (return) (not integrated)	Private company, public procurement via AMB
<b>Bus (46), to T1 and T2</b>	15-20km	40-55 min from Espanya square	13-16 min	2,20€ (integrated)	Public company (TMB)

**8. Passenger satisfaction:**

- **Do you measure passenger satisfaction?** Yes
- **If yes how?** User surveys
  - **What are basic viewpoints/criteria for the survey (on what criteria do you ask/evaluate)?**
    - Bus frequency
    - Speed of journey
    - Information about the line (stops, times)
    - Service provided by the staff
    - Information about alterations in the service



- Information about the city provided on-board
  - Comfort of vehicle
  - No crowding on-board the vehicle
  - Capacity of luggage spaces
  - Temperature on the bus
  - Cleanliness and maintenance of the bus
  - Cleanliness and maintenance of the stops
  - Easy access to bus
  - No lines or crowding when boarding the bus
  - Smooth driving
  - No risk of violence, assault or robbery
  - How easy it is to obtain ticket
  - Ticket price
- **How often is it measured?** Twice a year

#### 9. Transport model:

- **Do you use a transport model for planning or evaluation of projects?**

Not until now, but with the development of the metropolitan mobility plan a transport model is being developed as well.

- **If yes, which one and for what do you use?**

Currently under development. The main objective of the project is to develop an integrated mobility and intra-urban air pollution exposure and health model with high spatial resolution to be used as a tool in the environmental assessment of the Barcelona Metropolitan Mobility Plan (PMMU). Following an integrated approach, we assess the mobility-derived pollution exposure and health impacts, with the aim of analysing social and spatial disparities, in accordance to different economic, urban and infrastructure development scenarios and the implementation of different measures of the mobility plan

- **How is the model fed with data, and how is data made available?**

The integrated model, implemented on GIS, includes: i) model of urban mobility and emissions; ii) model of air pollution exposure and health; iii) population and public facilities forecasts.

The model for urban mobility and emissions integrates, for the first time, both motorized and non-motorized means of transport and provides scenarios of future mobility, according to different origin-destination matrices and transport infrastructure.

It estimates the mobility derived emissions of NO<sub>x</sub>, NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> using disaggregated emission factors according to different vehicle typology and speeds.



A proximity method is implemented to provide high spatial resolution of pollutants distribution, and estimate population and public facilities exposure.

The model of air pollution exposure and health uses a land-use regression model to predict pollution concentrations, and a quantitative health impact assessment approach, including a description of the distribution of health effects on the population.

- **How often is the model updated?**

Currently under development.

## **B) INSTITUTIONAL STRUCTURE, FUNCTIONAL QUESTIONS**

Questionnaire about the local and regional institutions and their functions

### **1. Who are local and regional competent authorities/institutions regarding transportation in your MR?**

- AMB (Barcelona Metropolitan Area: metropolitan government)
- TMB (Barcelona Metropolitan Transports)
- Generalitat de Catalunya (Catalan government)

### **2. Please describe their service competences, responsibilities and decision making processes.**

- **AMB** (Barcelona Metropolitan Area): Besides **planning** and **management**, we have competencies in:
  - o Collective urban public transport of passengers on the surface, except for trams.
  - o Provision of metro and underground public transport of passengers.
  - o Regulation of the taxi service.
  - o Approval of the Urban Mobility Metropolitan Plan. Definition of the basic metropolitan road network. Participation in traffic management in this network, together with the Catalan Government.
  - o Planning and management of passenger transportation with tourist and cultural purposes, delegated by city councils.
  - o Promotion of sustainable transport.
  - o Management of the Barcelona ring roads.
- **TMB** (Barcelona Metropolitan Transports): is the public company which manages and plans urban bus service in Barcelona and metro. (Its budget is part of the AMB group budget).
- **Generalitat de Catalunya** (Catalan government):
  - o Highways and roads with routes running entirely through the territory of Catalonia.
  - o Railways and transport by land, sea, river and cable; ports, heliports, airports and the Meteorological Service of Catalonia, without prejudice to the provisions of



points 20 and 21 of part 1 of article 149 of the Constitution. Transport booking centres and loading terminals.

**3. Is there any transport authority in your city/region/MR?**

- **If yes, on which level: city/region/MR (i.e. transport association),**

**ATM** (Metropolitan Transport Authority) on the MR level. ATM is a voluntary inter-administrative consortium set up in 1997. The administrations within the consortium are the Catalan government (51%) and local governments (49%), namely Barcelona City Council, Metropolitan Area of Barcelona and the Association of Municipalities for Mobility and Urban Transport (AMTU). Also notable is the presence of representatives from the state central government (AGE) on ATM's governing bodies, as observers.

The aim of ATM is to organise the cooperation between the public administrations owning the collective public transport services and infrastructures, as well as collaboration with those administrations which, such as the state government, are committed from a financial point of view or which own their own services or services that have not been assigned to other bodies.

Manages:

- Planning infrastructures and services
- Relations with collective transport operators
- Financing the system via public administrations
- Organising tariffs
- Communication
- Future regulatory framework

- **What are the limits of a transport authority (territorial and service oriented /i.e. taxi, railway, etc./)?**

Between ATM (and the Government of Catalonia), AMB and the City Councils we are responsible for almost all the transport.

The only gaps are the inability to act in the transport of goods by rail, the state road and rail network and the long-distance rail services.

**4. Is there a cooperation between city and region in terms of transport and/or land use planning? If yes, please describe it briefly (common tariff, integrated regional transport, etc.).**

We have an integrated regional transport and ATM (see question 2 for details) is the authority that contributes to foster cooperation between the city and region.

**5. How are competences between different institutions regulated regarding owner, supervisor, and operator on local/regional level?**

Competences are regulated by law (i.e. 31/2010 Law of the Catalan Parliament that establishes AMB's competences).



Management of Public Transport in the metropolitan territory is an exclusive competence of AMB (the Metropolitan Area of Barcelona), with the exception of Tramway and Railway services, and regional buses (beyond AMB territory). There is a coordination of the different institutions involved regarding the unified tariff system.

**6. What is the relationship between public authorities and private initiatives? How are new forms of transportation regulated (like car-sharing, Uber, etc.)?**

Private bus initiatives must be approved by the competent public authority (AMB in the metropolitan level), and buses have to be registered and accepted to provide this kind of services.

Regarding new forms of transportation, the Catalan Parliament approved a decree (5/2017) to establish measures to arrange transport services up to 9 passengers (especially indicated for Uber, Cabify...). This is a delicate matter and the Spanish government is currently assessing the national legislation that regulates these new initiatives (especially in order to further protect affected services such as Taxis).

**C) QUESTIONS ON REGULATIONS**

**1. Parking:**

- **What are local building regulations for parking places regarding new buildings/refurbishments?**

We have some Urban Planning rules in the General Metropolitan Plan. They are summarized in the following table:

Use	Range	Metropolitan General Plan	Units
Residential buildings	> 150 m2 built	1,5	place / apartment
	90 a 150 m2 built	1	place / apartment
	60 a 90 m2 built	1	place / 2 apartment
	< 60 m2 built	1	place / 4 apartment
Buildings for offices, banks and similar; or with offices, banks and similar offices.		1	pl / 100 useable m2
Buildings with retail shops and large retail stores.	> 400 m2 for retail	0	pl / 60 m2 built
		1	pl / 80 m2 built
Industries, warehouses and, in general, premises destined for industrial use.	> 100 m2	1	pl / 100 m2 built
Theatres, cinemas, circuses, parties, shows, palaces or rooms of congresses and conventions, auditorium, facilities for sports and analogues.	Up to 500 tickets or users	1	pl / 15 tickets-users
	From 500 tickets	1	pl / 10 tickets-users
Hotels and residences	4 or 5 stars	1*	pl / 3 room
	3 stars	1	pl / 5 room
	Other	1*	pl / 6 room
Libraries, art galleries, museums and analogues.	> 1600 m2	1	pl / 200 m2



Clinics, sanatoriums, hospitals		1	pl / 10 beds
Loading and unloading areas (commercial and industrial uses)	400 / 800 m2	1	Size: 3x8 m for a truck for a truck
	800 / 1500 m2	2	
	each 1500 m2	1	

- **How do local regulations serve transport policies?**

Parking policies are municipal competences and are regulated under local regulations. The metropolitan area is beginning the harmonization process and has a unique technical platform project to facilitate electronic payments.

- **What are basic regulations regarding parking on public space? (Tariff, parking permits, local beneficiaries, etc.)**

In each of the 36 municipalities, different rate policies apply. The most common are the Blue Zones (maximum rotation rate of 2 hours) and the Green Zones (rotation rate for the general public and reduced rate for residents). There are also Green Zones dedicated to residents, areas of high rotation (maximum time of 20 minutes) and parking of dissuasion with a daily rate.

- **What is the relationship between parking houses vs. parking on public space? Are there any contradictions?**

Changes in the car park in the public space involve tensions with residents and retail. Especially, in densely urbanized urban areas.

The metropolitan area of Barcelona is composed of a set of cities with high density. The public space has an increasing value, all the cities tend to decrease and regulate the public space dedicated to the parking lot to promote the rotation and the economic activity. It also tends to establish more expensive fares in the public space than in underground car parks.

- **Please describe the basic parking discounts if there are any (on engine EUR category, emission, propulsion system, disabled, etc.)**

In the metropolitan municipalities we have a range of high discounts. The most common are bonuses for electric vehicles, but there are also tariff models that discriminate vehicles according to the Spanish environmental label, residents, etc. On the other hand, the variable rate according to the quality of the air is being intensified.

- **What are major milestones in parking policy in the recent past and in near future? (Enlarging parking zones, reducing discounts, handling of exceptions, etc.)**

Elimination of parking spaces on the surface, reduction of areas without tariff, pollution rates according to pollution, metropolitan public technical platform for payment and control.

- **P+R, B+R**

- **How many P+R and B+R spaces are there in the city/region?**

	City	Region
P+R	-	58 stations and 8.078 Places
B+R	200*	360*



- **Is the usage of P+R and B+R spaces free or priced?**

No prices on P+R and B+R spaces. Transport ticket required in AMB P+R network

- **Please describe your P+R, B+R standards.**

P+R considered: >20 parking places; Max. Distance from public transport stations (railway, tramway and bus stations): 350 m. / 5 min walking.

\*B+R: Bicibox of 7 or 14 places; New high capacity Bicibox coming soon (100 places). 2 minutes' walk to stations.

- **What are general principles (strategy) for developing P+R and B+R spaces?**

P+R: parking use related to public transport system. Transport ticket required in AMB P+R network. AMB - Municipalities agreement.

B+R: Upon demand from metropolitan municipalities, and distance to metro, tram and railway stations.

## 2. Tourist coaches/hop on hop off services:

- **What are basic regulations of entering and moving around the city?**

The upcoming Tourist Mobility Plan will establish the basic regulations.

- **How do you regulate stops, waiting areas, terminals?**

Procurement conditions regulate tourist services.

Otherwise, the future Tourist Mobility Plan will regulate all kinds of mobility related to tourism.

- **Are you contracting operators? If yes, what are basic contracting options for touristic services (using levies, taxes, etc.)?**

Yes, AMB is contracting operators through canon (the operator pays an amount to AMB for managing the tourist services).

- **Is the usage of bus lanes allowed for those vehicles? Yes.**

## 3. Congestion charge

- **Do you have a congestion charge, or do you plan to introduce one? No.**

- **If yes, for what purpose? N/A**

- **What are basic impacts, experiences with your existing congestion charging system? N/A**

- **What are revenues used for? N/A**

## 4. LEZ (low emission zone)

- **Do you have a LEZ, or do you plan to introduce one?**

Yes, we have a LEZ called "Zones de Baixes Emissions (ZBE) rondes de Barcelona" - Metropolitan Low Emission Zone in the Barcelona ring-roads. This LEZ covers approximately an area of 95 km<sup>2</sup>.



More information:

<http://ca.urbanaccessregulations.eu/countries-mainmenu-147/spain/barcelona>

<http://mobilitat.ajuntament.barcelona.cat/en/noticia/information-on-the-barcelona-low-emission-zone>

- **If yes, on what principle is it working?**

Regarding local low-emission zones, the main purpose of the projects is to reduce the number of vehicles running in the city, but also to convert the urban land into green, cultural and social meeting point.

- **What are your experiences, and future plans with LEZ?**

Circulation restrictions within the metropolitan LEZ of Barcelona began on December 1, 2017 on days of pollution episodes by NO<sub>2</sub>, working from Monday to Friday from 7:00 am to 8:00 pm. In subsequent years, the restrictions will be progressively extended until they become permanent after 2020.

Initially, restrictions will affect cars without a specific label (DGT tag) and vans before Euro1. During 2017 motorcycles, trucks, coaches, buses and vans Euro 1, Euro 2 and Euro 3 are exempt from this restriction.

In 2020 restrictions will affect all untagged vehicles (gasoline before euro 3 and diesel before euro 4)

Finally, the LEZ area will cover the whole metropolitan area of Barcelona (630km<sup>2</sup>) by the year 2025.

## 5. Bus lane usage

- **Do you have dedicated bus lanes? Yes**
- **If yes, who are allowed to use the bus lanes (taxi, bicycle, carsharing, etc.)? Buses and taxis, generally.**





- **How are bus lanes supervised to avoid inappropriate usage?** There are a few cars with cameras, but mostly by urban police. We also have control cars with automatic control systems with cameras.
- **Do you have any other dedicated type of lanes (i.e.: HOV lane, temporary parking lane, etc.)?** HOV lanes at 2 roads accessing Barcelona (C-31 north and C-58), and temporary parking lanes during the weekends on many bus lanes.

## D) ALTERNATIVE SYSTEMS, FUTURE

### 1. Strategic plans:

- **What is your planning horizon in transport developments, strategies?**

Mobility strategies (Urban mobility Metropolitan Plan): 2024 and 2030 (long term vision)

Infrastructures: 2020 and 2030

- **What are your city's/region's/MR's transport policy goals?**

Ensure accessibility and social equity in mobility

Improve citizens' health

Give support and help the metropolitan economic development

- **Are you using a SUMP methodology, and if yes, on what phase are you currently working on?**

Yes, diagnosis is already finished and right now we are defining the actions to undertake. During this 2nd quarter 2018 participatory process is being carried on, to prioritise and to discuss proposals.

### 2. E-mobility:

- **What is the situation of the e-mobility (number of e-cars/hybrids, charging stations, etc.) in your MR?**

- Number of e-cars: 4.000
- Number of e-bikes: 4.000
- Number of hybrid cars: 30.000
- More than 500 charging points in the MR, 30 of them quick charging stations. (Approximate figures)

- **What are basic incentives for e-mobility on local/regional/state level?**

- At local level: 100% reduction in on-street parking fares,
  - At regional level: 100% reduction in toll fares,
  - At state level: subsidies to the buyer (5.000-10.000 per e-car) and tax reduction.
- These incentives are nearly 100% in case of e-car, and below 100% for hybrid cars.



- **Is there any difference to conventionally fuelled cars regarding public space usage/parking?** No significant differences, except for level of parking fares.
- **Who is building/financing the grid to the charging stations?** In urban areas, the power distribution company, in peripheral areas, the charging station owner.
- **Who is building/operating charging points in your city/region?** The local administration for the on-street charging station. In case of charging points in parking facilities, the owner/manager of the facility.

The Metropolitan Area of Barcelona also has a programme for charging stations, and has built and manages 10 (fast charging) charging points in the metropolitan territory. The plan is to build another 20 charging stations (semi-fast charging)



More info: <http://www.amb.cat/en/web/mobilitat/mobilitat-sostenible/electrolineres>

- **What are future development plans regarding e-mobility?** The main project is to expand the charging points' network, and continue to incentive the e-cars market.

### 3. Carsharing, bikesharing

- **Is there any carsharing/bikesharing scheme in operation in your MR?**

A public bike sharing scheme is in operation in the city of Barcelona (Bicing). Some private carsharing companies are in operation in Barcelona and other metropolitan cities like l'Hospitalet or Sant Cugat, all of them in a one-trip scheme (no free-flow scheme in operation at this moment).



- **If yes, with which propulsion system (conventional/electric/mixed) is it running?**

Public bicycle systems are mixed, those of car and moto tend to be electric.

- **Who is running the service: public/private?**

Bikesharing is publicly owned, but operated by a private company. Car sharing is mainly private (although one of the companies is mixed) and moto systems are private.

The main characteristic feature of our region is the high presence of electric moto sharing.



#### CARSHARING

Companyia	Num. cotxes (juliol 2017)	% sobre el total de places d'aparcament públiques (soterrat + superfície)	% sobre el total de places d'aparcament públic soterrat	% sobre el total de places d'aparcament públic en superfície	% sobre el total del parc de turismes de Barcelona
avancar	350	0,13%	0,24%	0,27%	0,06%
Blaucar	100	0,04%	0,07%	0,06%	0,02%
Flota cotxes carsharing (Total)	450	0,16%	0,31%	0,35%	0,08%



#### BIKESHARING

Companyia	Num. bicicletes (juliol 2017)	% sobre el total de places d'aparcament en superfície	% sobre l'estimació del total de bicicletes privades (2015) **2
POWERTY	400	1,48%	0,08%
dropbike	0	0%	0%
Flota bicis bikesharing (Total)+1	400	1,18%	0,08%

+1 No s'ha inclòs la flota de vehicles del Bicimg en aquesta anàlisi.  
 \*\* S'ha utilitzat la IMQ perquè no es disposa de dades sobre el cens de bicicletes.



#### MOTOSHARING

Companyia	Num. motos (juliol 2017)	% sobre el total de places d'aparcament públic en superfície (verera + calçada)	% sobre el total de places d'aparcament públic en calçada	% sobre el total de places d'aparcament en verera+1	% sobre el total del parc de motos de Barcelona
eCOOLIZ	550	0,80%	0,86%	10,95%	0,20%
yugo	210	0,30%	0,33%	4,18%	0,08%
moti	250	0,36%	0,39%	4,98%	0,09%
Q	200	0,29%	0,31%	3,98%	0,07%
Flota motos motosharing (Total)	1210	1,75%	1,89%	24,09%	0,45%

+1 Només es contemplen les places d'aparcament en verera que estan marcades o delimitades

Notes:  
 Dades actualitzades al desembre del 2017

#### Main companies in Barcelona

- **How is it regulated, is it a public task, or a free market initiative (or something in-between)?**

These schemes are in the process of being regulated with a new licensing system. In this new system we need special emphasis on the use of the space of parking spaces on public roads, number of companies, number of vehicles (all electric), minimum area, security, system of redistribution of vehicles, and exchange data.

- **How is bus lane usage regulated for car sharing vehicles?**

Circulation is not allowed. Only for taxis and buses.

#### 4. Autonomous vehicles:

- **How actual is the question regarding autonomous vehicles in your MR?**

Currently we are considering the implementation of some pilot projects in the future. However, current autonomous vehicles have an important lack of capacity which limits severely the service possibilities.

- **Is there any regulation for autonomous vehicles?**

Currently not, they are able to circulate with a municipal permission.

- **Is the infrastructure fitted? What steps do you plan in this regard?**



Not defined.

## 5. MAAS (Mobility as a Service)

- **Is there any kind of MAAS in your MR?**

The AMB Information app combines different transport modes for planning and information purposes. There are implementations regarding the integration of fares between public and private mobility operators (carsharing, bikesharing, public transport), however some of them are being planned.

- **If yes, what is the role of the transport authority in this scheme?**

ATM, with T-Mobilitat (new payment system for public transport) might plan to include bike-sharing, but this is currently under study and not implemented yet.

- **Is the scheme run by public or private operators?**

Public initiative.

- **If there isn't any MAAS scheme yet, are there plans to introduce one?**

There is one already (see above)

## E) GOOD PRACTICE PRESENTATION

Please try and give a good example of how you/others manage transportation in your MR. Try and describe shortly the reasons for being a good practice. You can include links, pictures. (max. 1 page).

<b>Good practice</b>
Name: <a href="#">Green Ticket (T-verda metropolitana)</a>
Context:  AMB and ATM promote a new transport ticket to encourage people to retire their old and pollutant vehicles.  Citizens who retire their old car/motorcycles (without environmental sticker) can get the Green Ticket, which is a 3 years free pass for all public transport (ATM zone). The only condition to keep the ticket is the prohibition of buying another vehicle (even with environmental sticker).  The basic and necessary conditions for getting the green card are the following: <ul style="list-style-type: none"><li>• To be a registered resident in one of the 36 metropolitan municipalities.</li><li>• Having got rid of a light diesel vehicle up to Euro 3 (manufactured before 2005), or gasoline or gas up to Euro 2 (manufactured before 2000) and motorcycles type pre-Euro or Euro 1.</li><li>• Not having bought any new vehicle from 6 months before the date of scrapping, nor after the mentioned loss, during the period of validity of the Metropolitan Green Card.</li></ul>




<p>Main stakeholders involved:</p> <ul style="list-style-type: none"><li>- ATM (transport authority): decision/strategic level</li><li>- AMB (regional government): management level</li></ul>
<p>Web links:</p> <p><a href="https://www.amb.cat/en/web/amb/seu-electronica/tramits/detall/-/tramit/targeta-t-verda/6546634/11696">https://www.amb.cat/en/web/amb/seu-electronica/tramits/detall/-/tramit/targeta-t-verda/6546634/11696</a></p> <p><a href="https://t-verda.cat/#/public/t-verda">https://t-verda.cat/#/public/t-verda</a></p>
<p>Why is the practice considered as 'good'?</p> <p>This is considered a good practice because it encourages citizens to retire their old and pollutant vehicles, and using public transport instead of buying a new private vehicle.</p> <p>This initiative helps reducing pollution and improving the air quality of the metropolis; at the same time it represents a real alternative when restrictions on the circulation of polluting vehicles are starting to apply in the metropolitan Low Emission Zones (ZBE).</p> <p>Users pollute less and at the same time get used to moving with public transport in the long run (valid for 3 years). Therefore this measure promotes a new model of sustainable mobility, discouraging the ownership of cars and motorcycles.</p> <p>The service is managed by the AMB, and it has proved so successful that the Generalitat de Catalunya (regional government) has decided to adopt it and extend it to the rest of the territory with the name of T-Verda.</p>



BUDAPEST

# **SMART-MR INVENTORY ON MANAGING TRANSPORTATION**

**BKK Centre for Budapest Transport**

**PP(s) responsible: BKK Centre for Budapest Transport**



General instructions on the level city/region/MR:

In the SMART-MR project the majority of the questions and data is related to the Metropolitan region (MR) which means the metropolitan city and the surrounding region together, thus where not indicated in the following Inventory, please describe your MR. If there is a lack of data, or information, please indicate, whether you refer to the city, or region itself. In some questions specific data is asked about the city or region separately, in these cases region is meant the area outside the city.

## A) QUESTIONS ON DATA ABOUT TRANSPORTATION

### 1. General data about the city/region

	City	Region
Area (km <sup>2</sup> )	525	6919
Population	1,75 M	2,93 M
Density (capita/km <sup>2</sup> )	3347	423

### 2. Public transport network and performance in the city (the latest possible data):

Year:	Network length (km)	Number of vehicles	Passengers transported/year	Passenger km/year
2017				
Metro	42	461	410,6 M	1.780,6 M
Suburban rail	97,9	294	60,8 M	361,7 M
Tramway	161	602	410,8M	1.119,9 M
Trolleybus	56	138	84,8M	162,5 M
Bus	893	1450	606,9 M	2.448,6 M
Other (boat)	15	11	0,4 M	2,8 M
Total	1.167	2956	1.574,4 M	5.876,3 M

### 3. Questions on the bus system (city, trolleybuses excluded):

- What is the average age of the buses?

10,4 years

- What propulsion system do buses use? (If exact numbers are not available, please indicate with "+" or "-" whether the system is available.)

Propulsion system	Number of buses
Diesel EUR III or lower	664
Diesel EUR IV	27
Diesel EUR V	34
Diesel EEV	172
Diesel EUR VI or higher	461
CNG	71
Hybrid (diesel/electric)	1
Full electric	20
Other (please specify)	-



#### 4. Modal split

- **What is the modal split in your city/region** (share of PT, cars, bicycles, taxi, walking, etc.)?

2017 distance based, working day, Budapest: 47 % PT, 34 % car as driver, 6 % car as passenger, 11 % pedestrian, 2 % bicycle.

2017, distance based, working day, Metropolitan region: 45 % PT, 41 % car as driver, 9 % car as passenger, 4 % pedestrian, 1 % bicycle.

2017, trip based, working day, Budapest: 37 % PT, 21 % car as driver, 5 % car as passenger, 34 % pedestrian, 2 % bicycle.

2017, trip based, working day, Metropolitan region: 40 % PT, 39 % car as driver, 9 % car as passenger, 9 % pedestrian, 1 % bicycle.

- **How and out of which data is the modal split calculated (no. of passengers, or passenger km)?**

Modal split survey (household survey) is conducted in May every year. The sample is 1000 person from Budapest and the agglomeration.

- **How often is the modal split calculation updated?**

Every year.

#### 5. Please describe the data sources which you use for statistics (if demand, supply and fleet data sources are common, please feel free to join cells):

	Demand data	Supply data	Fleet data
What are general data sources, which you use?	Passenger counting, detectors, on vehicle counters	Internal data, data provided by service providers	Internal data, data provided by service providers
What kind of (strategic) agreements do you have with data suppliers?	Data is available upon request	Service contracts with service providers	Service contracts with service providers
What kind of long time data series do you have, and for which period? (E.g. for the past 10 years, from 1970, etc.)	Statistical data is available before 2010, modal split data is available since 2011, data for transport model is available since 2014.	Long time data is available	Long time data is available
Which part of the data is open and how is it publicly accessible?	Data is not published, but is upon request available	Statistical publications, yearbooks, yearly reports are available in printed form or online	Statistical publications, yearbooks, yearly reports





## 6. What kind of tariff and ticketing system do you use in your city/region?

- **Is there an integrated ticketing system?**

Ticketing system is fully integrated for the city transport system, and partially integrated with other transport modes (railway, regional buses) in the city. Outside the city it is not integrated.

- **Is the ticketing system paper based or electronic?**

The current ticketing system is paper based, but it will be replaced by an electronic ticketing system in the soon future.

- **Is the pricing system km based, ring/zone based, or other?**

The city is one zone, outside the city we use a km-based system.

- **Do you use a single ticket per ride or is it time-based?**

We use a single ticket system.

- **What are the basic ticket/pass types being used?**

Basic ticket types are :

- single tickets, transfer tickets, block of 10 tickets
- daily ticket, 48, 72, 96, 120 hours tickets, 7-day travelcard
- passes: 15 days, monthly, annual passes.

- **What is the price of a single ticket/monthly pass within the city (in EUR)?**

- single ticket: 1,13 EUR (350 HUF)
- monthly pass: 30,6 EUR (9500 HUF)

- **What is the most used ticket/pass and what is its price (if different from the previous question)?**

Monthly pass.

- **What are basic discounts used (students, elderly, etc.)?**

Pupils, students, pensioners get discounted passes, children under 6 and people over 65 travel for free.

- **Are there any changes in the ticketing system foreseen?**

There is already a long time preparation of the new electric ticketing system, where ticket types will also change. For example single tickets per ride will be eliminated, new, time based tickets with transfer possibilities will be introduced.

- **What is the current average petrol price (EUR/l)?**

Current average petrol price (95) is 1,19 EUR/l.

- **Are your bus service tender contracts (if available) dependent on the petrol price? If yes, how?**

In tendered contracts bus service km fee depends on petrol price. 25-30% of km fee depend on petrol price index. (Rest of km fee depend on general price index.) Every quarterly or half-year km fee is valorised using petrol price index.



## 7. Please describe the public transport connection of the (main) airport with the city centre.

Mode	Distance	Travel time	Frequency (peak)	Single fare (EUR)	Operated by public, or private company
Track based	-	-	-	-	-
Bus 100E	20,7	45 min	30 min	2,9	public
Bus 200 E (to the metro)	12,7	25 min	7,5 min	1,13	public

## 8. Passenger satisfaction:

- **Do you measure passenger satisfaction?**

Yes.

- **If yes how?**

Direct questioning is made at the home of randomly selected passengers (600 in the city, 400 in the region)

- **What are basic viewpoints/criteria for the survey (on what criteria do you ask/evaluate)?**

Basic criteria for the survey are: price, speed, accessibility, safety, reliability, comfort, passenger information and service provider behaviour of public transport.

- **How often is it measured?**

It is measured every year around November, since 2012.

## 9. Transport model:

- **Do you use a transport model for planning or evaluation of projects?**

Yes.

- **If yes, which one and for what do you use?**

Macroscopic Transport Modell of Budapest (EFM) is the official macroscopic model of Budapest, maintained by BKK.

- **How is the model fed with data, and how is data made available?**

Several data sources (traffic counting, loop detectors, statistic data, passenger counting, IR sensors on trams, etc..) are used during the regular, yearly update.

- **How often is the model updated?**

Every year.



## B) INSTITUTIONAL STRUCTURE, FUNCTIONAL QUESTIONS

Questionnaire about the local and regional institutions and their functions

**7. Who are local and regional competent authorities/institutions regarding transportation in your MR?**

The Ministry for National Development and the Municipality of the City of Budapest are the main competent authorities in the Central Hungarian Region.

**8. Please describe their service competences, responsibilities and decision-making processes.**

The Ministry for National Development is responsible for regional and long distance transportation, while local municipalities are responsible for local transportation. In Budapest, the Municipality of the City of Budapest is responsible for transportation issues. In Hungary, there is no regional level for transport competences.

**9. Is there any transport authority in your city/region/MR?**

• **If yes, on which level: city/region/MR (i.e. transport association)**

There is a transport authority at city level, BKK Centre for Budapest transport, which is a company established by the Municipality of the City of Budapest.

• **What are the limits of a transport authority (territorial and service oriented /i.e. taxi, railway, etc./)?**

BKK is responsible for the city transportation, basically within the city boundaries of Budapest, but is not responsible for the railway and regional/long distance buses. There are certain services (e.g. ticket sales and control, passenger info, etc.) which are tasks of BKK for some regional bus and train lines (formerly run by BKV). BKK is licensing and controlling taxi services, but is not responsible for private service providers, e.g. carsharing.

**10. Is there a cooperation between city and region in terms of transport and/or land use planning? If yes, please describe it briefly (common tariff, integrated regional transport, etc.).**

There is a certain cooperation between the Ministry and the Municipality of the City of Budapest. Long distance and local transport is partly coordinated, and there is an agreement containing BKK's tasks regarding certain regional bus and railway lines, the division of revenues and the compensation paid. There is also an agreement regulating the incomes of the commonly used Budapest passes within the city. In case of incidents railway company and BKK agrees on measures (train replacements, reciprocal acceptance of tickets, passenger information measures, etc.).

**11. How are competences between different institutions regulated regarding owner, supervisor, operator on local/regional level?**

Different competent authorities have their own institutions for the different tasks. For example in Budapest, public roads are owned either by Budapest, or by the city districts themselves. In general the owners have to supervise and operate their properties. For the operation they commission different companies. Roads belonging to the Municipality of the City of Budapest are supervised and operated by Budapest Közút, a dedicated municipal company.

**12. What is the relationship between public authorities and private initiatives? How are new forms of transportation regulated (like carsharing, Uber, etc.)?**



New forms of transportation require new regulations. At the first step public authorities are open for new forms of transportation and they observe services provided. BKK tries to integrate new and sustainable modes of transportation, but regulations require time. Carsharing is still done by open market principles, but BKK is in contact with the operators. After Uber appeared, it got quite popular, but there were a lot of constraints and resistances, that's why it got finally prohibited.

## C) QUESTIONS ON REGULATIONS

### 1. Parking:

- **What are local building regulations for parking places regarding new buildings/refurbishments?**

According to the current regulations, at least one parking space should be provided to every newly built flat. The same is valid for refurbished buildings, where the number of flats increases, the same amount of new parking spaces should be provided as well. In most cases, particularly in the inner city the required number of new parking spaces cannot be build due to lack of space, thus the investors have to pay a certain amount of money for parking space redemption for the local municipalities.

- **How do local regulations serve transport policies?**

In one hand, if every flat had its own parking space, there would be no parking problem in the city. On the other hand, it would enhance car usage a lot. If garages exist in residential houses, flats and garages do not necessarily belong together, they can be sold individually. Some lower income residents buy only flats without garages and park on the streets causing parking problems, while garages often stay empty.

- **What are basic regulations regarding parking on public space? (tariff, parking permits, local beneficiaries, etc.)**

In the inner city of Budapest parking is chargeable on hourly basis in general. Prices differ by the space, the closer to the centre, the higher is the price. Parking time is often limited to 2 or 3 hours. In certain protected areas, access or parking is limited only to residents, or owners of special permits. Local residents get a permanent parking permission almost for free.

- **What is the relationship between parking houses vs. parking on public space? Are there any contradictions?**

For an average user the fee for on street parking in the charged zones or in the parking houses are almost equivalent. Parking garages have the advantage of not limiting parking time and offering a variety of seasonal tickets, but some people find it complicated to park into the garage and a lot of people prefer to have a view on their parked car on the street. As residents park almost for free on the streets, but have no major discounts in parking garages, streets are full of residual parking, while garages are often empty.

- **Please describe the basic parking discounts if there are any (on engine EUR category, emission, propulsion system, disabled, etc.)**

Disabled with a registration card made visible in the car park for free on the streets. There are also dedicated spaces for disabled, where other cars parked are subject to fine. Electric or certain hybrid vehicles with a green licence plate park also for free on public space. Residents can get a yearly parking permission for their home area for a slight amount of money.

- **What are major milestones in parking policy in the recent past and in near future? (enlarging parking zones, reducing discounts, handling of exceptions, etc.)**



Charged parking was introduced in Budapest in the 80's and was extended in the beginning of the 90's for the city centre. Parking zones within the Great Boulevard were introduced in the late 90's, and they are constantly extended for always outer areas since. This process seems to go on also in the future, which should be limited.

- **P+R, B+R**

- **How many P+R and B+R spaces are there in the city/region?**

	City	Region
P+R	5700	8000
B+R	1000	3000

- **Is the usage of P+R and B+R spaces free or priced?**

In general the usage of P+R and B+R is free, but in the inner city in more frequented P+R spaces, or spaces surrounded with charged parking zones, P+R is priced. A daily ticket costs 1,13 EUR, which equals the price of the public transport ticket, but there is no direct connection between them.

- **Please describe your P+R, B+R standards.**

Newly built B+R spaces have U form stands, are paved and illuminated, sheltered and preferably supervised with cctv cameras and are closely located to PT stops.

Newly built P+R spaces are paved, illuminated, are situated close to PT stops, are equipped with cctv cameras and have spaces for disabled people as well as automatic counters and indicators for the occupancy.

Older P+R and B+R spaces not always meet these standards.

- **What are general principles (strategy) for developing P+R and B+R spaces?**

B+R spaces should be settled to all major metro and suburban railway stops, preferably in combination with P+R parkings. P+R spaces should be settled outside the inner city (Hungária ring) at the major metro, suburban rail stations or selected tram stops. The number of P+R spaces should be highly enlarged, up to around 15.000 in the city, and the same in the region. Outside the city smaller P+R spaces should be built along railway lines to provide residents parking possibilities as close their homes as possible. At the city edges higher capacity P+R sites should be built to stop car traffic entering the city.

## 2. Tourist coaches/hop on hop off services:

- **What are basic regulations of entering and moving around the city?**

There are currently no regulations for tourist coaches for entering and moving around the city, but a regulation is planned. For the hop on hop off services routes and stops are fixed and included in their contracts.

- **How do you regulate stops, waiting areas, terminals?**

For tourist coaches two types of stops are provided: one for getting on and off near places of public interest stopping shortly, the other one is for longer time parking. For the hop on hop off services public transport stops are available for common use according to their contracts.

- **Are you contracting operators? If yes, what are basic contracting options for touristic services (using levies, taxes, etc.)?**

Hop on hop off services are contracted on one hand with the Municipality of the City of Budapest for providing the service, and for the other hand with BKK to use public transport stops. This system is currently being changed, as there will be one concessionaire for running the entire service.



- **Is the usage of bus lanes allowed for those vehicles?**

No, neither tourist coaches, nor hop on hop off services may use dedicated bus lanes in the city.

### 3. Congestion charge

- **Do you have a congestion charge, or do you plan to introduce one?**

No.

- **If yes, for what purpose?**
- **What are basic impacts, experiences with your existing congestion charging system?**
- **What are revenues used for?**

### 4. LEZ (low emission zone)

- **Do you have a LEZ, or do you plan to introduce one?**

No, there is currently no LEZ in Budapest, and there are no concrete plans to introduce one.

- **If yes, on what principle is it working?**
- **What are your experiences, and future plans with LEZ?**

### 5. Bus lane usage

- **Do you have dedicated bus lanes?**

Yes.

- **If yes, who are allowed to use the bus lanes (taxi, bicycle, carsharing, etc.)?**

Bus lanes are dedicated for scheduled bus services (local and regional), taxis, motorcycles and emergency vehicles (also if not using emergency signals). Some bus lanes are open for bicycles as well, if indicated on the signs. Electric vehicles and carsharing cars are not allowed to use bus lanes.

- **How are bus lanes supervised to avoid inappropriate usage?**

The most frequented bus lanes are supervised by surveillance cameras, equipped with automatic licence plate recognition. Other bus lanes are controlled occasionally by the police.

- **Do you have any other dedicated type of lanes (i.e.: HOV lane, temporary parking lane, etc.)?**

No.

## D) ALTERNATIVE SYSTEMS, FUTURE

### 1. Strategic plans:

- **What is your planning horizon in transport developments, strategies?**

In the city development plans and mobility strategy our general planning horizon is 2030.

- **What are your city's/region's/MR's transport policy goals?**



The future vision is presented by Budapest's urban development concept: "Budapest is a liveable, attractive capital city with a unique character and is a respected member of the European network of cities as the innovative economic and cultural centre of the country and the region."

According to the general goal, the transport of Budapest must improve the competitiveness of the town and its region and must also contribute to establishing a sustainable, liveable, attractive and healthy urban environment. The operational goals required for achieving the strategic objectives (liveable urban environment, safe, predictable and dynamic transport services, cooperative regional relations) appear in four areas of intervention: infrastructure, vehicles, services and the governance system, i.e., more connections, attractive vehicles, better services and efficient governance.

- **Are you using a SUMP methodology, and if yes, on what phase are you currently working on?**

Yes, our SUMP is currently under development. The definition of objectives and setting of goals as a first phase was already completed, BKK is now working on the programming as well as monitoring and evaluation plan as a second step.

## 2. E-mobility:

- **What is the situation of the e-mobility (number of e-cars/hybrids, charging stations, etc.) in your MR?**

Electric mobility for private cars is currently developing in Hungary. There are app. 3000 electric cars and hybrids in and around Budapest (a year ago it was only the half of that). The number of public charging stations is around 100. Regarding private charging points there is no data available.

- **What are basic incentives for e-mobility on local/regional/state level?**

The state is promoting electric mobility in the country. The so-called Jedlik Ányos plan defines some measures and goals to enhance electric mobility. Car owners get remarkable tax reductions regarding registration tax and corporate tax. They can also apply for a state subsidy of app. 5000 EUR if buying a new electric car. Furthermore local municipalities allow the parking for free on public space.

- **Is there any difference to conventionally fuelled cars regarding public space usage/parking?**

Electric and some hybrid cars having a green licence plate can park for free in most cities on public parking spaces.

- **Who is building/financing the grid to the charging stations?**

Usually the grid is financed and built by the same companies, who operate the charging stations themselves.

- **Who is building/operating charging points in your city/region?**

At the first step electricity companies started to install charging points, later municipalities and private companies (like shopping centres) installed further charging points. Currently there is a state company (eMobi) who is installing charging points countrywide, while energy provider companies MOL and E-on are also building new chargers to complete the network.

- **What are future development plans regarding e-mobility?**

Developments of charging points continue to install 169 new chargers in Budapest and a further 50 in the region. On long term there are about 1000 public chargers planned in the metropolitan region.



### 3. Carsharing, bikesharing

- **Is there any carsharing/bikesharing scheme in operation in your MR?**

In Budapest there is a public bikesharing scheme, MOL Bubi in operation since 2014, while two carsharing companies operate, the first since 2016, the second since 2018.

- **If yes, with which propulsion system (conventional/electric/mixed) is it running?**

The bikesharing system uses conventional bikes, while one of the carsharing companies is operating fully, the other one is partly electric. The short term goal is to phase out conventionally driven vehicles and replace them by electric cars.

- **Who is running the service: public/private?**

The bikesharing system is run by the city and operated by a private company, carsharing companies are fully private.

- **How is it regulated, is it a public task, or a free market initiative (or something in-between)?**

Bikesharing is part of the public service in Budapest, therefore public money can be assigned to the operational costs. Carsharing is currently a free market initiative, but a short term goal is to integrate it somehow to public services, or at least regulate it on city level.

- **How is bus lane usage regulated for carsharing vehicles?**

Carsharing vehicles are not allowed to use bus lanes.

### 4. Autonomous vehicles:

- **How actual is the question regarding autonomous vehicles in your MR?**

There are no autonomous vehicles on the streets yet in Budapest, but we can expect them in the coming 10-15 years.

- **Is there any regulation for autonomous vehicles?**

There are no regulations made yet for autonomous vehicles, this will be a challenge for the future.

- **Is the infrastructure fitted? What steps do you plan in this regard?**

There are no studies made yet on this subject, this will also be a task of the future.

### 5. MAAS (Mobility as a Service)

- **Is there any kind of MAAS in your MR?**

There is no MaaS implemented yet in Budapest.

- **If yes, what is the role of the transport authority in this scheme?**

- **Is the scheme run by public or private operators?**

- **If there isn't any MAAS scheme yet, are there plans to introduce one?**

There are no concrete plans to introduce MaaS in the city, but BKK is following the developments on this field.





## E) GOOD PRACTICE PRESENTATION

Please try and give a good example of how you/others manage transportation in your MR. Try and describe shortly the reasons for being a good practice. You can include links, pictures. (max. 1 page).

<b>Good practice</b>
<b>Name:</b> Integrated mobility management in Budapest
<b>Context:</b> <p>The Municipality of the city of Budapest as the competent authority for local transport established Centre for Budapest Transport (BKK) as an integrated transport authority for managing transportation issues in Budapest. BKK as a public company, manages tasks and activities such as strategic mobility planning, road safety, public transport, strategic road management and maintenance, parking, taxis and transport information. Through the cross-sectoral integration of all transport modes, BKK organises the integrated mobility management. After the company reorganizations in the recent years, the management of transportation is done in 4 companies: BKK and its subsidiaries: Budapest-Közút, BKÜ (Budapest Transport Customer Relations) and BÖK (Budapest Municipal Debt Management). Budapest Közút is responsible for road management, operation and maintenance, BKÜ is responsible for selling and controlling tickets, while BÖK is responsible for debt management.</p>
<b>Main stakeholders involved:</b> <ul style="list-style-type: none"><li>• The Municipality of the city of Budapest</li><li>• BKK Centre for Budapest Transport</li><li>• Budapest Közút</li><li>• BKÜ</li><li>• BÖK</li></ul>
<b>Web links:</b> <a href="http://www.bkk.hu">www.bkk.hu</a>
<b>Why is the practice considered as 'good'?</b> <p>Creating an integrated transport authority ensures a holistic approach to mobility as a whole, instead of sectoral views. It also helps to make tasks and responsibilities clear. BKK is responsible for all travelers regardless the purpose, the aim and the mode of transport. Travel demand is influenced based upon sustainability principles, real society demands and reasonable economic costs.</p>



GÖTEBORG

# **SMART-MR INVENTORY ON MANAGING TRANSPORTATION**

**GR Göteborg region**

**PP(s) responsible: BKK Centre for Budapest Transport**



General instructions on the level city/region/MR:

In the SMART-MR project the majority of the questions and data is related to the Metropolitan region (MR) which means the metropolitan city and the surrounding region together, thus where not indicated in the following Inventory, please describe your MR. If there is a lack of data, or information, please indicate, whether you refer to the city, or region itself. In some questions specific data is asked about the city or region separately, in these cases region is meant the area outside the city.

## A) QUESTIONS ON DATA ABOUT TRANSPORTATION

### 1. General data about the city/region

	City	Region
Area (km <sup>2</sup> )	450	3718
Population	564 000	1012600
Density (capita/km <sup>2</sup> )	1260	272

### 2. Public transport network and performance in the city (the latest possible data):

Year:	Network length (km)	Number of vehicles	Passengers transported/year	Passenger km/year
Metro	-	-	-	-
Suburban rail	196	43	10 200 000	Na
Tramway	120	263	125 800 000	566 000 000
Trolleybus	-	-	--	-
Bus	6026	946	132 000 000	856 000 000
Boat	149	17	6 400 000	Na
Total		1269	274 400 000	1 422 000 000

### 3. Questions on the bus system (city, trolleybuses excluded):

We can't exclude the citybuses in the statistics, in total (2017) we had 1902 buses.

- **What is the average age of the buses?**  
5,6 years
- **What propulsion system do buses use? (If exact numbers are not available, please indicate with "+" or "-" whether the system is available.)**  
Diesel engine 1524 buses, 359 gas buses and 11 MDE buses (hybrid- gas and HVO), 3 electric buses and 5 plug-in hybrid

Propulsion system	Number of buses
Diesel EUR III or lower	6 buses, 0,3%
Diesel EUR IV	42 buses, 2,2 %
Diesel EUR V	1345 buses, 71 %
Diesel EUR VI or higher	501 buses, 26,5 %
CNG	359
Hybrid (diesel/electric)	140



Full electric	3
Other (please specify)	5 plug-in-hybrid, 11 MDE (hybrid gas/HVO)

#### 4. Modal split

- **What is the modal split in your city/region (share of PT, cars, bicycles, taxi, walking, etc.)?**

For Göteborg area 42 % of motorized trips in 2017

For Region Västra Götaland 33 % of motorized trips in 2017

- **How and out of which data is the modal split calculated (no. of passengers, or passenger km)?**

Average number of passenger-trips per year, with aggregated data from monthly travel-surveys

- **How often is the modal split calculation updated?**

Annually

#### 5. Please describe the data sources which you use for statistics (if demand, supply and fleet data sources are common, please feel free to join cells):

	Demand data	Supply data	Fleet data
What are general data sources, which you use?	Data regarding passengers, production of km, vehicles and so forth is adapted and aggregated in our Business system, Raindance. The original sources is a combination of systems for contractual information, systems for Automatic Passenger Counter and Systems for traffic information.		
What kind of (strategic) agreements do you have with data suppliers?	N/A		
What kind of long time data series do you have, and for which period? (E.g. for the past 10 years, from 1970, etc.)	Inkl data series fr o m 2006, even if there have been some changes in definitions and in some cases new ways of calculating.		
Which part of the data is open and how is it publicly accessible?	Data is generally open on an aggregated level, apart from direct contract information. Today data is accessible through direct contact with Västtrafik. Västtrafik is ongoing developing its processes and systems in order to improve the way open data is publicly accessible.		

- **What kind of tariff and ticketing system do you use in your city/region?**

The ticketing system has smartcards that you validate on board the vehicles, but also an app-solution, Västtrafik To Go

- **Is there an integrated ticketing system?**



Yes, all local and regional public transport lines and modes are integrated in the same ticketing system for Region Västra Götaland.

- **Is the ticketing system paper based or electronic?**

Mainly electronic, via smartcard or app. There are also paper-based single tickets available.

- **Is the pricing system km based, ring/zone based, or other?**

Both. For trips within a single zone the price is always zone-based. For trips crossing two or more zones, the lowest price between zone-price and kilometer-price is calculated by the system. For tickets purchased via the app Västtrafik To Go, only zone-based tickets are available.

- **Do you use a single ticket per ride or is it time-based?**

It is time-based. 90 minutes single ticket within 1 zone and 180 minutes ticket for multiple zones.

- **What are the basic ticket/pass types being used?**

Smart card or app in smartphone, Android or Apple.

- **What is the price of a single ticket/monthly pass within the city (in EUR)?**

Single ticket for zone Göteborg and other city zones within Region is ca €3 and for remaining zones ca €4. Monthly card for Göteborg is ca €62 and for other (smaller) city zones ca €55 and for remaining zones ca €76. The monthly card for Göteborg is partially subsidised by the City, regular price would be €76. A monthly cards for the whole Region Västra Götaland (ca 200 by 200 km) is €172. There are also some monthly cards for combined zones within the region.

- **What is the most used ticket/pass and what is its price (if different from the previous question)?**

Monthly card is the most common ticket.

- **What are basic discounts used (students, elderly, etc.)?**

Students and children up to 19 have a 25 % discount. Ca 40 out of 49 municipalities in Region Västra Götaland purchase annual cards and give for free to their senior citizens (mostly age 65+ but in some cases 75+)

- **Are there any changes in the ticketing system foreseen?**

The app Västtrafik To Go was introduced a year ago and is growing steadily. Ca 25 % of total ticket sale is now in the app. You can buy single ticket, 1day-pass, 3-day pass, monthly and tri-monthly card for any zone in the app.

A new and simpler zone-model with only 3 zones instead of the current 70+ zones is currently in discussion with the municipalities.

- **What is the current average petrol price (EUR/l)?**



Ca €1.40 per litre

- **Are your bus service tender contracts (if available) dependent on the petrol price? If yes, how?**

There is an index clause within bus tender contracts where the oil price is one parameter.

**6. Please describe the public transport connection of the (main) airport with the city centre.**

Mode	Distance	Travel time	Frequency (peak)	Single fare (EUR)	Operated by public, or private company
Track based	None				
Bus	20km	0.30	10 min	10€	Private

**7. Passenger satisfaction:**

- **Do you measure passenger satisfaction? Yes**
- **If yes how? Interviews, Internet polls and surveys**
- **What are basic viewpoints/criteria for the survey (on what criteria do you ask/evaluate)?**

In our onboard surveys we ask the question: "On a scale from 1 to 5, how satisfied are you with your latest public transport trip?"

In our telephone surveys, we ask the question: "On a scale from 1 to 5, how happy are you with public transport in general (in your area)?"

Passenger satisfaction influence payment for bus subcontractors

- **How often is it measured? Yearly**

**8. Transport model:**

- **Do you use a transport model for planning or evaluation of projects?**

Sometimes

- **If yes, which one and for what do you use?**

Visum is used for some of strategic long-term plans

- **How is the model fed with data, and how is data made available?**

Data for the Visum model comes from many different sources, traffic-counting, transport-surveys, land-use data, population data, municipal development plans etc.

The model is available for planners and consultants working for the municipalities within Göteborg area, for Västtrafik and for the Public Transport Authority of Region Västra Götaland



- **How often is the model updated?**

Irregularly

## **B) INSTITUTIONAL STRUCTURE, FUNCTIONAL QUESTIONS**

Questionnaire about the local and regional institutions and their functions

### **1. Who are local and regional competent authorities/institutions regarding transportation in your MR?**

Each of the 21 regions in Sweden have a Public Transport Authority. Most regions also have a Public Transport Company that takes care of customer service, route-planning, ticketing-systems, and operation tenders. In Region Västra Götaland the company is Västtrafik, which is fully owned by the Region.

### **2. Please describe their service competences, responsibilities and decision making processes.**

Local and regional public transport in Sweden is subsidized roughly 50 % by the regional authority. The budget for public transport development is set by the annual budget of the Regional Authority, which also encompasses healthcare, medicare, culture, regional development etc. For Region Västra Götaland, the subsidies of Västtrafik is roughly 15 % of the total Regional budget. The Regional Public Transport Authority sets the annual budget and the overall parameters for Västtrafik.

Västtrafik then takes care of “the rest” within given goals and parameters: tenders for bus, tram and train operations, route-planning, customer relations, ticketing system, information system, ticketing control etc.

### **3. Is there any transport authority in your city/region/MR?**

Yes, se 2. Above.

- **If yes, on which level: city/region/MR (i.e. transport association),**

Region Västra Götaland, with 1,5 million inhabitants and 200 by 200 km area

- **What are the limits of a transport authority (territorial and service oriented /i.e. taxi, railway, etc./)?**

The Public Transport Authority is responsible for local and regional public transport by bus, tram, train and ferry, meaning everything except national rail, taxis, dedicated school-buses, and commercial transport such as the airport-bus.

### **4. Is there a cooperation between city and region in terms of transport and/or land use planning? If yes, please describe it briefly (common tariff, integrated regional transport, etc.).**

The Public Transport Authority is responsible for both local and regional public transport, including the city of Göteborg, see question 2 and 3 above.



**5. How are competences between different institutions regulated regarding owner, supervisor, operator on local/regional level?**

The commercial operators are contracted through a tendering process. Contracts normally last for 8-10 years and can include one or many bus- or train routes. The companies employ the drivers, maintenance personnel and normally also own the vehicles. The exception is trams and trains which are owned by the Regional Authority

**6. What is the relationship between public authorities and private initiatives? How are new forms of transportation regulated (like carsharing, Uber, etc.)?**

Car sharing , Uber etc is not regulated within Public Transport Legislation.

Commercial bus operators may start commercial bus lines wherever they see fit, but they must report it to the Regional Authorities. Thus far, more or less only the Airport bus has utilized this possibility. Since the local and regional public transport routes are on averaged subsidized by 50 % it is hard to compete with commercial prices.

## C) QUESTIONS ON REGULATIONS

### 1. Parking:

- **What are local building regulations for parking places regarding new buildings/refurbishments?**

The norm is using minimum figures. Gothenburg has moved into using a mobility transport policy perspective on parking regulation. i.e what are the needs from a mobility perspective to or from a housing or service area. If there are excellent public transport services the policy states that provided parking should be very low. If public transport is not adequate the policy suggest car sharing etc before increased parking possibilities. Also time shift parking scheme in use where residents could rent night time parking and commuters could rent day time parking thereby sharing a car parking space. These policy recommendations are very new.

Minimum parking places is generally between 1 space per flat up to 1,5 spaces in the metropolitan area. There is no common regional parking policy. In Gothenburg minimum parking policy could be as low as 0,2 spaces per flat if bike parking spaces and car sharing is provided.

It is in the interest of the building company to limit number of parking spaces due to cost but at the same time proved sufficient numbers to keep the new build attractive. We would like a divide cost of parking from cost of housing to provide the market forces to regulate the real cost of parking in regard of supply and demand.

- **How do local regulations serve transport policies?**

See above

- **What are basic regulations regarding parking on public space? (tariff, parking permits, local beneficiaries, etc.)**





Very varied. Gothenburg city center limited in time on street parking to enable visits but not commuter parking. Reduced cost for parking provided by an employer should be entered in the employees tax form as a taxable benefit. On a regional level parking is often free on street parking.

- **What is the relationship between parking houses vs. parking on public space? Are there any contradictions?**

Parking houses mainly in city centres where there is limited on street parking. Possibility to purchase monthly permits. No time limits.

- **Please describe the basic parking discounts if there are any (on engine EUR category, emission, propulsion system, disabled, etc.)**

Only special parking permit for disabled and on specified spaces.

- **What are major milestones in parking policy in the recent past and in near future? (enlarging parking zones, reducing discounts, handling of exceptions, etc.)**

See above

- **P+R, B+R**

- **How many P+R and B+R spaces are there in the city/region?**

The figures in the chart here are approximately the total number of parking lots in City of Göteborg and the Göteborg region (including Göteborg and 12 municipalities around Göteborg) in 2017. The numbers are not exact.

These parking lots are situated in approximately 200 parking places totally, in Göteborg and region of Göteborg.

	City	Region
P+R	2400	9700
B+R	900	6500

- **Please describe your P+R, B+R standards.** If the municipality should have financing support there are certain demands of quality to be met by the parking spaces. The demands are:

#### Paved surface

- The P&R should be well delimited to surrounding areas
- The P&R must have hard surface and curb stone around
- The P&R must have the parking lots well marked on the ground for more efficient use of the parking place.

#### Lighting

- The P&R must meet the requirements of The configuration of roads and streets regarding good lightening (Vägars och gators utformning VGU)

#### Accessibility for disabled

- The P&R must meet the requirements of The configuration of roads and streets regarding accessibility for disabled (Vägars och gators utformning VGU)

#### Bike parking



- A least 50 % of the parking lots for bikes must have roof over

#### Smart digitalized parking

- Some P&R are equipped with real time information for counting and showing number of free parking lots and real time information on public transport

#### Other

- The P&R should be less than 250 meters from station or public transport stop and should be visible from the station or stop
  - If the P&R is more of temporary art, it could have lower standard
  - The P&R should have information signs and should have signpost from public road
  - Parking at least 24 hours should be possible
- **What are general principles (strategy) for developing P+R and B+R spaces?**
- There is a study made of the needs of developing parking until 2025 (Behovsutredningen) where the following strategies are:
- Based on the strategy Attractive P&R from K2020 (a strategy for public transport) the needs for development of parking is done for each municipality in the region. The needs are based mostly on:
- Changes in land use, building plans for houses, new infrastructure etc
  - Strategies for public transport and municipalities such as Målbild Tåg 2035 (Strategy for train traffic until 2035) , Koll 2035 (Public transport strategy for Göteborg Mölndal Partille until 2035) etc
  - The present use of P&R and B& R.
  - Travel time for public transport compared to travel time for car
  - The zones for ticket/fares
  - The Swedish Transport Administration's suggestions for developing P&R along the state owned roads in the region, written 2015
  - Development and improvement for B&R

## 2. Tourist coaches/hop on hop off services:

- **What are basic regulations of entering and moving around the city?**

No restrictions on entering the city providing the coach fulfils LEZ restrictions.

- **How do you regulate stops, waiting areas, terminals?**

There are designated waiting areas for touristic coaches. No hop on hop off services.

- **Are you contracting operators? If yes, what are basic contracting options for touristic services (using levies, taxes, etc.)?**

No

- **Is the usage of bus lanes allowed for those vehicles?**

No



### 3. Congestion charge

- **Do you have a congestion charge, or do you plan to introduce one?** Congestion tax
- **If yes, for what purpose?** Financial, environmental and handling congestion.
- **What are basic impacts, experiences with your existing congestion charging system?** 10-15% decrease in traffic, better prediction for travel time. And not excepted by everyone...
- **What are revenues used for?** Implementing infrastructure projects within the westsweden package.

### 4. LEZ (low emission zone)

- **Do you have a LEZ, or do you plan to introduce one?** Yes, for heavy vehicles. New law enabling municipalities to introduce restrictions for light vehicles. Göteborg decided against.
- **If yes, on what principle is it working?**
- **What are your experiences, and future plans with LEZ?**

### 5. Bus lane usage

**Do you have dedicated bus lanes?** Yes

**If yes, who are allowed to use the bus lanes (taxi, bicycle, carsharing, etc.)?** Taxi in some cases.

**How are bus lanes supervised to avoid inappropriate usage?** They aren't, except from signs.

**Do you have any other dedicated type of lanes (i.e.: HOV lane, temporary parking lane, etc.)?** Yes lanes are dedicated for Ambulances, Police and Fire brigade

## D) ALTERNATIVE SYSTEMS, FUTURE

### 1. Strategic plans:

- **What is your planning horizon in transport developments, strategies?**  
2035 with some "outlook" towards 2050.
- **What are your city's/region's/MR's transport policy goals?**  
Increase public transport usage by up to 75 % for Göteborg city in 2035 compared to 2015.
- **Are you using a SUMP methodology, and if yes, on what phase are you currently working on?**  
No.

### 2. E-mobility:

- **What is the situation of the e-mobility (number of e-cars/hybrids, charging stations, etc.) in your MR?** No inventory has been made for chargingstations. For public use



stations are connected to an interactive map. National number of e-car is 2-3% of a total 3,5 million vehicles. Hybrid a lot more.

- **What are basic incentives for e-mobility on local/regional/state level?** National bonus malus system. Superenvironmental system giving reduction in tax (refund). New system as from 1<sup>st</sup> of July tax malus system.  
e-bike 25% reduction in purchase at national level.
- **Is there any difference to conventionally fuelled cars regarding public space usage/parking?** No, not possible legally to reserve parking for different propulsion system. Private actors can provide charging.
- **Who is building/financing the grid to the charging stations?** Either private or public.
- **Who is building/operating charging points in your city/region?** Either private or public.
- **What are future development plans regarding e-mobility?** No policy decided.

### 3. Carsharing, bikesharing

- **Is there any carsharing/bikesharing scheme in operation in your MR?** Yes, both.
- **If yes, with which propulsion system (conventional/electric/mixed) is it running?** Bike is conventional propulsion (next generation electric), for car is both electric, and fossilbased propulsion in use.
- **Who is running the service: public/private?** Car is run by private companies and or groups of locals, Bike is run by the city.
- **How is it regulated, is it a public task, or a free market initiative (or something in-between)?** Something in between.
- **How is bus lane usage regulated for carsharing vehicles?** Excluded normally. If 2 passengers in car is some buslanes open.

### 4. Autonomous vehicles:

- **How actual is the question regarding autonomous vehicles in your MR?**  
We are following the technological development.
- **Is there any regulation for autonomous vehicles?**  
Not for public transport. No policy decided yet. Big future challenge.
- **Is the infrastructure fitted? What steps do you plan in this regard?**  
No. We are involved in a few Research and development projects, but have no immediate plans for actual infrastructure modifications.

### 5. MAAS (Mobility as a Service)

- **Is there any kind of MAAS in your MR?**  
Yes
- **If yes, what is the role of the transport authority in this scheme?**  
None, it is a project.



- **Is the scheme run by public or private operators?**

Private and research initiatives. Rice institute, <https://kompis.me/maas-som-en-del-utav-boendet-kommer-till-guldheden-goteborg/>

- **If there isn't any MAAS scheme yet, are there plans to introduce one?**

## E) GOOD PRACTICE PRESENTATION

Please try and give a good example of how you/others manage transportation in your MR. Try and describe shortly the reasons for being a good practice. You can include links, pictures. (max. 1 page).

<b>Good practice</b>
Name:  <b>ElectriCity – cooperation on tomorrow's public transport</b>
Context:  How do we create preconditions for sustainable and attractive public transport? And what new opportunities arise for urban planning when noise and exhaust fumes disappear? In Gothenburg, Sweden 15 partners from industry, academy and society are now working together to develop, test and demonstrate new solutions for the future. This cooperation goes under the name of ElectriCity. The testing and evaluation of electric bus operations is a central part of ElectriCity. On June 15, 2015 a new bus service – route 55 – started between the two campuses of Chalmers University of Technology in Johanneberg and Lindholmen. The three demo buses run on renewable electricity and are extremely energy-efficient, quiet and entirely emission-free. On board the buses, passengers have free access to the latest technology. The bus stop at Teknikgatan on Lindholmen is indoors. Quiet and emission-free public transport can operate in areas currently closed to traffic, thus opening up new scope for planning in cities and towns. Apart from the three all-electric demo buses, the route is also served by a number of electric hybrid buses powered by electricity for about 70 % of the route.
Main stakeholders involved: <b>Collaboration Partners</b> The Volvo Group Västra Götalandsregionen Västtrafik The city of Gothenburg Chalmers University of Technology Swedish Energy Agency Johanneberg Science Park Lindholmen Science Park Göteborg Energi Keolis



Ålvstranden Utveckling  
Akademiska Hus  
Chalmersfastigheter  
Ericsson

Web links: <https://www.electricitygoteborg.se/en>

Why is the practice considered as 'good'?

By collaborating with a large and varied group of stakeholders new solutions can be developed. Not only an electric bus route but also urban planning, research etc creating a more holistic approach to facilitating change.



HELSINKI

# SMART-MR INVENTORY ON MANAGING TRANSPORTATION

Helsinki

PP(s) responsible: BKK Centre for Budapest Transport



### General instructions on the level city/region/MR:

In the SMART-MR project the majority of the questions and data is related to the Metropolitan region (MR) which means the metropolitan city and the surrounding region together, thus where not indicated in the following Inventory, please describe your MR. If there is a lack of data, or information, please indicate, whether you refer to the city, or region itself. In some questions specific data is asked about the city or region separately, in these cases region is meant the area outside the city.

### A) QUESTIONS ON DATA ABOUT TRANSPORTATION

#### 1. General data about the city/region

	City of Helsinki	Region
Area (km <sup>2</sup> )	215	3940
Population	635 000	1,43 million
Density (capita/km <sup>2</sup> )	2950	360

#### 2. Public transport network and performance in the city (the latest possible data, data from 2016):

Year:	Network length (km) (2016) <sup>1</sup>	Number of vehicles	Passengers transported/year	Passenger km/year
Metro	35 (2017)	47	67.5 million	425.4 million
Suburban rail	139	117	61.0 million	650.7 million
Tramway	49	128	60.2 million	132.4 million
Trolleybus	-	-	-	-
Bus	2294	1457	179.3 million	1288.3 million
Other (ferry)	5	5	2.1 million	5.7 million
Total	2522	1754	370.1 million	2502,5 million

<sup>1</sup> Total length of links where there is at least one line

#### 3. Questions on the bus system (city, trolleybuses excluded):

- What is the average age of the buses? 5,5 years (2016)
- What propulsion system do buses use? (If exact numbers are not available, please indicate with "+" or "-" whether the system is available.)

Propulsion system	Number of buses
Diesel EUR III or lower	48
Diesel EUR IV	26





Diesel EUR V + EEV	570
Diesel EUR VI or higher	590
CNG	25
Hybrid (diesel/electric)	7
Full electric	10
Other (please specify)	2 (Ethanol)

• **Modal split**

What is the modal split in your city/region (share of PT, cars, bicycles, taxi, walking, etc.)?

	walking (%)	cycling (%)	PT	passenger car (as a driver + as a passenger)	other
Helsinki City (2017)	30	7	26	35	2
Helsinki Region	27	6	18	47	2

- **How and out of which data is the modal split calculated (no. of passengers, or passenger km)?** Both, above figures are percentages of trips made
- **How often is the modal split calculation updated?** 4-6 years, the above are from a nation-wide research conducted in 2016, a regional study will be conducted in autumn this year (2018)

4. Please describe the data sources which you use for statistics (if demand, supply and fleet data sources are common, please feel free to join cells):

	Demand data	Supply data	Fleet data
What are general data sources, which you use?	Passenger counts	Operation plan by Helsinki Region Transport HSL	Operation plan by Helsinki Region Transport HSL
What kind of (strategic) agreements do you have with data suppliers?	In open ticketing system: The transport operators own the counting devices, the counting operator processes the results from the raw data for Helsinki Region Transport HSL.	Helsinki Region Transport HSL generates the data	Helsinki Region Transport HSL generates the data



	In closed ticketing system: The system is owned and operated by Helsinki Region Transport HSL		
What kind of long time data series do you have, and for which period? (E.g. for the past 10 years, from 1970, etc.)	<p>Comparable information from passenger counts yearly since 2010</p> <p>Comparable information of modal split in Helsinki city yearly since 2012</p> <p>Comparable information of modal split in Helsinki Region 2008 and 2012 (Travel Survey in Helsinki Region) and 2016 (National Travel Survey)</p>		
Which part of the data is open and how is it publicly accessible?	<p>some of the data is accessible, e.g. national survey data (<a href="https://www.liikennevirasto.fi/ti/lastot/henkiloliikennetutkimus/itsepalveluanalysit#.Wtb20Yhua71">https://www.liikennevirasto.fi/ti/lastot/henkiloliikennetutkimus/itsepalveluanalysit#.Wtb20Yhua71</a>) All reports are in Finnish</p>		

##### 5. What kind of tariff and ticketing system do you use in your city/region?

- **Is there an integrated ticketing system?** Yes
- **Is the ticketing system paper based or electronic?** Electronic (single tickets can be bought as paper versions from automats and bus drivers)
- **Is the pricing system km based, ring/zone based, or other?** Zone-based
- **Do you use a single ticket per ride or is it time-based?** Both are in use. You can upload to your electronic travel card either value or time and use them both.
- **What are the basic ticket/pass types being used?** Monthly (time period that can be chosen from 14 days on including unlimited access of PT) and single tickets
- **What is the price of a single ticket/monthly pass within the city (in EUR)?**
  - the price of a single ticket varies between 2.20-3.20 € depending on where/how bought
    - mobile ticket or travel card: 2.20€
    - bought in a bus from the driver: 3.20€
    - from an automat or an SMS ticket: 2.90€
    - a tram ticket from an automat: 2.50€
    - ferry ticket valid for 12 hours: 5€



- monthly pass 54,70€/30 days in Helsinki and 106,50€/30 in capital region (Helsinki, Espoo, Vantaa, Kauniainen)
- **What is the most used ticket/pass and what is its price (if different from the previous question)?** Period ticket. The most common of these is the monthly ticket in Helsinki, price as previously stated 54,70€/30 days.
- **What are basic discounts used (students, elderly, etc.)?** Children 7-16 (-50%), students (-50%), pensioners (-25-50%), people with a certain disability (-25%), free of charge: children under 7 years, veterans with a disability, blind (if sight disability at least 50%), people traveling with a wheelchair and in certain cases their escort
- **Are there any changes in the ticketing system foreseen?** The zone limits will be changed, the current follows the municipality borders (the new will not), estimated in 2019
- **What is the current average petrol price (EUR/l)?** Average prices in Helsinki in April 2018: 95E 1.456€/L, 98E 1.548€/L and Diesel 1.319€/L.
- **Are your bus service tender contracts (if available) dependent on the petrol price? If yes, how?** Yes, they is an index that is used to calculate possible increases in cost and it includes the price of petrol

**6. Please describe the public transport connection of the (main) airport with the city centre.**

Mode	Distance	Travel time	Frenquency (peak)	Single fare (EUR)	Operated by public, or private company
Track based	18 km	27-32	10 min	4.20-5.50 (4.20= mobile ticket/ticket with a travel card, 5=bought from an automat, 5.50=bought from the driver)	public service
Bus	~25	45 min	15-30 min	5.50€	(operated by a bus operator company)

**7. Passenger satisfaction:**

- **Do you measure passenger satisfaction?** Yes
- **If yes how?** Regular surveys, questionnaires given out in buses, trams, metro and commuter traffic. Approximately 55,000 HSL passangers corresponds to the passenger satisfaction survey.  
  
In addition, the international BEST -survey for satisfaction of citizen (general survey) is being made also with questions on transportation.



- **What are basic viewpoints/criteria for the survey (on what criteria do you ask/evaluate)?**  
General satisfaction, travel comfort, transporters, disturbances, staying on schedule, getting information, scheduling suitability, service level, etc.
- **How often is it measured?** Yearly, through the year from January to November. In passenger ferry services, passenger satisfaction is examined from June to August.

#### 8. Transport model:

- **Do you use a transport model for planning or evaluation of projects?** Yes
- **If yes, which one and for what do you use?** HELMET-model, for modelling strategic plans and its impact assessment, and evaluation of different versions of plans. City of Helsinki uses also EMME model for detail plans.
- **How is the model fed with data, and how is data made available?** The model uses different land use and transport related data, population and jobs, transport network (roads, rails, etc.) the Helsinki Region (of approximately 4000 km<sup>2</sup>) is divided into 1753 areas.
- **How often is the model updated?** Constantly on small scale, travel patterns depend on data available so its update schedule follows the survey cycle

## B) INSTITUTIONAL STRUCTURE, FUNCTIONAL QUESTIONS

### Questionnaire about the local and regional institutions and their functions

1. **Who are local and regional competent authorities/institutions regarding transportation in your MR?** Helsinki-Uusimaa Regional council (HURC), Helsinki Region Transport (HSL) owned by 9 municipalities, Helsinki City Transport (HKL) and the municipalities. There are also national level operators, Finnish Transport Agency (FTA), ELY-Keskus (Centre for Economic Development, Transport and the Environment) and VR Group.
2. **Please describe their service competences, responsibilities and decision making processes.**

The main planning organizations in Helsinki Metropolitan Region for transport planning are HURC, HSL and FTA. HURC is responsible for regional strategic planning including Regional Land Use Plan and the long term Transport System planning of Helsinki-Uusimaa Region. HURC area covers 26 municipalities and has a political steering board and representatives from municipalities.

In Helsinki Region there are three main public transport providers: HSL, HKL (metro, tram, ferry, busses) and VR Group (rail transport). In larger Uusimaa region, including Helsinki Metropolitan Region, public transport providers are municipalities and ELY-Keskus.

Helsinki Region Transport (HSL) plans and organizes public transport in the region and improves its operating conditions. It is responsible for the preparation of the Helsinki Region Transport System Plan (HLJ). It also procures bus, tram, Metro, ferry and commuter train



services and approves the public transport fare and ticketing system as well as public transport fares. HSL is also responsible for public transport marketing and passenger information and it organizes ticket sales and is responsible for ticket inspections. HSL area covers its 7 owner municipalities: Helsinki, Espoo, Kauniainen, Vantaa, Kerava, Kirkkonummi and Sipoo. It has a political steering board. HLJ planning area covers 14 municipalities in Helsinki Region and it has both political and civil service commission.

HKL is responsible for running the trams and the metro as well as construction and maintenance of track, stations and depots.

FTA maintains roadways, railways and waterways in Finland and is in charge of the comprehensive development of the national level transport system.

VR Group's main task is to provide its customers train travel and logistics services. VR is a market-based company.

Municipalities provide technical services include planning, maintenance of streets, public land, construction of buildings and infrastructure and transport.

**3. Is there any transport authority in your city/region/MR? Yes**

- **If yes, on which level:** city/region/MR (i.e. transport association), Regional level – HSL, city level - HKL
- **What are the limits of a transport authority (territorial and service oriented /i.e. taxi, railway, etc./)?** HSL: Territorial level – municipalities that have joined to HSL. HSL is focusing on planning and procuring the public transport services. HKL: both, territory is the city of Helsinki and services of tram & metro.

**4. Is there a cooperation between city and region in terms of transport and/or land use planning? If yes, please describe it briefly (common tariff, integrated regional transport, etc.).**

HSL's latest plans HLJ2015 and MAL2019 (now being prepared) are part of the land use, housing and transport co-operation in Helsinki region.

**5. How are competences between different institutions regulated regarding owner, supervisor, operator on local/regional level?**

HSL is the main organization in charge of procuring transport services from commercial operators and supervises the operators. HSL is able to develop the quality of transport services with its procurement criteria.

**6. What is the relationship between public authorities and private initiatives? How are new forms of transportation regulated (like carsharing, Uber, etc.)?**

They have been operating separately but now the trend is towards private-public collaboration. There is a reform of transport law called "Liikennekaari" (2017). It will revise legislation regulating the transport market. One purpose of the reform is to increase the use of digital technology and it brings together the laws on the traffic market and services in the arena. It also proposes substantial changes to the taxi system by curbing regulation.



## C) QUESTIONS ON REGULATIONS

### 1. Parking:

- **What are local building regulations for parking places regarding new buildings/refurbishments?** It varies within cities/municipalities and their land use plans depending on the position in urban structure and also within types of housing (apartments less, 1 space – detached houses more, even 2 spaces). It is mainstream to have a 1 parking space/90-125 floor cubic meters.
- **How do local regulations serve transport policies?** Parking policy in Helsinki supports ecologically sustainable and comfortable urban structure and mobility. Idea is to reduce the parking places in city centres and areas within trunk routes of public transport. For example there is a pilot 2014-2018 in Vantaa, in the areas where you can rely on rail transport (1 km radius from station) parking norm is at least 1 parking space per 130 cubic meters of new housing.
- **What are basic regulations regarding parking on public space? (tariff, parking permits, local beneficiaries, etc.)** There is a zone based tariff system for parking in cities. The prices are higher in city centres. There is also a parking permit for residents with certain cost per year.
- **What is the relationship between parking houses vs. parking on public space? Are there any contradictions?** Parking houses are mainly managed by commercial companies and the prices are higher.
- **Please describe the basic parking discounts if there are any (on engine EUR category, emission, propulsion system, disabled, etc.)** The City of Helsinki grants a 50% discount on parking fees for low-emission cars and fully powered L-category vehicles. A parking discount is available if the vehicle meets the emission criteria set by the City of Helsinki. (Euro 5 or full electric cars).
- **What are major milestones in parking policy in the recent past and in near future? (enlarging parking zones, reducing discounts, handling of exceptions, etc.)**

The latest parking policy guidelines in HLJ 2015 plan were: Strengthen the “one who benefits will pay” principle in developing the parking policy of the region; Define the regional principles for the parking of business premises; Improving parking standards and promoting centralized parking solutions.

- **P+R, B+R**
  - **How many P+R and B+R spaces are there in the city/region?**

2016	City	Region
P+R	3579	12530
B+R	4462	13381

- **Is the usage of P+R and B+R spaces free or priced?** This varies, mostly free but some spaces are priced. In some spaces the prices are reduced with use of travel card.
- **Please describe your P+R, B+R standards.**

The standards depend on the P&R place. In the Helsinki Region Park & Ride program of measures (2016) P&R places were classified based on their regional importance. The



criteria were: number of Park & Ride spaces in 2025, share of users from outside the municipality of location in the Park & Ride model analyses, and location. There are 30 regionally important Park & Ride areas, mostly located at railway and Metro stations. The report (in Finnish but with an English abstract) can be found at: [https://www.hsl.fi/sites/default/files/uploads/hsl\\_julkaisu\\_8\\_2017.pdf](https://www.hsl.fi/sites/default/files/uploads/hsl_julkaisu_8_2017.pdf)

o **What are general principles (strategy) for developing P+R and B+R spaces?**

Principles from Helsinki Region Park and ride programme of measures (2016):

- Park & Ride is developed with customers in mind;
- Park & Ride is an intelligent service;
- Park & Ride schemes are implemented on the beneficiary pays principle;
- The responsibility for the overall development of Park & Ride is clearly defined and responsible actors for the development of each Park & Ride area are designated;
- Shared parking is favoured whenever possible;
- Park & Ride supports the use of sustainable modes of transport and achievement of emission targets;
- 8,200 new Park & Ride spaces for bicycles and 6,000 spaces for cars by 2025.

The work also set out regional guidelines for Park & Ride information, pricing of Park & Ride and shared use of parking spaces. An intelligent information system for Park & Ride is being developed to better serve the needs of people, to distribute demand across Park & Ride areas and to make their use more effective. Park & Ride should be based on Travel Card verification and preparations are made for pricing of Park & Ride in the core area. Shared parking is favoured in particular in areas around stations, where the need for more compact land use is high and structural parking is used.

**2. Tourist coaches/hop on hop off services:**

- **What are basic regulations of entering and moving around the city? Hop on buses** have agreed routes along which they operate.
- **How do you regulate stops, waiting areas, terminals?** Terminals and stops are negotiated and decided with transport planning department of the City of Helsinki. Terminals require special traffic signs in accordance with the Road Traffic Act and it is so reserved for the services. Stops are in places where is usually a parking prohibition, a HSL's bus stop or a tourist bus stop. Stop signs are implemented by these tourist coach companies.
- **Are you contracting operators?** If yes, what are basic contracting options for touristic services (using levies, taxes, etc.)? No other contracts than the agreed routes.
- **Is the usage of bus lanes allowed for those vehicles?** Yes.

**3. Congestion charge**

- **Do you have a congestion charge, or do you plan to introduce one?** No decisions on it have been made, but it is under negotiations.
- **If yes, for what purpose?**



- What are basic impacts, experiences with your existing congestion charging system?
- What are revenues used for? –

#### 4. LEZ (low emission zone)

- Do you have a LEZ, or do you plan to introduce one? Yes, in Helsinki city centre
- If yes, on what principle is it working? You have to have 95% of your fleet operating in LEZ EURO 6 or better, and max 5% of EEV, so the peak hours can be handled with EEV's if necessary
- What are your experiences, and future plans with LEZ?

According to a survey conducted at the Helsinki City Environment Center, environmental zones can reduce particulate emissions from diesel engines. However, the impact on urban air quality is limited. The benefits of the environmental zone are most clearly visible in the reduction of black coal in incomplete combustion. Black coal has been reported to be associated with traffic-related health hazards. In Helsinki, street dust has a greater impact on air quality than in several Central European cities.

According to the Air Quality Plan, the plan is to find out, by the end of 2020, an extension of the LEZ to other traffic and the inclusion of emission reduction in congestion charge. In addition also the latest Carbon Neutral Helsinki 2035 programme (2018) proposes to extension of the LEZ zone and inclusion of other vehicle groups and CO2 criteria.

#### 5. Bus lane usage:

- Do you have dedicated bus lanes? Yes
- If yes, who are allowed to use the bus lanes (taxi, bicycle, carsharing, etc.)? Taxis and buses. Also bus lanes in Länsiväylä are opened 1.4.2018 for low emission cars, trucks and delivery trucks, because there isn't that much bus traffic left due to Westmetro.
- How are bus lanes supervised to avoid inappropriate usage? By police.
- Do you have any other dedicated type of lanes (i.e.: HOV lane, temporary parking lane, etc.)? No

**Kommentoinut [FB(1)]:** The question is meant rather for individuals, than companies.

## D) ALTERNATIVE SYSTEMS, FUTURE

### 1. Strategic plans:

- What is your planning horizon in transport developments, strategies? Planning horizon in the MAL2019 -plan for Helsinki Region, which combines land use, housing and transportation, is 2050. The infrastructure projects head till 2030.
- What are your city's/region's/MR's transport policy goals? Goals are regional vitality, competitiveness, attractiveness and low carbon transportation.





- **Are you using a SUMP methodology, and if yes, on what phase are you currently working on?** Yes, planning and impact assessment (step 6: developing effective packages of measures)

## 2. E-mobility:

- **What is the situation of the e-mobility (number of e-cars/hybrids, charging stations, etc.) in your MR?** In Helsinki Capital Region (4 cities) from passenger cars in use there are about 800 electric cars, 3300 petrol/electric (plug in hybrid) and 160 diesel/electric (plug in hybrid). Total amount of passenger cars is about 440 000. (Statistics 31.3.2018). On national level the amount of e-cars doubled in 2017.

Unofficial statistical number of charging stations is 205 in Helsinki Capital Region (4 cities), but there can be more.

- **What are basic incentives for e-mobility on local/regional/state level?** On national level energy subsidies for electric cars were granted first to companies during 2011-2017; subsidy rate was about 20-25% per vehicle. According to new transport law during 2018-2021 it is possible for private persons to get EUR 2,000 subsidy for full electric cars.
- **Is there any difference to conventionally fuelled cars regarding public space usage/parking?** No. In some P&R places the best places are reserved for charging points of e-vehicles.
- **Who is building/financing the grid to the charging stations?**

The national network is being built by many operators like electric companies and the largest retailer companies.

On national level the energy support has been granted to charging systems in order to increase the charging network 2011-2017. New subsidies have been granted since 2017. There is a developing company which distributes subsidies to companies.

- **Who is building/operating charging points in your city/region?**

In region there are several operators, like cities for P&R places, energy companies and large retailers and stores for their customers.

## 3. What are future development plans regarding e-mobility?

In national level there is now a strong support towards e-mobility. The lately set target of the government is to have 250 000 e-cars by 2030. It has been seen one of the main measures to reach the climate targets of transport sector.

## 4. Carsharing, bikesharing

- a. **Is there any carsharing/bikesharing scheme in operation in your MR?**

### Carsharing:

In car sharing there are many commercial operators. Some of them offer floating cars for one-way journeys and they can be rented via an App. There is also carsharing for e-cars in station areas.

Some housing companies own cars to be shared by residents and apartment owners.

There is a new company which offers services (an app) for car-sharing with private cars.

### Bikesharing

HSL offers a city bike system for summer season (April - November) There are 150 city bike stations in Helsinki and 70 in Espoo with 35 more to be added during the summer 2018. Altogether there are 2,550 city bikes in these two cities. City of



Vantaa offers 100 citybikes for citizen. There are also a couple of commercial operators bringing their floating city bike systems to Vantaa this year.

**a. If yes, with which propulsion system (conventional/electric/mixed) is it running?**

Mostly conventional but also some hybrids and one company has only e-cars.

**b. Who is running the service: public/private?**

Private.

**c. How is it regulated, is it a public task, or a free market initiative (or something in-between)?**

Free market.

**d. How is bus lane usage regulated for carsharing vehicles?**

Bus lanes can not be used.

**5. Autonomous vehicles:**

**a. How actual is the question regarding autonomous vehicles in your MR?**

There has been a couple of pilot projects, like the autonomous bus in housing fair in Vantaa (2016) and SOHJOA project which tests autonomous buses in nordic city environment (pilots in Helsinki, Espoo, Tampere in 2016-2018).



Picture: SOHJOA-pilot project is testing autonomous electric in nordic street environment.

**• Is there any regulation for autonomous vehicles?**

The current strategy of the Finnish Ministry of Transportation and Communication's allows testing of autonomous vehicles in the actual urban environments. This strategy gives Finland unique piloting possibilities, as legislation allows this type of piloting only in a few countries.

**• Is the infrastructure fitted? What steps do you plan in this regard?**

The results of the SOHJOA project will guide in recognizing the needs for developing infrastructure and doing these plans. They are not ready yet.

**6. MAAS (Mobility as a Service)**



- **Is there any kind of MAAS in your MR?**

Helsinki Region Transport (HSL) is developing MaaS services in Helsinki region.

There are a couple of commercial MaaS services in use, Whim and Kyyti, where passengers are able to combine public transport, taxi, car and city bikes. <https://whimapp.com/> and <https://www.kyyti.com/english.html>

- **If yes, what is the role of the transport authority in this scheme?**

HSL has just published their MaaS -open interface of public transport tickets for service providers in April 2018, first in the world.

- **Is the scheme run by public or private operators?**

Both, private and public (HSL).

- **If there isn't any MAAS scheme yet, are there plans to introduce one?**

#### E) GOOD PRACTICE PRESENTATION

Please try and give a good example of how you/others manage transportation in your MR. Try and describe shortly the reasons for being a good practice. You can include links, pictures. (max. 1 page).

<b>Good practice</b>
Name: <a href="#">HLJ2015 – Agreement on Regional Infrastructure Development Projects</a>
Context: As a part of Helsinki Region Transport system plan (HLJ2015) 14 municipalities of the region made the proposal on 16 most important infrastructure projects to develop transport system of the Helsinki region. It was made within large scale planning project with multi-level and cross-sectoral participation process in close cooperation with land use and housing sectors. Projects were named in the agreement which was signed between the State and Helsinki region municipalities also for agreeing on funding.



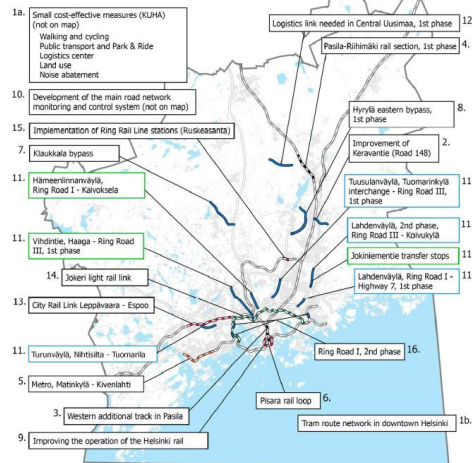
## Infrastructure development projects on a map

### Proposal for projects to be launched in 2015–2025

HLJ 2015 road and rail investments 2016-2025

- Rail line
- City Rail Link
- Metro
- Tramway
- Road project

- Packages of mid-sized road projects (on map)
- Competitiveness of public transport on road network
- Control of vehicular traffic congestion



Main stakeholders involved: Helsinki Region Transport (HSL), State, 14 municipalities of Helsinki Region

Web links: [https://www.hsl.fi/sites/default/files/uploads/hlj\\_2015\\_summary\\_0.pdf](https://www.hsl.fi/sites/default/files/uploads/hlj_2015_summary_0.pdf)

[https://www.hsl.fi/sites/default/files/uploads/hlj\\_2015\\_short\\_version\\_en.pdf](https://www.hsl.fi/sites/default/files/uploads/hlj_2015_short_version_en.pdf)

Why is the practice considered as 'good'? It

HLJ 2015 and its proposal for infrastructure projects are a strategic plan taking an overall view of the transport system in Helsinki region. The preparation of HLJ 2015 has been closely linked to the preparation of the Helsinki Region Land Use Plan and the Housing Strategy included in it. The plan helps to ensure the flow of traffic also in the future in all the 14 Helsinki region municipalities. The high rate of population growth in the region poses challenges for transport and the urban structure. The goal is to enable sustainable growth. The agreement also targets to equal decision of infrastructure projects between municipalities and it ensures funding from state.



LJUBLJANA

# SMART-MR INVENTORY ON MANAGING TRANSPORTATION

Ljubljana Urban Region

PP(s) responsible: BKK Centre for Budapest Transport



### General instructions on the level city/region/MR:

In the SMART-MR project the majority of the questions and data is related to the Metropolitan region (MR) which means the metropolitan city and the surrounding region together, thus where not indicated in the following Inventory, please describe your MR. If there is a lack of data, or information, please indicate, whether you refer to the city, or region itself. In some questions specific data is asked about the city or region separately, in these cases region is meant the area outside the city.

### A) QUESTIONS ON DATA ABOUT TRANSPORTATION

#### 1. General data about the city/region

	City	Region
Area (km <sup>2</sup> )	164	2170
Population	280310	257583
Density (capita/km <sup>2</sup> )	1712	119

#### 2. Public transport network and performance in the city (the latest possible data):

Year:	Network length (km)	Number of vehicles	Passengers transported/year	Passenger km/year
Metro	-	-	-	-
Suburban rail	30 km		no data on the city level	
Tramway	-	-	-	-
Trolleybus	-	-	-	-
Bus	190 km*	212	37,790,716 (2016)	no data
Other	-	-	-	-
Total	220 km	212		no data

\*Within city limits only. Some city bus lines have been extended beyond them.

#### 3. Questions on the bus system (city, trolleybuses excluded):

- What is the average age of the buses?  
8.75 years (31. 12. 2016)
- What propulsion system do buses use? (If exact numbers are not available, please indicate with "+" or "-" whether the system is available.)

Propulsion system	Number of buses
Diesel EUR III or lower	79
Diesel EUR IV	17
Diesel EUR V	35
Diesel EUR VI or higher	13
CNG	68



Hybrid (diesel/electric)	-
Full electric	-
Other (please specify)	-

#### 4. Modal split

- **What is the modal split in your city/region (share of PT, cars, bicycles, taxi, walking, etc.)?**

%	Walking	Bicycle	PT	Car
<b>City</b>	35	11	13	41
<b>Region</b>	27	3	8	62

Data are based on questionnaires (2013).

- **How and out of which data is the modal split calculated (no. of passengers, or passenger km)?**

Modal split data are based on questionnaires, the calculation is based on the number of daily journeys (on working day) made by the residents of the city/region (journeys made by the people living outside the region are not included).

- **How often is the modal split calculation updated?**

Only data from 2003 and 2013 are available.

#### 5. Please describe the data sources which you use for statistics (if demand, supply and fleet data sources are common, please feel free to join cells):

	Demand data	Supply data	Fleet data
<b>What are general data sources, which you use?</b>	Statistical Office of the Republic of Slovenia	Transport companies, Statistical Office, Ministry of infrastructure.	Transport companies
<b>What kind of (strategic) agreements do you have with data suppliers?</b>	Most of the data are available online for free.	Some of the data are available online, we also have good contacts with responsible persons.	Some of the data are available online, we also have good contacts with responsible persons.
<b>What kind of long time data series do you have, and for which period? (E.g. for the past 10 years, from 1970, etc.)</b>	Statistical data for the last 20 years are available online, some of the older ones are published in various publications of the Statistical Office.	Online statistical data are available for the last 10 or 20 years.	Data are scattered in various yearly reports. No long time data series is published.
<b>Which part of the data is open and how is it publicly accessible?</b>	See above.	See above.	See above.



## 6. What kind of tariff and ticketing system do you use in your city/region?

- **Is there an integrated ticketing system?**

Integrated ticketing system is only partly implemented. It is at disposal for secondary schools and university students only on the basis of monthly and yearly passes.

- **Is the ticketing system paper based or electronic?**

In the city buses electronic tickets (so called Urbana ticket) only are used. In the region ticketing system is partly paper based partly electronic.

- **Is the pricing system km based, ring/zone based, or other?**

There is uniform price within the City of Ljubljana. In the region, there is a combination of zone based and km based system.

- **Do you use a single ticket per ride or is it time-based?**

Within the city and the zone based area single tickets are time-based (90 min.). Km based tickets are per ride.

- **What are the basic ticket/pass types being used?**

There are monthly and yearly passes (in part of the region also weekly passes are available).

- **What is the price of a single ticket/monthly pass within the city (in EUR)?**

1.20/37.00.

- **What is the most used ticket/pass and what is its price (if different from the previous question)?**

-

- **What are basic discounts used (students, elderly, etc.)?**

Student and elderly monthly passes cost 20 EUR within the city limits.

- **Are there any changes in the ticketing system foreseen?**

Integrated ticketing system for all passengers is foreseen on national level in 2018.

- **What is the current average petrol price (EUR/l)?**

1.311 EUR/l

- **Are your bus service tender contracts (if available) dependent on the petrol price? If yes, how?**

Due to national bus tender contracts compensation could be changed in case of any operational costs change. Among other costs, also petrol price is relevant. .

## 7. Please describe the public transport connection of the (main) airport with the city centre.

Mode	Distance	Travel time	Frequency (peak)	Single fare (EUR)	Operated by public, or private company
Track based	-	-	-	-	No railway connection.





Bus	31 km	49 min.	60 min.	4.10	Cooperation between private and public bus companies.
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There are also shuttle (door to door) services available which are more popular. Price is 9 EUR.

#### 8. Passenger satisfaction:

- **Do you measure passenger satisfaction?**

Yes.

- **If yes how?**

There are regular inquiries of passengers 2 times per year. Additionally there is an online questionnaire available on the LPP (City owned PT provider) web page, passengers could evaluate every journey made by city bus (they should enter date and time of the journey and they can evaluate this journey by bus).

- **What are basic viewpoints/criteria for the survey (on what criteria do you ask/evaluate)?**

There are some permanent questions regarding service quality, punctuality, timetables etc. Additionally there are each year some questions regarding passenger satisfaction with new buses, new payment methods etc.

- **How often is it measured?**

Twice a year.

#### 9. Transport model:

- **Do you use a transport model for planning or evaluation of projects?**

Yes.

- **If yes, which one and for what do you use?**

It was used in the «Expert guidelines for the regulation of regional public transport » project study (finished in 2010). It was used to analyse the current situation and to evaluate the proposed plan for PPT in 2027.

- **How is the model fed with data, and how is data made available?**

Demographic, socio-economic and transport data were included. The traffic model used is a four-step model and allows precise traffic analyses, including re-distribution of journeys, induced traffic and choice of means of transport. It was prepared with the VISEVA software tool.

- **How often is the model updated?**

With the exception of the above mentioned study transport models were not used in frame of PPT planning process.

On national level, transport models are regularly updated.

## B) INSTITUTIONAL STRUCTURE, FUNCTIONAL QUESTIONS

### Questionnaire about the local and regional institutions and their functions



**1. Who are local and regional competent authorities/institutions regarding transportation in your MR?**

Local communities are responsible for local roads, city buses and school transportation. Regions are not administrative units in Slovenia. There are only strategic transportation plans elaborated on this level. The state is responsible for all bus services except city buses and for railways.

**2. Please describe their service competences, responsibilities and decision making processes.**

Relating PPT local communities are responsible for city buses only. The state (Ministry of Infrastructure) is responsible for all bus services except city buses and for railways.

**3. Is there any transport authority in your city/region/MR?**

No.

- If yes, on which level: city/region/MR (i.e. transport association),
  - What are the limits of a transport authority (territorial and service oriented /i.e. taxi, railway, etc./)?
- 4. Is there a cooperation between city and region in terms of transport and/or land use planning? If yes, please describe it briefly (common tariff, integrated regional transport, etc.).**

A project on P + R sites in Ljubljana Urban region was prepared in 2014 on regional level. This project was designed by the Regional Development Agency in cooperation with 15 municipalities.

In cooperation with City of Ljubljana and some of the neighbouring local communities city bus lines have been extended into these communities. In these cases also common tariff have been introduced.

**5. How are competences between different institutions regulated regarding owner, supervisor, operator on local/regional level?**

In the cases mentioned above trilateral agreements between national competent transport authorities, local communities and transport providers have been signed.

**6. What is the relationship between public authorities and private initiatives? How are new forms of transportation regulated (like carsharing, Uber, etc.)?**

Car sharing services are based on private initiatives. According to Slovenian legislation (Road Transport act) Uber services are not possible in Slovenia. Changes of Road Transport Act have been proposed by the government to make possible such kind of services. The proposed changes have not passed through the parliament procedure yet.

**C) QUESTIONS ON REGULATIONS**

**1. Parking:**

- What are local building regulations for parking places regarding new buildings/refurbishments?



Local building regulations for parking spaces are described in municipal spatial planning document ([OPN MOL](#)). For each type of building use, the exact number of required parking spaces is stated and is necessary for new building or for refurbishment. However, there are no parking requirements for buildings in parking zone 1. In parking zone 2, required numbers can be reduced for 50 – 70 %. Reductions for individual buildings are also possible by municipally-approved mobility plan.

- **How do local regulations serve transport policies?**

Currently, local (as well as national) building regulations do not actively encourage sustainable mobility, although municipality set ambitious goals in this regard. For example, apartments larger than 70 m<sup>2</sup> require minimum 2 parking spaces by local parking standards. There are no maximum parking standards on local or national level.

- **What are basic regulations regarding parking on public space? (tariff, parking permits, local beneficiaries, etc.)**

Ljubljana is divided into several parking zones within highway ring, where tariffs and/or time limit is introduced. Highest tariffs and shortest time of parking is in the centre, inside the inner ring road. Paid parking permits are valid in the area of residence and are available for permanent residents only.

- **What is the relationship between parking houses vs. parking on public space? Are there any contradictions?**

Parking houses are generally more expensive than on-street parking, but allow longer stay during the day. Usually, when the demand is high and on-street parking is full, there are still spots available in parking garages. We see no big contradictions between them.

Off-street parking on empty plots or abandoned construction sites is also common and offers the middle option between the two: duration is not restricted while price is comparable to parking garage. They are mostly operated by private companies.

- **Please describe the basic parking discounts if there are any (on engine EUR category, emission, propulsion system, disabled, etc.)**

There are benefits for disabled for parking. Parking is free for maximum 2 hours at on-street parking and on municipal streets. At public parking garages and off-street parking, prices are the same. <http://www.zsis.si/2017/03/06/novosti-pri-parkiranju-s-parkirno-karto-za-invalidne-v-ljubljani/>

Parking of electric carsharing cars Avant2Go is free at their designated street parking spots and in parking garages. In addition to that, parking of electric vehicles is free up to three hours when charging on charging stations in public space, while the cost of electricity might not be free.

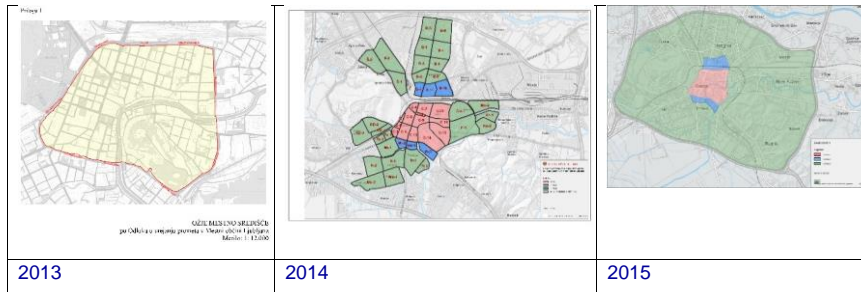
- **What are major milestones in parking policy in the recent past and in near future? (enlarging parking zones, reducing discounts, handling of exceptions, etc.)**

In recent years there have been several decrees and orders about parking in Ljubljana. Most important are Decrees about traffic management in City Municipality Ljubljana and subordinate Orders about setting the paid public parking areas.

The introduction of parking zones began in 2013, when "narrow city centre" parking zone in the inner road ring was defined.

In 2014 municipality defined three (3) parking zones (Zone 1 – Centre, Zone 2 – Bežigrad, Prule, Krakovo and Mirje, Zone 3 – periphery along the arteries).

In 2015 the Zone 3 has expanded to the highway ring ([source](#)).



The parking pricing, including resident abonents, is defined in the Order about setting the paid public parking areas. The last notable change was in March 2018, when the paid hours were prolonged in the centre of Ljubljana ([source](#)). Now parking is billable from 8 AM to 7 PM on weekdays and from 8 AM to 1 PM on Saturdays. On Sundays, parking is free.

In the future it is expected that parking zones could be enlarged across the highway ring, in nearby residential areas.

- **P+R, B+R**

- **How many P+R and B+R spaces are there in the city/region?**

	City	Region
P+R	1607 (5 sites: Barje, Dolgi Most, Ježica, Stožice, Studenec)	882 (6 sites: Škofljica, Ig, Sinja Gorica, Medvode, Domžale, Rodica)
B+R	176 (2 sites: P+R Dolgi Most, P+R Barje)	0 (zero) *

\*There are few good examples of B+R spaces and although some train and bus stations have bike racks (train station Ljubljana, individual bus or train stations), they hardly count at B+R. There are no B+R stations with enclosed bike storages in the city or region.

- **Is the usage of P+R and B+R spaces free or priced?**

The price for P+R is 1.2 € includes daily parking from 0:00 to 24:00 and two (2) bus rides that can only be redeemed in the same day. Regular price for a bus ticket is 1.2 € (valid for 90 minutes), therefore the use of P+R could be understood as some form of subsidy.

- **Please describe your P+R, B+R standards.**

There are specific guidelines for P+R network in MR ([link 1](#) and [link 2](#)). The minimum standard includes: wide parking spaces, bike racks, bin, lighting, trees, bus and/or train stop, roof and signage. Basic equipment adds automatic ticket machine for parking and public transportation, vending machine for Urbana city card (if applicable), gate barriers, occupancy sensors with occupancy signage at entrance and height barrier. Additional equipment as well as site customisation guidelines are also provided.

- **What are general principles (strategy) for developing P+R and B+R spaces?**

The development of P+R follows the comprehensive regional plan, developed in 2014, which envisioned the system of 25 P+R stations. Apart from being located by a railway or bus stops, they are generally positioned on the city perimeter, on important intermodal or road hubs and close to suburban residential centres. B+R spaces are only included partially in P+R.



## 2. Tourist coaches/hop on hop off services:

- **What are basic regulations of entering and moving around the city?**

Tourist coaches are able to enter and move around freely.

Until spring 2017 there was a municipal hop on hop off electrical street train named Urban, but is no longer in service. The service is planned to be reintroduced in 2018.

- **How do you regulate stops, waiting areas, terminals?**

There are six (6) parking spaces for buses that can accommodate 100 buses (Stožice, Tivoli 1, Tivoli 2, Bratislavska, Letališka, Dolgi most, Malence, AP Ljubljana, Leskovškova.

There are three (3) short time waiting areas with a total capacity of 10 buses (Streliška, Miklošičeva, Vilharjeva) in the city centre.

<https://www.visitljubljana.com/sl/medijsko-sredisce-b2b/organizatorji-potovani/promet-in-transport/turisticni-avtobusi/>

- **Are you contracting operators? If yes, what are basic contracting options for touristic services (using levies, taxes, etc.)?**

There are no contracted operators.

- **Is the usage of bus lanes allowed for those vehicles?**

No.

## 3. Congestion charge

- **Do you have a congestion charge, or do you plan to introduce one?**

No, there is no Congestion charge in Ljubljana and no plan to introduce one.

- **If yes, for what purpose?**

- **What are basic impacts, experiences with your existing congestion charging system?**

- **What are revenues used for?**

## 4. LEZ (low emission zone)

- **Do you have a LEZ, or do you plan to introduce one?**

No, there are no LEZ ([source](#)) in LUR and no publicly known plans to introduce it.

- **If yes, on what principle is it working?**

- **What are your experiences, and future plans with LEZ?**

Municipality utilises the traditional measures already and LEZ is not yet planned.

## 5. Bus lane usage

- **Do you have dedicated bus lanes?**

Yes, in Ljubljana there are dedicated yellow lines on the arteries leading towards city centre.

- **If yes, who are allowed to use the bus lanes (taxi, bicycle, carsharing, etc.)?**

Municipal buses, taxis and intervention vehicles.



- **How are bus lanes supervised to avoid inappropriate usage?**  
Municipal police department supervises it and issues penalty of 160 € for inappropriate use.
- **Do you have any other dedicated type of lanes (i.e.: HOV lane, temporary parking lane, etc.)?**  
No.

## D) ALTERNATIVE SYSTEMS, FUTURE

### 1. Strategic plans:

- **What is your planning horizon in transport developments, strategies?**  
In Ljubljana, Municipal spatial plan, that includes also transportation, is revised every 5 years. SUMP is also planned to be revised in 2.5 years and redone in 5 years.
- **What are your city's/region's/MR's transport policy goals?**  
In the process of SUMP, Ljubljana shaped the vision of transportation: «Successful cities of 21st century are cities that offer the highest quality of living environment to citizens and visitors. City municipality of Ljubljana will ensure a variety of sustainable modes of mobility, which will not use fossil fuels and will effectively use the space. The stress is on high-quality, efficient and affordable public transportation and good conditions for walking and cycling. It will take care for green and accessible to all public spaces and participation of citizens, that will encourage the healthy life-style. By this it will take care for quality living space, improvement of the air quality and wider possibilities for healthy lifestyle. Sustainable development of the city will attract people that want to live, work and spend their free time in healthy, accessible to all, green, creative, economically successful and pleasant town for all generations. This is Ljubljana of 21st century.»

Ljubljana Municipality pointed out 21 strategic goals in it's SUMP:

For pedestrians

1. Higher share and higher satisfaction of pedestrians on the level of entire city traffic.
2. Improved accessibility to the city centre for pedestrians
3. Higher share of school pupils that walk to school
4. Management of pedestrian areas that are accessible and safe for all users.

For Cyclists

1. Higher share of cyclists in the traffic and higher share of travels taken by bike
2. Improved accessibility for cyclers
3. Higher share of cyclers from neighbouring municipalities of Ljubljana Urban Region
4. Ensuring supporting infrastructure for cyclers.

For users of public transportation

1. The change of travel habits and higher share of public transportation users



2. Ensuring that buses travel faster than cars on the traffic arteries
3. Faster and more comfortable travel to the goal
4. Development of city rail on the existing railway tracks
5. Refurbishes bus and railway station Ljubljana
6. Easier combination of various traffic modes
7. Up to date and environmentally-friendly vehicles of Ljubljana public transportation

For car drivers

1. Less travels by car
2. Less daily migrants that drive to work in the city with a car
3. Effective parking policy
4. Rearrangement of roads and crossroads for higher safety of cyclers and pedestrians in addition to higher speeds of public transportation and car traffic
5. Less pollution
6. Green city logistics

- **Are you using a SUMP methodology, and if yes, on what phase are you currently working on?**

Yes, SUMP methodology was used and completed in the year 2017 ([CPS MOL](#)). Currently is in the implementation phase.

## 2. E-mobility:

- **What is the situation of the e-mobility (number of e-cars/hybrids, charging stations, etc.) in your MR?**

There is no reliable statistics of battery-powered vehicles on a MR level, so here we present approximations based on news ([link 1](#), [link 2](#)). There are approximately 1500 electric vehicles in Slovenia, in LUR probably more than half of that number (approx 800). The number of hybrids in MR is twice that number (approx. 1600).

In MR there are 95 public charging stations by Elektro Ljubljana and 36 charging stations of Avant2Go. The number of private charging stations is not known.

- **What are basic incentives for e-mobility on local/regional/state level?**

It is the subsidy for fully electric and plug-in hybrids by national Eco fund in the height of 4.500 €. There are no other subsidies on regional or local level.

- **Is there any difference to conventionally fuelled cars regarding public space usage/parking?**

Yes. In central areas, parking spaces for electric cars are positioned on a preferential places. Also parking is free for the duration of charging.

Even more preferential treatment get cars in the carsharing system Avant2Go. For them, parking is free on municipal parking places and even in parking garages ([source](#)).

- **Who is building/financing the grid to the charging stations?**



In Ljubljana, most of the charging stations are built by public power provider Elektro Ljubljana (builds grid), often in Municipality of Ljubljana (provides space) and even Avant2Go carsharing service (provides cars and users). Apart from those, there are private charging infrastructure providers (petrol stations, car sellers, car parking providers etc), who finance their own charging stations.

- **Who is building/operating charging points in your city/region?**

See above.

- **What are future development plans regarding e-mobility?**

In 2017 a national strategy of alternative fuels in transport sector has been approved by the Slovenian Government. Measures to stimulate e-mobility are foreseen in the document.

In the year 2013, Municipality of Ljubljana prepared the Strategy of electro-mobility, but it needs an update, because most of the measures are already met.

### 3. Carsharing, bikesharing

- **Is there any carsharing/bikesharing scheme in operation in your MR?**

Yes, there are two bikesharing schemes in MR: in Ljubljana (BicikeLJ) and in preparation in Vrhnika.

There is one carsharing scheme in MR: Avant2Go.

- **If yes, with which propulsion system (conventional/electric/mixed) is it running?**

Cars are fully electric.

- **Who is running the service: public/private?**

Bike sharing BicikeLJ is run in a public-private partnership between Municipality of Ljubljana and Europlakat.

Car sharing Avant2Go is owned and run by Avant car d.o.o.

- **How is it regulated, is it a public task, or a free market initiative (or something in-between)?**

Avant2Go is a private initiative, but in tight collaboration with municipality. The regulation is not known.

- **How is bus lane usage regulated for carsharing vehicles?**

It is not allowed to use bus lane for carsharing vehicles.

### 4. Autonomous vehicles:

- **How actual is the question regarding autonomous vehicles in your MR?**

Currently, it is very actual. In the beginning of April 2018 the initiative for testing autonomous vehicles was initiated in Ljubljana (<http://avlivinglab.com/>). The aim is to test AV on private shopping area.

- **Is there any regulation for autonomous vehicles? No.**

- **Is the infrastructure fitted? What steps do you plan in this regard?**

It is not clear what infrastructural requirements would autonomous vehicles need. Also, steps of AVlivingLab are not clear in this regard.





## 5. MAAS (Mobility as a Service)

- **Is there any kind of MAAS in your MR?**

There is no MAAS implemented thoroughly in our MR, but there were several attempts.

Mobile application "A to B" is a tool to optimize commuting directions in Ljubljana with integrated walking, bike-sharing and buses in Ljubljana. It provides a service, similar to google navigation, but with town-specific inputs. <http://www.atob.si/>

Urbana city card in Ljubljana and suburban towns is an integrated payment solution for local, suburban buses and bike-sharing BicikeLJ. <http://www.lpp.si/en/single-city-card-urbana>.

- **If yes, what is the role of the transport authority in this scheme?**

- **Is the scheme run by public or private operators?**

- **If there isn't any MAAS scheme yet, are there plans to introduce one?**

Yes, the Ministry of infrastructure plans to integrate all public transportation modes into MAAS, but it is still under progress.

## E) GOOD PRACTICE PRESENTATION

Please try and give a good example of how you/others manage transportation in your MR. Try and describe shortly the reasons for being a good practice. You can include links, pictures. (max. 1 page).

<b>Good practice</b>
Name: Integrating regular and school bus lines in Grosuplje and Škofljica.
Context:  In most of the suburban municipalities, there are two parallel settings for local bus transportation: regular buses and school buses.  Regular bus lines and bus stops are registered and controlled on national level. Contracts with service providers and subsidies are long-term. Schedules are fixed and publicly published. Everybody can use them by paying a ticket, but buses are mostly not a preferred way of transportation.  School buses, on the other hand, are commonly in municipal domain. Contracts are usually annual, schedules and bus stops are adaptable to school's needs and not published. Only pupils can use them and the service is paid by the municipality.  There are two ways how to join those the two systems:  a) School bus operators could apply for special permit from the national authorities to transport other passengers as well. Still the timetables are not publicly published and are adapted to primary school needs only.



b) School buses are fully integrated in PPT system. All buses can be used by pupils and all other passengers.

In Grosuplje, Škofljica and some other municipalities, they took the second option. Before the changes in 2013 on most of the local lines there were only 3 to 5 daily regular connections and 3 drives for school pupils only. In 2013 all the drives have been integrated in PPT system. In Grosuplje and Škofljica additional late afternoon and evening drives have been introduced as well.

Main stakeholders involved:

- Municipality – leads the process, support on a local level
- Ministry of infrastructure – includes the school lines into PPT system and registers them as regular PPT lines
- Transportation company – provides service

Web links:

[http://www.lpp.si/sites/www.jhl.si/files/lpp\\_si/aktualno/datoteke/szj\\_lpp\\_-\\_spremembe\\_linij\\_september\\_2013zv.pdf](http://www.lpp.si/sites/www.jhl.si/files/lpp_si/aktualno/datoteke/szj_lpp_-_spremembe_linij_september_2013zv.pdf)

Why is the practice considered as 'good'?

- More people are able to use buses (high school students, employees, elderly etc)
- With the similar municipal investment, the number of daily bus connections has doubled.
- School pupils can use buses for afternoon or evening activities as well for free.
- Bus lines are available in journey planners.

#### Additional questions:

We are especially interested in questions regarding PT integration: how different competent authorities on local, regional and national level cooperate within integration process?

How integrated PT could be upgraded into MaaS? Who could or should be MaaS provider (public authorities or private companies).



OSLO/AKERSHUS

## **SMART-MR INVENTORY ON MANAGING TRANSPORTATION**

OSLO/AKERSHUS

**PP(s) responsible: BKK Centre for Budapest Transport**



## General instructions on the level city/region/MR:

In the SMART-MR project the majority of the questions and data is related to the Metropolitan region (MR) which means the metropolitan city and the surrounding region together, thus where not indicated in the following Inventory, please describe your MR. If there is a lack of data, or information, please indicate, whether you refer to the city, or region itself. In some questions specific data is asked about the city or region separately, in these cases region is meant the area outside the city.

### A) QUESTIONS ON DATA ABOUT TRANSPORTATION

#### 1. General data about the city/region

*Urbanized areas (excluded the protected forestland):*

	City (Oslo)	Region (Oslo and Akershus)
Area (km <sup>2</sup> )	130,95	267,44
Population	661 442	988 873
Density (capita/km <sup>2</sup> )	5 051	3 698

Region: Ski, Oppergård, Bærum, Asker, Sørums, Rælingen, Lørenskog, Skedsmo, Nittedal, Oslo, Lier and Røyken municipalities. Figures per January 1<sup>st</sup> 2017. (Source: Statistics Norway).

*All areas in Oslo municipality and Akershus County Council:*

	City (Oslo county)	Region (Oslo and Akershus county)
Area (km <sup>2</sup> )	454	5372
Population	666 759	1 271 127
Density (capita/km <sup>2</sup> )	1 469	237

Figures per January 1<sup>st</sup> 2018 (Source: Statistics Norway).

#### 2. Public transport network and performance in the city (the latest possible data):

Year:	Network length (km)	Number of vehicles	Passengers transported/year	Passenger km/year
Metro	85	345	118 mill.	706
Suburban rail	n/a		39 mill.	
Tramway	41	72	51 mill.	165
Trolleybus	-			
Bus	-	1230	158 mill.	1299
Boat	-	11	4,5 mill.	27
Total				

#### 3. Questions on the bus system (city, trolleybuses excluded):

- What is the average age of the buses?

Average age buses in Akershus: 7.2 years



Average age buses in Oslo: 5.5 years

Average age buses in the whole MR (Oslo/Akershus): 6.1 years

- **What propulsion system do buses use? (If exact numbers are not available, please indicate with “+” or “-“ whether the system is available.)**

Propulsion system	Number of buses
Diesel EUR III or lower	15
Diesel EUR IV	26
Diesel EUR V	701 (of which 30 operate on HVO)
Diesel EUR VI or higher	310 (of which 104 operate on HVO)
CNG	156
Hybrid (diesel/electric)	16
Full electric	6
Other (please specify)	-

#### 4. Modal split

- **What is the modal split in your city/region (share of PT, cars, bicycles, taxi, walking, etc.)?**

City of Oslo: Public transport: 32%, car: 34%, bicycles: 7%, walking: 28%, other: 1% (the figures are from 2015).

Akershus county: Public transport: 18%, car 61%, bicycles: 4%, walking: 16%, other: 1% (the figures are from 2017).

- **How and out of which data is the modal split calculated (no. of passengers, or passenger km)?**

The data is based on no. of journeys/passengers.

- **How often is the modal split calculation updated?**

Every four years a national survey is conducted (The Norwegian Travel Survey). The survey provides information on transport resources and travel activity. When the latest national survey was conducted, the data collection for the Oslo metropolitan region was extensively expanded.

#### 5. Please describe the data sources which you use for statistics (if demand, supply and fleet data sources are common, please feel free to join cells):

	Demand data	Supply data	Fleet data (maintained in existing database ("Frida"), joint effort operators and Ruter)
<b>What are general data sources, which you use?</b>	We use open, internal data such as automatic passenger counting data (boarding and alighting), real-time data, ticket validation data and onboard interviews.		



<b>What kind of (strategic) agreements do you have with data suppliers?</b>	We have contracts with data suppliers where they gather and deliver data (i.e. census data) continuously (i.e. daily, monthly). Annual cost is approx. NOK 2 million.
<b>What kind of long time data series do you have, and for which period? (E.g. for the past 10 years, from 1970, etc.)</b>	We have travel survey data from 2001.
<b>Which part of the data is open and how is it publicly accessible?</b>	BEST key figures and travel survey data (requires user name and password which is granted upon request) is available as a web service at <a href="https://best.scandinfo.se">https://best.scandinfo.se</a> . Data is from Nordic countries Geneva and Rotterdam/Den Haag.  Travel survey data and customer satisfaction data is available in a database called "MIS" (Market Information System), a web interface (requires log in)  Real time passenger information is available through open API ("Ruter Labs").

**6. What kind of tariff and ticketing system do you use in your city/region?**

- **Is there an integrated ticketing system?**  
 Yes. Same ticket valid for traveling on all modes of transport; bus, tram, metro, boat, rail.  
 Open system; no check-in nor check-out.
- **Is the ticketing system paper based or electronic?**  
 Electronic, app and electronic card.
- **Is the pricing system km based, ring/zone based, or other?**  
 Zone-based.
- **Do you use a single ticket per ride or is it time-based?**  
 Time-based.
- **What are the basic ticket/pass types being used?**  
 Single-, 24hour-, 7day, 30day-, 365day-tickets.
- **What is the price of a single ticket/monthly pass within the city (in EUR)?**  
 Within the City of Oslo (Zone 1): EUR 4/EUR 80.
- **What is the most used ticket/pass and what is its price (if different from the previous question)?**  
 Single- and 30day.
- **What are basic discounts used (students, elderly, etc.)?**  
 Child, Youth, Student, Senior.



- **Are there any changes in the ticketing system foreseen?**  
Continuous development, steady growth in mobile, decline in card-based.
- **What is the current average petrol price (EUR/l)?**  
EUR 1.55.
- **Are your bus service tender contracts (if available) dependent on the petrol price? If yes, how?**  
Yes, the petrol price is index regulated twice a year.

7. **Please describe the public transport connection of the (main) airport with the city centre.**

Mode	Distance	Travel time	Frequency (peak)	Single fare (EUR)	Operated by public, or private company
Track based		19 min.	10 min.	20 EUR	Private company (Flytoget AS)
		23 min.	4 departures per hour	10 EUR	Public company (Ruter AS)
Bus	50 km	50 min.	30 min.	17 EUR	Private company (Flybussen AS, Nettbuss AS)

The figures describes the connection between Oslo airport and the city centre of Oslo.

8. **Passenger satisfaction:**

- **Do you measure passenger satisfaction?**  
Yes.
- **If yes how?**  
We use two different methods to measure passenger satisfaction: 1) On-board survey to investigate the satisfaction with a specific journey, and 2) Telephone survey to map the general satisfaction with the PT system.  
We annually completes 40000 on-board interviews, and 9000 telephone interviews.
- **What are basic viewpoints/criteria for the survey (on what criteria do you ask/evaluate)?**  
On-board survey: «All-in-all how satisfied are you with this specific trip?»  
Telephone interview: “How satisfied are you with the public transport system in the area where you normally travel?”  
The answers are given on a scale 1 – 5, from very dissatisfied to very satisfied.
- **How often is it measured?**  
Both surveys are carried out continuously.

9. **Transport model:**



- **Do you use a transport model for planning or evaluation of projects?**

The strategic transport model RTM23+ is used by various planning authorities in Oslo/Akershus, among others the City of Oslo, the Norwegian Public Roads Administration, The Norwegian National Rail Administration, and Ruter (the management company for public transport in Oslo and Akershus).

- **If yes, which one and for what do you use?**

The strategic transport model covers the whole Metropolitan Region (Oslo and Akershus). It is an advanced Logit model based on observed OD-patterns and LoS data from EMME (<http://www.inrosoft.com/en/products/emme/>). It is used to calculate the effects of major infrastructure project or changes in the PT structure and/or service. In addition to the strategic transport model, we also use several spreadsheet-based models to calculate changes in level of traffic, and the relationship between changes in the PT system or cost, and number of passengers:

([https://www.toi.no/getfile.php/1346465/Publikasjoner/T%C3%98I%20rapporter/2017/1596-2017/1596-2017\\_Summary.pdf](https://www.toi.no/getfile.php/1346465/Publikasjoner/T%C3%98I%20rapporter/2017/1596-2017/1596-2017_Summary.pdf)).

Ruter has also started a project to develop a VISUM/MaaS-model for Oslo/Akershus, the first version of this model is expected to be finished in september 2018. The model will be used to better understand the impact of new technological trends on mobility.

- **How is the model fed with data, and how is data made available?**

The various PT planning authorities in Oslo/Akershus has a long-term and well-functioning cooperation to collect/control necessary data and develop a transport model (PROSAM: <http://www.prosam.org/>). LoS data are provided from EMME, and are updated every 1-3 years.

- **How often is the model updated?**

The model has been updates several times during the 15 years it has been in operation.

## **B) INSTITUTIONAL STRUCTURE, FUNCTIONAL QUESTIONS**

### **Questionnaire about the local and regional institutions and their functions**

- 1. Who are local and regional competent authorities/institutions regarding transportation in your MR?**

Local and regional competent authorities:

Oslo: The Department of Environment and Transport is the authority. Both Agency for Urban Environment and Ruter (the public transport provider, owned 60% by the Municipality, 40% by Akershus County) reports to this department.

Akershus: Akershus County Council, Ruter, the Norwegian Public Roads Administration, The Norwegian National Rail Administration, the National Rail Authority.

- 2. Please describe their service competences, responsibilities and decision making processes.**





Ruter is responsible for the public transport in the Oslo/Akershus region. The local rail is governed by the national rail authorities. Oslo municipality and Akershus County Council are responsible for the local and regional roads. The Norwegian Public Roads Administration are responsible for the national roads (e.g. TEN-T, E-roads, etc.), also the national roads in the MR.

**3. Is there any transport authority in your city/region/MR?**

Yes, see above.

- **If yes, on which level: city/region/MR (i.e. transport association)**

See question 2.

- **What are the limits of a transport authority (territorial and service oriented /i.e. taxi, railway, etc./)?**

For description of the responsibilities of the transport authorities, see question 2. The rail service is a national responsibility. The taxi permits are given by the Agency for Urban Environment in Oslo and Akershus County Council.

**4. Is there a cooperation between city and region in terms of transport and/or land use planning? If yes, please describe it briefly (common tariff, integrated regional transport, etc.).**

Regional plan for land-use and transport, co-ownership of Ruter, financial package of Oslopakke 3 (Oslopackage 3).

**5. How are competences between different institutions regulated regarding owner, supervisor, operator on local/regional level?**

Oslo municipality and Akershus County Council are the co-owners of Ruter. Ruter is the operator and supervisor of the PT system. Ruter has tendering on buses, metro, trams etc. The Agency for Urban Environment is responsible for road maintenance, traffic regulations and traffic management.

**6. What is the relationship between public authorities and private initiatives? How are new forms of transportation regulated (like carsharing, Uber, etc.)?**

There are no regulations of private initiatives like Uber and carsharing. There is some facilitating for tourist buses etc. E.g., the municipality has a set of designated parking areas for the buses when they are not running. The municipality is also regulating where the airport bus can stop.

**C) QUESTIONS ON REGULATIONS**

**1. Parking:**

- **What are local building regulations for parking places regarding new buildings/refurbishments?**

In Akershus, the parking standards are regulated by the different municipalities.



In Oslo, the parking standards, which applies for new buildings, has recently been revised. The objective of the standards is to help reduce the use of cars and increase the use of walking, bicycling and public transport. The parking standard defines three different area categories (parking zones): city centre, urban areas and low-density areas. For each category, the parking standard is described. Areas within 500 meters from a public transport hub, metro station or train station is defined as “urban areas”.

In the city centre it is only maximum norms, in urban areas and low-density areas it is mostly maximum norms (for housing complexes and low density housing it is both minimum and maximum norms). For bicycle it is minimum norms in all the areas. The figures can be seen in the table below:

Kategori: per 100 m <sup>2</sup> BRA, med unntak av småhus	Bil			Sykkel	Merknad	
	Sentrum	Tett by	Åpen by	Alle områder		
Boligkompleks	maks 0,5	min 0,35 maks 0,7	min 0,45 maks 0,9	min 3,5	Bygninger med flere enn 4 boenheter	
Studentboliger	maks 0	maks 0,3	maks 0,4	min 4		
Omsorgsboliger/sykehjem	maks 0,1	maks 0,3	maks 0,4	min 1		
Småhus, per bolig	Ege/h parkering	maks 1	norm 2	norm 2	-	Maksimum 1 bilparkeringsplass per sekundær bolig
	Felles parkering	maks 1	min 1,2 maks 1,5	min 1,5 maks 2	-	Felles parkering kan etableres der det foreligger minst 3 småhusboenheter
Kontor	maks 0,1	maks 0,2	maks 0,5	min 2,5		
Handel og service	maks 0,1	maks 0,5	maks 0,9	min 3		
Kultur	0	0	maks 0,5	min 3	Ev. behov for bilparkeringsplasser i sentrum og tett by bør dekkes av sambruk med omkringliggende parkeringsplasser	
Industri og lager	0	maks 0,1	maks 0,2	min 0,5	Biloppstillingsplasser til drift av virksomheten kan komme i tillegg	
Hotell/overnatting	0	maks 0,2	maks 0,4	min 0,8		
Undervisning	0	maks 0,05	maks 0,2	min 3	Inkluderer ev. bilparkeringsplasser til henting og levering	

Bil = Car, Sykkel= Bicycle, Sentrum = City centre, Tett by = Urban areas, Åpen by = Low density area. Boligkompleks =Housing complex, Studentboliger = Student housing, sykehjem= Nursing homes, Småhus = Low density housing , Kontor=Offices, Handel og service = Commerce and service, Kultur=Culture facilities, Industri og lager=Industry and warehouse, Hotell/overnatting: Hotel/accommodation, Undervisning=Education

- **How do local regulations serve transport policies?**

In the City of Oslo, the aim is to reduce the usage of car. Basically, this is done by reducing the amount of parking, residential parking in the central areas of Oslo (priced), and an increased level of payment for parking.

Akershus County Council has limited authority when it comes to regulating parking in the county. The municipalities are responsible for the local regulations.



- **What are basic regulations regarding parking on public space? (tariff, parking permits, local beneficiaries, etc.)**

The city is divided between different tariffs when it comes to prices for parking. And the time you are allowed to park, and at what times you have to pay for parking, also vary. The more central areas of the city have the highest prices.

<https://www.oslo.kommune.no/gate-transport-og-parkering/parkering/priser-og-betaling-for-parkering/#gref>

There are reserved places in the streets for disabled. To use these places you would have to have a parking permit visible.

A resident parking scheme has been introduced (see good practice description).

- **What is the relationship between parking houses vs. parking on public space? Are there any contradictions?**

Parking houses are usually privately owned and more expensive than parking on public space. The new parking policies in the City of Oslo will change this.

- **Please describe the basic parking discounts if there are any (on engine EUR category, emission, propulsion system, disabled, etc.)**

Designated spaces for disabled, free parking (with charging) for EVs. In some central residential areas residents can pre-pay for parking rights which limits the number of spaces for non-residents parking in the area.

- **What are major milestones in parking policy in the recent past and in near future? (enlarging parking zones, reducing discounts, handling of exceptions, etc.)**

Free parking for EV's, residential parking permits. See above.

- **P+R, B+R**

- **How many P+R and B+R spaces are there in the city/region?**

	City of Oslo	Akershus county
P+R	Approx. 200*	9330
B+R	(numbers not available)	7980

\*Numbers are from 2013

- **Is the usage of P+R and B+R spaces free or priced?**

The P+R is mostly free. At some rail stations, the rail authorities have introduced a low fee on P+R. B+R is usually free, but for bike hotels etc. there is a low fee (e.g. bike hotel at the Oslo Central Station, EUR 4/month).

- **Please describe your P+R, B+R standards.**

Surface parking for cars, surface and bike hotels for bikes.

- **What are general principles (strategy) for developing P+R and B+R spaces?**



Oslo and Akershus has a common strategy for P+R (from 2014). The overall strategy is to place P+R facilities by train stations, and as far out in the travel chain as possible. P+R should not displace future urbanization. In reality, this means that there will not be built new P+R facilities within the municipality of Oslo. On the contrary the strategy has a strong focus on building new B+R facilities.

## 2. Tourist coaches/hop on hop off services:

- **What are basic regulations of entering and moving around the city?**

Today there are no regulations for entering and moving around the city. The situation with the tourist coaches is a bit chaotic, especially around city hall. Some dedicated parking for tourist coaches has been established, and in some cases the maximum parking time has been changed from one hour to 10 minutes.

For the tourist season of 2018 some additional measures are put forward:

- A better dialogue with the business
- Maps showing dedicated parking available at the tourist offices
- The parking officers are patrolling the “trouble areas” on a regular basis
- Places for drop of/pick up of tourists are established close to city hall
- A preferred route for tourist coaches through the city are established ( signs will be put up)
- Parking for approx. 25 busses will be set up in the western part of the harbour (Filipstad).

- **How do you regulate stops, waiting areas, terminals?**

- Embark/disembark: in the area around the city hall. Busses are allowed to park for maximum 10 minutes.
- Short term parking: in the not so central areas of the city centre. Busses are allowed to park for 1 or 2 hours.
- Long term parking: in the border of the city centre. Bigger parking areas for busses with a permit, busses can park for 24 hours.

- **Are you contracting operators? If yes, what are basic contracting options for touristic services (using levies, taxes, etc.)?**

There are no contracts or tendering for tourist coaches/hop on hop off services. The Agency for Urban Environment gives hop on hop of services route permits (operators pay to get their application proceeded, and has to put up a warranty of approx. 9000 euro). The national road authority gives permits to coaches.

- **Is the usage of bus lanes allowed for those vehicles?**



Yes.

### 3. Congestion charge

- **Do you have a congestion charge, or do you plan to introduce one?**  
Yes, introduced in 2017.
- **If yes, for what purpose?**  
Financing PT, investments in roads and PT infrastructure and reduce traffic.
- **What are basic impacts, experiences with your existing congestion charging system?**  
It's recently been introduced, however the traffic in the peak times (morning and afternoon) seem to have been reduced.
- **What are revenues used for?**  
Investments in roads and PT in the MR.

### 4. LEZ (low emission zone)

- **Do you have a LEZ, or do you plan to introduce one?**  
The City of Oslo is contemplating a LEZ. It is now up to the politicians to decide whether or not it will be introduced.
- **If yes, on what principle is it working?**  
The first step is to put a fee on heavy vehicles (above 3,5 tons) that doesn't meet the EUR6-standard.
- **What are your experiences, and future plans with LEZ?**  
See above.

### 5. Bus lane usage

- **Do you have dedicated bus lanes?**  
Yes, some places. The MR is planning to introduce more dedicated buslanes (Oslopackage 3).
- **If yes, who are allowed to use the bus lanes (taxi, bicycle, carsharing, etc.)?**  
EV's, taxi, bicycle.
- **How are bus lanes supervised to avoid inappropriate usage?**  
Enforced by the police.
- **Do you have any other dedicated type of lanes (i.e.: HOV lane, temporary parking lane, etc.)?**  
No.



## D) ALTERNATIVE SYSTEMS, FUTURE

### 1. Strategic plans:

- **What is your planning horizon in transport developments, strategies?**

On a national level, there is The national transport plan which outlines how the Government intends to prioritise resources within the transport sector. The four national agencies who are responsible for air, sea, rail and road transport in Norway prepares a joint proposal every fourth year. The plan is a twelve-year-plan that is revised every fourth year. This plan, which also addresses other important policy issues, provides a comprehensive basis on which to make decisions. It seeks to ensure the efficient use of resources and to strengthen interaction between the various modes of transport. The proposal from the four agencies is followed by a white paper from the Government, which is presented to the Parliament. This white paper is the basis for the annual state budgets in the Norwegian transport sector.

In the Regional plan for land-use and transport (adopted in 2015), the planning horizon is 2030.

Oslopackage 3 has the same planning horizon as the Regional plan for land-use and transport. The project portfolio stretches beyond the four year action plan.

In The Municipality Master Plan of Oslo (adopted in 2015), the planning horizon is 2030.

The Akershus County Council annually revise the budget and action plan for transport, with a four-year investment plan, but also beyond the four year term.

Ruter (the public transport provider in Oslo and Akershus) has a planning horizon up to 2030/40, but also looks beyond this.

When planning for investments/developments in infrastructure, the planning horizon vary depending on how detailed the plan is.

- **What are your city's/region's/MR's transport policy goals?**

National, regional and local authorities have signed an agreement describing how roads and public transport in Oslo shall be developed and financed. The plan is called Oslopakke 3, and it is financed through toll road taxes and grants from the state, Oslo municipality and Akershus County Council.

The overall transport policy goal of the MR is to develop an efficient, environmentally friendly, safe and accessible transport system. The main goals are:

- Good accessibility for all road users, with priority of pedestrian and bicycle traffic, public transport, and business traffic.
- The growth in passenger transport must be absorbed by walking, cycling, public transport.
- Other goals are to ensure that all travel chains are universally designed so that the transport system can be used by, to offer an attractive public transport system/network and to contribute to better environment and urban qualities.



- **Are you using a SUMP methodology, and if yes, on what phase are you currently working on?**

The City of Oslo is not using a SUMP methodology. The Akershus County Council is partly using some SUMP methodology with participation in the budget and action plan process, and creating mobility analysis for the regions within Akershus County.

## 2. E-mobility:

- **What is the situation of the e-mobility (number of e-cars/hybrids, charging stations, etc.) in your MR?**

The EV sales are boosting in the MR. In 2017 more than 50 % of cars sold in the MR was electric (37,5 % pure electric vehicle, 14,1 % plug-in vehicle).

The City of Oslo is the country's largest (and one of the world's largest) owner of charging infrastructure with 1300 on-street charging points. Total number of available charging points in Oslo is close to 2000. In 2018-2020 1800 new charging points will be deployed.

- **What are basic incentives for e-mobility on local/regional/state level?**

- Free access on toll roads (prices in the MR vary between EUR 3,5 – 5, on national roads the prices can be much higher)
- Free parking (EUR 2 – 5 per hour): EVs and hydrogen cars can park for free on all public parking places in the city of Oslo. For places with charging infrastructure car owners are encouraged to move the car when it is fully charged.
- Free normal charging (EUR 3 – 9 per session)
- Access to use bus and taxi lanes (time saving)
- Free transport on ferries (EUR 12 – 24 each way)
- Free use of tunnels (EUR 12 – 24 each way)
- No taxes or fees when buying new EV's (save at least EUR 10 000, depending on the type of car)

- **Is there any difference to conventionally fuelled cars regarding public space usage/parking?**

Yes. As mentioned above, EV's may use bus and taxi lanes, and they also park for free.

- **Who is building/financing the grid to the charging stations?**

It's connected to the overall electric grid of the city. The grid in Oslo is owned by the City's grid owner, called Hafslund. Hafslund is a public company and is owned by the City of Oslo.

The charging sites curbside/on-street is owned by the City of Oslo, Agency for Urban Environment, including all hardware, underground cables, cabins, shed etc. to the connection point. The grid itself is however owned by Hafslund.

- **Who is building/operating charging points in your city/region?**



Both the municipalities (mostly the on-street charging points) and private operators. In Oslo, normal chargers (3,6 kW AC) are built, owned and operated by the municipality. Charging is free until September 2019. Semi-fast chargers (22 kW AC) are built and owned by the municipality, and operated by private operators on public. Net income is shared between the municipality and the private operator. Fast-chargers (50 kW or more) are built in cooperation between private operators and the municipality. Net income is shared between the municipality and the private collaborator.

- **What are future development plans regarding e-mobility?**

In addition to the plans for establishing more charging points, there are plans for establishing “green mobility houses” which will offer charging points for EV’s (both private and professional users), EV car sharing, E-bike sharing etc. In the future, some of the benefits will be reduced, e.g. reduced pricing in toll roads. Access to transport lanes is also being revised.

### 3. Carsharing, bikesharing

- **Is there any carsharing/bikesharing scheme in operation in your MR?**

There are several carsharing schemes in operation available for the public.

In the City of Oslo there is a City Bike scheme that is quite widespread, including 6000 locks and 3000 bikes. About 50,000 people in Oslo use city bikes, and in 2016 over 2.1 million bike trips were made in Oslo.

OBOS, a private cooperative building association, have launched a pilot of electric bikesharing scheme in Kværnerbyen in the City of Oslo.

In addition to this, there are several platforms for renting out private owned cars/bikes and other things (like Air b’n’b for cars, bicycles and other things).

There are some smaller bikesharing schemes in two of the municipalities in Akershus.

- **If yes, with which propulsion system (conventional/electric/mixed) is it running?**

The carsharing schemes are both conventional and electrical. The bikesharing scheme in the City of Oslo is conventional. The pilot on bikesharing launched by OBOS is electrical.

- **Who is running the service: public/private?**

The car sharing schemes are operated by private companies.

The bikesharing scheme in the City of Oslo is a collaboration between the City of Oslo and the private company Clear Channel Norway AS. The municipality makes public advertising space available and gets a city bike space in return. The scheme is financed by subscriptions, advertisements on the racks, and sponsorship.

- **How is it regulated, is it a public task, or a free market initiative (or something in-between)?**

The carsharing schemes are not regulated by public authorities. The bikesharing scheme in the City of Oslo is regulated by the municipality of Oslo.

- **How is bus lane usage regulated for carsharing vehicles?**





Bus lane usage is available for all electric cars. There are no specific access for carsharing.

#### 4. Autonomous vehicles:

- **How actual is the question regarding autonomous vehicles in your MR?**

Ruter (the public transport provider in Oslo and Akershus) believes that shared autonomous mobility will play an important part of the future transportation system. They therefore want to be in front of the development to learn and utilize the technology advances as soon as possible. They aim to deploy a fleet of vehicles in different kind of pilot scenarios over a period of the next 2-3 years with the first pilots hopefully going live before the end of 2018.

- **Is there any regulation for autonomous vehicles?**

Yes, there is a regulation for testing autonomous vehicles in public transport in Norway.

- **Is the infrastructure fitted? What steps do you plan in this regard?**

No. We need to fit the infrastructure in each pilot area where necessary.

#### 5. MAAS (Mobility as a Service)

- **Is there any kind of MAAS in your MR?**

In the City of Oslo, there is interchange between several public transport operators, but not actually MAAS implemented.

- **If yes, what is the role of the transport authority in this scheme?**

Mainly cooperation between regional authorities and state railway with the same payment system.

- **Is the scheme run by public or private operators?**

Public.

- **If there isn't any MAAS scheme yet, are there plans to introduce one?**

No.

#### E) GOOD PRACTICE PRESENTATION

Please try and give a good example of how you/others manage transportation in your MR. Try and describe shortly the reasons for being a good practice. You can include links, pictures. (max.1 page).

<b>Good practice</b>
Name: Residential parking in Oslo
Context:



Street parking outside the city centre has mostly been free of charge for everyone. In residential neighbourhoods close to the city centre, with limited street parking for residents, the parking situation has been challenging because of a high number of commuter parked cars.

After a few years with smaller test areas in the city, the final scheme for residential parking was presented for the politicians in the district councils. 9 (out of 15) districts decided to implement the scheme (5 in the whole district, 4 in some streets in the district). Most of these are quite close to the city centre. The implementation started in 2017 and will finish in 2018.

With a resident card (an electronic system based on the registration number of the car) (approx 300 euro/year, and 26 euro/month) residents can park their car in the residential parking places in the streets in their district. Visitors can pay for parking (1 hour = 3 euro). EVs and hydrogen cars park for free.

Main stakeholders involved:

The Agency for Urban Environment, The Districts, residents

Web links:

<https://www.oslo.kommune.no/gate-transport-og-parkering/parkering/beboerparkering/>

Why is the practice considered as 'good'?

The practice is considered as good because it in an effective way reduces the possibility to use your private car for commuting. The possibility is still there, but because of the parking fee, the commuters are forced to consider other means of transport to work.

The parking situation for residents are also improved. This reduces unnecessary driving trying to find a vacant spot. This will again reduce emissions.

As most of the districts where the residential parking scheme is being introduced are close to the city centre/in urbanised areas the residents also have good public transport, and the possibility to walk and cycle to their everyday activities. The 300 euro yearly fee to park in what used to be free parking spots, might push people who are not dependent on their car to sell it.

Streets not filled with cars can be used to improve the facilities for people who are walking, cycling and using public transport (e.g. separate lanes for cycling or busses).

The scheme is also a source of income for the municipality.



PORTO

# SMART-MR INVENTORY ON MANAGING TRANSPORTATION

Porto Metropolitan region

PP(s) responsible: BKK Centre for Budapest Transport



### General instructions on the level city/region/MR:

In the SMART-MR project the majority of the questions and data is related to the Metropolitan region (MR) which means the metropolitan city and the surrounding region together, thus where not indicated in the following Inventory, please describe your MR. If there is a lack of data, or information, please indicate, whether you refer to the city, or region itself. In some questions specific data is asked about the city or region separately, in these cases region is meant the area outside the city.

### A) QUESTIONS ON DATA ABOUT TRANSPORTATION

#### 1. General data about the city/region

	City	Region
Area (km <sup>2</sup> )	41,42	2.041,31
Population	237.591	1.759.524
Density (capita/km <sup>2</sup> )	5.736,14	861,96

#### 2. Public transport network and performance in the city (the latest possible data):

Year: 2016	Network length (km)	Number of vehicles	Passengers transported/year(10 <sup>3</sup> )	Passenger km/year (10 <sup>3</sup> )
Metro	66,66	102	58.031	296.076
Suburban rail	129,5	34	4.417*	
Tramway	9	6	622	1.027
Trolleybus	0	0	0	0
Bus STCP**	480	419	68.738	252.484
Other				
Total	685,16		131.808	

\*\* Data from STCP (Bus public operator)

\*Data from Andante (the intermodal ticket system) – we don't have data for MR.

#### 3. Questions on the bus system (city, trolleybuses excluded):

- What is the average age of the buses?  
14 years
- What propulsion system do buses use? (If exact numbers are not available, please indicate with "+" or "-" whether the system is available.)

Propulsion system	Number of buses
Diesel EUR III or lower	39
Diesel EUR IV	
Diesel EUR V	121
Diesel EUR VI or higher	



CNG	257
Hybrid (diesel/electric)	
Full electric	
Other (please specify)	

#### 4. Modal split

- What is the modal split in your city/region (share of PT, cars, bicycles, taxi, walking, etc.)?

Mode	City	MR
Car	51%	52%
Walking	22%	15%
PT	26%	19%
Motocycle	0,5%	1,3%
Bike	0,2%	0,3%
Other	0,2%	0,2%

- How and out of which data is the modal split calculated (no. of passengers, or passenger km)?

The modal split is calculated with the number of passengers that are commuting.

- How often is the modal split calculation updated?

The modal split is calculated with the Population Census so it's usually updated with the gap of 10 years.

In the end of last year "The Statistics Portugal" made a Mobility Survey in the MR of Porto and we should have the results in June 2018.

- 5. Please describe the data sources which you use for statistics (if demand, supply and fleet data sources are common, please feel free to join cells):

	Demand data	Supply data	Fleet data
What are general data sources, which you use?	Data from the ticket system Population Census	Operator data	Operator data
What kind of (strategic) agreements do you have with data suppliers?	Institutional agreement with TIP responsible for the intermodal ticket system	Official registers in National Platform. In MR we are responsible for the bus data: lines, routes, timetables.	By legislation they have to give us annual information related to the fleet.
What kind of long time data series do you have, and for which period? (E.g.	Data since 2011	Data since 2017	Since 2017



for the past 10 years, from 1970, etc.)			
Which part of the data is open and how is it publicly accessible?	The only data that is open is from the population Census. Which is accessible by internet.	No	No

## 6. What kind of tariff and ticketing system do you use in your city/region?

SIA – Sistema Intermodal Andante, is the name of transport ticketing system in metropolitan region and has been adopted by the main public and private passenger transport operators. Currently, Andante is a ship card that enables to collect data from the circulation of people in public transport system (Metro, train and bus) to a data center.

- **Is there an integrated ticketing system?**

There is an integrated ticketing system for the public transport in MR that enables users to travel by bus, metro and train.

- **Is the ticketing system paper based or electronic?**

The system used cards and it's electronic.

- **Is the pricing system km based, ring/zone based, or other?**

The *Andante* ticket system is based on zones.

- **Do you use a single ticket per ride or is it time-based?**

The ticket is time based.

- **What are the basic ticket/pass types being used?**

There are two main kinds of Andante cards:

### The Andante Blue Card

It's an occasional ticket. They are valid for a set of zone rings that are counted around the zone where the user started the trip (the place where the user made the 1st validation) and up to the limit of zone rings acquired (Z2 if there are 2 rings, Z3 if they are 3 rings, ...).

#### Main characteristics:

- Non- personalized paper ticket;
- Rechargeable with any kind of travel title;
- A ticket per person;
- This ticket can contain several titles of the same type (for example, 10 Z2 titles);
- It's only possible change the type of title when it's empty( For Example: changing from Z2 to Z3 is only possible once you used up all your titles);
- You have to validate the ticket every time you enter a new transport by holding it in front of a sensor;



## Andante 24

There is also a daily ticket, known as Andante 24 that allows the user to make unlimited trips within a given day in the zones chosen. For example, a Z3 (3-zone) ticket is valid for 3 zones in any direction of travel from the first validated zone.

## The Andante Gold Card

The Andante Gold ticket is used for monthly passes. These titles are valid for the zones the user choose and allow to travel in this areas for a month.

Main characteristics:

- Personalized card – only the identified user can use;
  - Each ticket is able to contain only 2 month worth of titles (for the present month and for the following month) and 1 regular title;
  - Monthly price depends in how many zones the user choose.
- **What is the price of a single ticket/monthly pass within the city (in EUR)?**

Single ticket (Andante Blue):

    - A single ticket costs 1,20€ to travel within the city for an hour;
    - To travel 24 hours within the city costs 4,25€.

Monthly pass (Andante Gold) :

    - 30,60 € (two zones)
  - **What is the most used ticket/pass and what is its price (if different from the previous question)?**

The most used ticket and pass is Z2 (two zones) with 44.3% the users – prices above.
  - **What are basic discounts used (students, elderly, etc.)?**
    - Discounted fares accordingly with the income;
    - Students
    - Older people (65 years or more).
  - **Are there any changes in the ticketing system foreseen?**

Yes. We are testing in this moment a ticket system using the mobile phones with post-billing and spot-price (price optimization) concept. The passenger use the transport that they want and in the end of month receive the invoice with the best price according to the use.
  - **What is the current average petrol price (EUR/l)?**
    - 1,35 Eur/l (Diesel)
  - **Are your bus service tender contracts (if available) dependent on the petrol price? If yes, how?**



In this moment our bus service isn't dependent of tender contracts.

- **Please describe the public transport connection of the (main) airport with the city centre.**

Mode	Distance	Travel time	Frenquency (peak)	Single fare (EUR)	Operated by public, or private company
Track based	13,1 km	20 or 30 mn	20 mn	2 €	Public
Bus	15 Km	30 mn	30 mn	2 €	Public

#### 7. Passenger satisfaction:

- **Do you measure passenger satisfaction?**  
No
- **If yes how?**
- **What are basic viewpoints/criteria for the survey (on what criteria do you ask/evaluate)?**
- **How often is it measured?**

#### 8. Transport model:

- **Do you use a transport model for planning or evaluation of projects?**  
At present time it is being develop a transport model that is going to be applied on planning and to evaluate projects.
- **If yes, which one and for what do you use?**  
The VISUM model (PTV Group: Traffic and Logistics Software & Technology)
- **How is the model fed with data, and how is data made available?**  
The supply data (road infrastructure and public transport system) is available from public GIS datasets. The demand data (matrices) was obtained from a Mobility Survey and it will be complemented with information from the intermodal ticket system, public and private operators, city councils and regional/national organizations responsible for the infrastructure.
- **How often is the model updated?**  
It is expected that the model will be constantly updated.

## B) INSTITUTIONAL STRUCTURE, FUNCTIONAL QUESTIONS

### Questionnaire about the local and regional institutions and their functions





## 1. Who are local and regional competent authorities/institutions regarding transportation in your MR?

As our country isn't regionalized we will answer the question concerning the national, metropolitan and local level of competent authorities/institutions.

### NUT 1 - Institute for Mobility and Transport (IMT, I.P)

The IMT, I.P. is a central body with jurisdiction over the entire national territory. The IMT, I.P. acts on matters related to the Ministries of Internal Affairs, Planning and Infrastructure, the Environment, and the Sea, under the supervision and authority of the Minister of Planning and Infrastructure.

The main jurisdictions are the planning in the sector of land transport, river and its infrastructure and economic aspects of the sector of commercial ports and maritime transport.

### NUT 1 – Mobility and Transport Authority (AMT)

"The mission of AMT is to regulate and supervise the mobility and transport sector on land, waterways, railways and related infrastructure, and economic activity in the sector of commercial ports and maritime transport " in Decree-Law no. 78/2014, of May 14.

### NUT 3 - AMP (Metropolitan Area of Porto)

The metropolitan area of Porto is since September 2015 (Law 52/2015) the "transport authority" for Public passenger transport service in the metropolitan area of Porto.

To define the strategic objectives of the mobility system, planning, organization, operation, allocation, supervision, investment, financing, dissemination and development of passenger public service by road, water, rail and other modes.

To fulfill its responsibilities, Porto Metropolitan Area has the following competences:

- Organization, planning, development and coordination of networks and lines of public passenger transport services as well as the equipment and infrastructure dedicated to it;
- Exploration, through its own means and or assignment to public service operators, of the public passenger transport service;
- Purpose of public service obligations;
- Investment in networks, equipment and infrastructure dedicated to the public service of the passenger transport, subject to the investment to be made by public service operators;
- Financing of passenger public service and networks, equipment and infrastructure dedicated to this, and financing of public service obligations and compensation for providing subsidized social tariff determined by the transport authority;
- Determination and approval of tariff schemes in force in the public service of passengers transport;
- Receiving counterparts at right to operate passenger transport public service;
- Supervision and monitoring of the operation of public passenger transport service;
- Surveys on mobility within the respective geographical area;
- Promoting the adoption of transport planning instruments in the respective geographical area; and
- Divulcation of passenger public transport service.



#### NUT 4 – Municipalities

The municipalities have the competences regard the municipal lines, meaning the lines with all the path in the municipality (Law 52/2015 of 9 June).

#### **2. Please describe their service competences, responsibilities and decision making processes.**

The Metropolitan Area of Porto (AMP) is the competent Transport Authority as to public service intercity passenger transport, meaning the bus lines that intersect more than one municipality and that operate entirely or mainly in the metropolitan area of Porto (Law 52/2015 of 9 June).

However, with regard to municipal lines (to, from and with an integral path in one municipality) the transport authority is the municipality and therefore responsible for the transport planning within the territory.

And with regard to public operators (Metro do Porto, STCP (bus that operate in 5 municipalities of Porto region) and CP (train)) power remained in the state sphere.

Each of the 17 local authorities sign an inter-administrative contract of delegation of powers with the AMP, that allowed a creation of one metropolitan transport authority with a significant gain in efficiency, an optimization of human, technological and financial resources, facilitating the standardization of procedures and better coordination with the transport operators.

This kind of agreement also is responsible for the creation of the Technical Management Unit (TMU). These TMU enables the State to delegate in the inter-municipal authorities some of his powers related to the planning and management of transport public. One example is the case of the TMU of the municipalities served by the STCP network, state-regulated bus operator, in which via an inter-administrative contract, delegate the regulatory powers, supervision and inspection careers of STCP in TMU\_STCP, coordinated by the municipality of Porto and the AMP and include representatives of the municipalities of Vila Nova de Gaia, Matosinhos, Maia, Gondomar and Valongo (already approved by memorandum of understanding signed on 27 June 2016 by the Portuguese Prime Minister).

#### **3. Is there any transport authority in your city/region/MR?**

- **If yes, on which level: city/region/MR (i.e. transport association),**

As we answered above the Metropolitan Area of Porto is the transport authority for the MR for the road passenger transport.



- **What are the limits of a transport authority (territorial and service oriented /i.e. taxi, railway, etc./)?**

The limits of the transport are territorial involving the territory of the 17 municipalities that belong to this metropolitan region and service oriented for the bus transport.

- **Is there a cooperation between city and region in terms of transport and/or land use planning? If yes, please describe it briefly (common tariff, integrated regional transport, etc.).**

The land use planning is a responsibility of each municipality. However the deputies with responsibilities in mobility have meetings and joint projects in different fields of mobility on inter-municipal or metropolitan level.

4. **How are competences between different institutions regulated regarding owner, supervisor, operator on local/regional level?**

We have private and public owners of the transport providers. On local/regional level we only have the supervision of the public road transport of passengers (bus).

The central state is the owner and responsible for the supervision of metro and train.

The other public transports are mainly private and the supervision is on national level.

5. **What is the relationship between public authorities and private initiatives? How are new forms of transportation regulated (like carsharing, Uber, etc.)?**

It depend of the private initiatives and their necessities.

For instance, Porto Metropolitan Area signed a Protocol with ANTROP, the Association of the private companies of public transport (bus), with the aim to stimulate the development of a technical collaboration for cooperation in research and knowledge sharing in the planning of future mobility solutions.

We don't have yet specific regulations for the new forms of transport.

## C) QUESTIONS ON REGULATIONS

### 1. Parking:

- **What are local building regulations for parking places regarding new buildings/refurbishments?**

The regulations impose a minimum number of parking places per m2 of construction//refurbishments type (housing, services, commercial, etc)

- **How do local regulations serve transport policies?**
- **What are basic regulations regarding parking on public space? (tariff, parking permits, local beneficiaries, etc.)**



Tariff: there are about 8000 paid parking places around the city. Currently the hourly tariffs vary from 0.50 to 1,00 euro; parking permits: residents are allowed to require for a parking permit with the paid parking areas for about 15 euros/year, local beneficiaries: besides residents, public bodies and private companies can apply for a reserved on-street parking space for which they pay a fixed annual fee.

- **What is the relationship between parking houses vs. parking on public space? Are there any contradictions?**

The on-street and off-street parking are run separately, except when the off-street parking facility is run directly by the Municipality. In this cases, the prices for Residents is lower than the private competition.

- **Please describe the basic parking discounts if there are any (on engine EUR category, emission, propulsion system, disabled, etc.)**

On-street: disabled do not pay (have special reserved places) and residents are allowed to require for a parking permit with the paid parking areas for about 15 euros/year. When the off-street parking facility is run directly by the Municipality there are discounts for: disable, bikes and motorbikes (both are free of charge), discount for electric vehicles.

- **What are major milestones in parking policy in the recent past and in near future? (enlarging parking zones, reducing discounts, handling of exceptions, etc.)**

Recent past: international public tender to find the private company to manage the off-street parking system in the city of Porto in the Central Area(started with 4000 and it will rise to a maximum of 10.000 parking places). Near future: international public tender to find the private company to manage the off-street parking system in the city of Porto + 2 new parking lots in the city – West Area.

- **P+R, B+R**

- **How many P+R and B+R spaces are there in the city/region?**

	City	Region
P+R	1 (Dragão)/840	
B+R	2/20	

- **Is the usage of P+R and B+R spaces free or priced?**

P+R is priced but with a large discount for both regular and occasional users and the B+R is free.

- **Please describe your P+R, B+R standards.**

P+R you can park with a large discount if you used the PT afterwards; B+R – anyone can use is for free (even those who do not use the PT)

- **What are general principles (strategy) for developing P+R and B+R spaces?**

So far, it is been the PT operator the one to push the measure forward.

## 2. Tourist coaches/hop on hop off services:

- **What are basic regulations of entering and moving around the city?**



Hop-on/Hop-off buses operate according to a municipal regulations that establishes the operating standards. Coaches have to respect the on-street signalization that restricts the access to certain areas of the city (city centre).

- **How do you regulate stops, waiting areas, terminals?**

Hop on regulations

- **Are you contracting operators? If yes, what are basic contracting options for touristic services (using levies, taxes, etc.)?**

No

- **Is the usage of bus lanes allowed for those vehicles?**

No

### 3. Congestion charge

- **Do you have a congestion charge, or do you plan to introduce one?** No.
- **If yes, for what purpose?**
- **What are basic impacts, experiences with your existing congestion charging system?**
- **What are revenues used for?**

### 4. LEZ (low emission zone)

- **Do you have a LEZ, or do you plan to introduce one?**
- **If yes, on what principle is it working?**
- **What are your experiences, and future plans with LEZ?**

There aren't any.

### 5. Bus lane usage

- **Do you have dedicated bus lanes?**
  - **If yes, who are allowed to use the bus lanes (taxi, bicycle, carsharing, etc.)?**
  - **How are bus lanes supervised to avoid inappropriate usage?**
- By the police force on the daily enforcement routines and there is a special program between the municipal police and the local bus operator that consists in a vehicle (SMART) that travels in the city's bus lanes to prevent inappropriate usage.



- **Do you have any other dedicated type of lanes (i.e.: HOV lane, temporary parking lane, etc.)?**

There is a temporary parking lane that is currently being tested near a local school.

## D) ALTERNATIVE SYSTEMS, FUTURE

### 1. Strategic plans:

- **What is your planning horizon in transport developments, strategies?**

The Action Plan for Sustainable Urban Mobility in the Metropolitan region of Porto (PAMUS) is developed by the Metropolitan Area of Porto in partnership with the 17 municipalities that belong to the region. The PAMUS lists a series of measures and actions that will make it possible to promote more sustainable travel modes with effective impact on reducing emissions of polluting gases into the atmosphere.

The time frame is 10 years, including short time (two years), medium (five years) and long term (ten years).

- **What are your city's/region's/MR's transport policy goals?**

The aim is to promote environmental and energy-sustainable mobility within a broader framework of decarbonisation of social and economic activities and reinforce cities as areas of integration and articulation of public policies and as regional development anchors.

Mainly thru the:

- Increment of the soft modes (bicycle and pedestrian), through the construction of cycle paths or footpaths;
- Strengthening multimodal integration for public urban public passenger transport by improving integrated ticketing solutions;
- Improvement of the network of collective public urban transport interfaces, paying particular attention to the quality of the service provided, its accessibility to pedestrians and bicycles, its functional organization and its urban insertion in the territory, with a view to strengthening the use of public transport and such non-motorized soft modes;
- Structuring of high-demand urban corridors, in particular by prioritizing access to infrastructure by public transport and soft modes, in particular by creating specific "on-site" corridors;
- Adoption of real-time user information systems;
- Development and acquisition of equipment for management and information systems of innovative and experimental transport solutions suitable for articulation between urban territories and low population density areas, including flexible transport solutions using less polluting forms of energy.



- **Are you using a SUMP methodology, and if yes, on what phase are you currently working on?**

We aren't using a SUMP methodology.

## 2. E-mobility:

- **What is the situation of the e-mobility (number of e-cars/hybrids, charging stations, etc.) in your MR?**

Number of e-cars: we don't have data related with the number of e-cars/hybrids in the MR.

Charging stations: around 30 (private and public)

- **What are basic incentives for e-mobility on local/regional/state level?**

State level

- Bet on the electric supply network: The government (central state) has given financial incentives to increase the charging system for electronic vehicles.
- The vehicle price does not include the Vehicle Tax (ISV). They also benefit from a low Single Tax of Circulation (IUC), between € 7.91 and € 35.87. In the case of plug-in hybrid vehicles, a reduction in ISV is up to € 562.50.
- In 2017 we had a state incentive of 2250€ for the first 1000 persons which buy an electric car.
- For companies, the acquisition of electric vehicles allows deductions in the income tax, and this type of vehicles are exempt of autonomous taxation.

Local level

- In some cities the electric cars don't pay parking. In the case of Porto city in the parks managed by the Municipality there are discounts for electric vehicles.

- **Is there any difference to conventionally fuelled cars regarding public space usage/parking?**

That we are aware no. So if exist is an exception to the norm.

- **Who is building/financing the grid to the charging stations?**

The model adopted for electric mobility in Portugal - MOBI.E, mainly financed by the state consisted of a nationwide loading system, accessible to all users, with technical interoperability guarantee (possibility to load any type of vehicle) and service interoperability (access to any point of loading through the same registry or contract and authentication and access mechanism), in a competitive and open way, with reduced barriers to entry into the system.

- **Who is building/operating charging points in your city/region?**

Decree-Law no. 39/2010, of April 26, regulates the organization, access and exercise of electric mobility activities and establish a pilot electric mobility network with 1350 charging



points installed in 25 municipalities, allowing the universality of access as well as the monitoring of the network and its consumption.

There are several operators in MR of Porto that are the same as the conventionally fuelled cars.

- **What are future development plans regarding e-mobility?**

In view of the small number of electric vehicles placed on the market, with the corresponding use of the infrastructure falling short of what was originally foreseen in the Government's goals, there was a need to carry out a critical review of the MOBY.E (model adopted for electric mobility in Portugal).

In this context, the extension of the pilot phase was determined, with the consequent revision of the said program, which implied the accomplishment of several studies and the intervention of a significant number of agents in order to identify the constraints that prevented the integral development of the electric mobility .

Decree-Law no. 90/2014, of June 11, was published in 2014, which re-adopted the adopted model of electric mobility, with the purpose of "making investments already completed, in line with the evolution of the demand and associated economic benefit, as well as encourage a more effective integration of this program with energy and mobility systems, from a global perspective for smart mobility. "

Also in this scope and based on data compiled during the pilot phase, a new update was made to the location studies of the normal and high power charging points (normal and fast charging points), which had been submitted in December 2014, in order to update some of the proposed recommendations regarding the charging network that is still intended to be completed within the context of the pilot network MOBI.E.

As a result, the current national network, which consists of a fully interoperable charging infrastructure, will have a total of 1200 normal power charging points (normal charging points) and 50 (rapid charging points), of which, by 2015, 1.076 normal power charging points and 1 high-power charging point were installed. With the completion of this phase of the pilot network, including the planned relocation of some charging points, about 8.5 million citizens will be covered by 132 municipalities.

### 3. Carsharing, bikesharing

- **Is there any carsharing/bikesharing scheme in operation in your MR?**  
No.
- **If yes, with which propulsion system (conventional/electric/mixed) is it running?**
- **Who is running the service: public/private?**
- **How is it regulated, is it a public task, or a free market initiative (or something in-between)?**
- **How is bus lane usage regulated for carsharing vehicles?**

### 4. Autonomous vehicles:





- **How actual is the question regarding autonomous vehicles in your MR?**

Is very actual on national level and some municipalities had being plan some small initiatives.

- **Is there any regulation for autonomous vehicles?**

No.

- **Is the infrastructure fitted? What steps do you plan in this regard?**

We are just start with the first projects on national level and on city level.

This month (April 2018), Portugal and Spain sign an agreement to make joint efforts to create test conditions for autonomous and connected vehicles. The plan involves an opening corridor between Porto and Vigo where the vehicles can move. These corridor will provide access to 5G, the next generation of mobile networks, which enables faster communications than the current ones and which can be used, for example, for stand-alone cars to communicate with each other or with equipment on the road.

The main objectives of the agreement with Spain are:

- Start assessing existing and emerging technologies in the area of stand-alone and connected vehicles.
- Analyse positive opportunities and externalities for the development of autonomous and connected vehicles, with a focus on road safety and efficient traffic management.
- Promote the use of autonomous and connected vehicles in order to optimize the impacts on mobility, especially with regard to road safety, innovation and the environment.
- Raising the public's attention to the theme and promoting knowledge and sharing of experiences.
- Work jointly to develop coordinated policies and legislation with regard to self-propelled vehicles.

## 5. MAAS (Mobility as a Service)

- **Is there any kind of MAAS in your MR?**

No.

- **If yes, what is the role of the transport authority in this scheme?**

- **Is the scheme run by public or private operators?**

- **If there isn't any MAAS scheme yet, are there plans to introduce one?**

No.

## E) GOOD PRACTICE PRESENTATION

Please try and give a good example of how you/others manage transportation in your MR. Try and describe shortly the reasons for being a good practice. You can include links, pictures. (max. 1 page).

Good practice



Name:

## **Governance changes in Public Transport System in MR of Porto**

Context:

In August 2015, AMP has become the competent Transport Authority for public inter municipality passenger transport services, road transport lines that intersect more than one municipality and which are wholly or mainly developed in the metropolitan area of Porto.

The Porto transport network is constitute by:

- Metro do Porto, metro in 7 municipalities of the metropolitan area of Porto with 6 lines;
- Urban Trains in Porto, 82 stations, within a radius of 60 km around the Porto city and 4 different lines, covering 6 municipalities of the metropolitan Area ;
- STCP, public transport operator, that operates bus in 6 municipalities of metropolitan area of Porto;
- 34 Private bus operators,

However, with regard to municipal lines (with origin, destination and integral route in a single municipality) the municipalities assumed themselves automatically as transport authorities and with regard to public operators (Metro do Porto, STCP and train) the competence remained in the sphere of the State.

In this sense, AMP promoted a new management model with the following objective:

Improving citizens' mobility in the metropolis of Porto through greater efficiency and sustainable management of the public passenger transport service, as well as the universality of access and quality of services, economic, social and territorial cohesion, balanced development of the transport sector and intermodal coordination.

In pursuit of this strategy, AMP has established a broad collaborative platform structured in agreements, memoranda of understanding and delegation and sharing of competences that support the organization and management of metropolitan mobility. The main entities involved are the central state (Environment Ministry + Mobility and Transport Institute + Mobility and Transport Authority), the private operators represented by their association (ANTROP), the public operators, the municipalities and, of course, the metropolitan area of Porto.

### **- One Transport Authority**

With an inter-administrative contract for delegation of competencies, in reality 17, was possible to transform the 17 municipal authorities plus the metropolitan authority into one, which results in a significant gain in efficiency, in optimizing human, technological and financial resources, facilitating the standardization of procedures and better articulation with transport operators.



**- Creation of Technical Management Units (TMU).**

The Delegation of Competence Agreement also provided for the creation of Technical Management Units (TMU). These TMUs makes possible for the State to delegate to the inter-municipal entities the competences that are committed to it. An example is the TMU of municipalities served by the STCP network, a state-regulated operator, which, by means of an inter-administrative contract, will delegate the competencies of regulating, supervising and supervising STCP careers at TMU\_STCP, coordinated by the Municipality of Porto and by the AMP and will include representatives of the other 5 municipalities where STCP bus operate.

**- Working groups (WG)**

Different WG, involving different organizations, were created in order to share competences and developed common projects to reach the common goal.

Main stakeholders involved:

- AMP
- 17 municipalities
- Environment Ministry
- Mobility and Transport Institute
- Mobility and Transport Authority
- STCP (public bus operator in Porto city)
- ANTROP (Association representative of the private bus operators)
- TIP – the enterprise responsible for the intermodal ticket system

Web links:

Why is the practice considered as 'good'?

The articulation of several players allows a shared vision for the mobility on MR level. Enables the citizens of the MR to have an integrate public passengers transport system, with an efficient and sustainable management.

Main results:

- Significant efficiency gains to the design level of networks and promotion of inter-modality, while optimizing the cost calculation, according to the type of needs and available resources.
- Amplification of the use of the ANDANTE (intermodal ticket system) to more operators and more area of territory.
- Better information to public (Move.me AMP app) – That allows the public to have access to integrated information related with public transport.
- Better planning - the transport model (in construction)
- Oversight – AMP as a transport authority will have the tools to see the gaps between the planned and the reality.

**Good practice**



Name:

## **ANDA – The new ticket system of the MR of Porto**

Context:

ANDA is a ticketing system based on a mobile application. It was developed by TIP- Transportes Intermodal do Porto (the enterprise responsible for our intermodal ticket system – ANDANTE), in collaboration with transport operators and the Faculty of Engineering of the University of Porto.

It is intended for users of public transport in the Metropolitan Area of Porto.

It represents an investment of around two million euros, fully supported by the Environmental Fund of the Ministry of the Environment.

In this moment ANDA is in the experimental face (few selected lines and users).

Main stakeholders involved:

- TIP – the enterprise responsible for the intermodal ticket system
- AMP
- Transport Operators
- Faculty of Engineering of the University of Porto

Web links:

Why is the practice considered as 'good'?

It makes the ticket system much easier for the user, the passenger just needs to have an app in his smart phone and the payment is made after the end of the months of usage and the algorithm developed for the system will present the most economical and cost-effective tariff solution for the customer.

**Does your organization have questions about managing transportation, that you would like to be discussed in the forthcoming workshop?**

- What solutions do you have for PT in areas of low demand?
- Do you have any practices or projects on the use of the new communication technology in the management of the flexible public transport



ROME

# SMART-MR INVENTORY ON MANAGING TRANSPORTATION

Rome Metropolitan region

PP(s) responsible: BKK Centre for Budapest Transport

INVENTORY ON MANAGING TRANSPORTATION



### General instructions on the level city/region/MR:

In the SMART-MR project the majority of the questions and data is related to the Metropolitan region (MR) which means the metropolitan city and the surrounding region together, thus where not indicated in the following Inventory, please describe your MR. If there is a lack of data, or information, please indicate, whether you refer to the city, or region itself. In some questions specific data is asked about the city or region separately, in these cases region is meant the area outside the city.

### A) QUESTIONS ON DATA ABOUT TRANSPORTATION

#### 1. General data about the city/region

	City	Region
Area (km <sup>2</sup> )	1 287.36	17 242.29
Population	2 873 494	5 897 526
Density (capita/km <sup>2</sup> )	2 232	342.04

#### 2. Public transport network and performance in the city (the latest possible data):

Year:	Network length (km)	Number of vehicles	Passengers transported/year	Passenger km/year
Metro	59	102	281 300 000	-
Suburban rail	68	50		-
Tramway	31	164	31 900 000	-
Trolleybus	12	30		-
Bus	2 252	2 049	1 206 500 000	-
Other	-	13		-
Total	2 422	2 408	1 519 700 000	-

#### 3. Questions on the bus system (city, trolleybuses excluded):

- What is the average age of the buses?  
11 years
- What propulsion system do buses use? (If exact numbers are not available, please indicate with "+" or "-" whether the system is available.)

Propulsion system	Number of buses
Diesel EUR III or lower	486
Diesel EUR IV	341
Diesel EUR V	958
Diesel EUR VI or higher	32
CNG	-
Hybrid (diesel/electric)	-
Full electric	170



Other (please specify) Methan	362
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#### 4. Modal split

- **What is the modal split in your city/region (share of PT, cars, bicycles, taxi, walking, etc.)?**

The modal split in Rome is

Car:55% , Moto:10% , Public Transport: 25% , Walking: 9% , Cycling: 1%

- **How and out of which data is the modal split calculated (no. of passengers, or passenger km)?**

It is calculated through specific surveys on the systematic journeys and based on number of trips.

- **How often is the modal split calculation updated?**

There is a National Census every 10 years, the Mobility Agency of Rome is doing survey every 3-4 years to update the data.

#### 5. Please describe the data sources which you use for statistics (if demand, supply and fleet data sources are common, please feel free to join cells):

	Demand data	Supply data	Fleet data
<b>What are general data sources, which you use?</b>	The main source of data is the National Institute of Statistics (ISTAT) and from the fare payments.  For the city of Rome data are elaborated through the TDM software of the mobility Agency.	Mainly from transport operators	From Automobile Club of Italy and the Minister of Infrastructure and Transport (MIT)
<b>What kind of (strategic) agreements do you have with data suppliers?</b>	There are agreements with ISTAT for the National Census every 10 years and for collecting and transmitting data on road safety.	The agreement is in the service I with the operators.	There is no agreement, but the Municipality can access the data freely.
<b>What kind of long time data series do you have, and for which period? (E.g. for the past 10 years, from 1970, etc.)</b>	The data on mobility are collected with the National Census every 10 years. The fare payments are usually yearly.	These are collected yearly or monthly.  Data related to service quality and respect of contract are collected in real time.	These are collected continuously.



<b>Which part of the data is open and how is it publicly accessible?</b>	These are all open.	There are yearly report that are public.	The Region and the city can access free of charge
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## 6. What kind of tariff and ticketing system do you use in your city/region?

- **Is there an integrated ticketing system?**

Yes, it is called Metrebus and covers the entire Lazio region and involves the 3 operators: ATAC, Cotral and Trenitalia.

- **Is the ticketing system paper based or electronic?**

It is hybrid. The tickets have a magnetic band; the monthly and yearly passes have a chip in the card.

- **Is the pricing system km based, ring/zone based, or other?**

It is concentric zone-based with Rome at the centre.

- **Do you use a single ticket per ride or is it time-based?**

The tickets are time-based.

- **What are the basic ticket/pass types being used?**

Magnetic band and card with a chip.

The entry-level ticket in Rome is called BIT-100. It is valid 100 minutes from first validation and can be used unlimited times on busses, trams, trolley-busses, light-rail and allows a single ride on Metro (Lines A-B-C) and a single ride on Trains operating in Rome's metropolitan area.

At a Regional level the entry-level ticket is called BIRG-1. It is valid until midnight of the day of first validation. Furthermore it can only be used in one of the 6 zones into which Latium Regions has been divided as per public transportation.

Further details are available at <http://atac.roma.it/page.asp?p=229&i=14>

- **What is the price of a single ticket/monthly pass within the city (in EUR)?**

A single ticket for 100 minutes of travel on the entire PT network inside Rome is 1.5 euro. The standard cost of the monthly pass for the Rome zone is 35 euro.

- **What is the most used ticket/pass and what is its price (if different from the previous question)?**

Most used ticket is the BIT-100

- **What are basic discounts used (students, elderly, etc.)?**

There are special fares for the elderly (over 70) with low income, for students, disabled and for the unemployed,





- **Are there any changes in the ticketing system foreseen?**

The change is related to a new, more realistic distribution of the revenue among the different operators.

- **What is the current average petrol price (EUR/l)?**

€1.645

- **Are your bus service tender contracts (if available) dependent on the petrol price? If yes, how?**

Yes. In general the contracts specify a function to calculate the variation of the price agreed with the variation of the cost of fuel, and other factors.

**7. Please describe the public transport connection of the (main) airport with the city centre.**

Mode	Distance (km)	Travel time (Minutes)	Frequency (peak)	Single fare (EUR)	Operated by public, or private company
Track based	31	32 to the city centre	4 trains/hour	14	Public
Track based	26	31 to the Ostiense station	4 trains/hour	8	Public
Bus	32	60 to the city centre	Every 10 minutes	5	Private with a marginal public operator

**8. Passenger satisfaction:**

- **Do you measure passenger satisfaction?**

Yes, yearly.

- **If yes how?**

The Mobility Agency of Rome every year performs a Customer Satisfaction Analysis based on all the mobility services provided to the citizens.

In addition the transport operators yearly conduct a survey of the passengers; second, the Agency for the control of the quality of the public services of Rome separately conducts its own survey of the passengers.

- **What are basic viewpoints/criteria for the survey (on what criteria do you ask/evaluate)?**

Quality perceived, accessibility, regularity, and price.

- **How often is it measured?**

Every year.

**9. Transport model:**



- **Do you use a transport model for planning or evaluation of projects?**

Yes

- **If yes, which one and for what do you use?**

TransCad® is a Geographic Information System (GIS) designed specifically to store, display, manage, and analyze transport data.

It combines GIS and transportation modeling capabilities in a single integrated platform. It can be used for all modes of transport, at any scale or level of detail. It provides:

- A GIS engine with special extensions for transport.
- Mapping, visualization, and analysis tools designed for transport applications.
- Application modules for routing, O-D matrix estimation, demand supply matching with several algorithms, traffic assignment utilities including: screenline analysis, subarea focusing, and select link/zone analysis travel demand forecasting, public transit, transit networks and paths, transit assignment logistics, site location, and territory management.

- **How is the model fed with data, and how is data made available?**

The supported data structures are points, lines, and area layers, matrices and desire lines, route systems, networks. The data are collected through surveys and traffic countings.

- **How often is the model updated?**

Every two to three years and during the elaboration of a plan.

## **B) INSTITUTIONAL STRUCTURE, FUNCTIONAL QUESTIONS**

### **Questionnaire about the local and regional institutions and their functions**

**1. Who are local and regional competent authorities/institutions regarding transportation in your MR?**

The Region, the Metropolitan Area, the provinces and the municipalities. The Ministry of Infrastructure and Transport for all transport-relevant systems at National level, such as port, airport, railway and road networks, and some regulations.

**2. Please describe their service competences, responsibilities and decision making processes.**

The region competences are regulatory on all public transport, land use, minor ports, and airports, but the region also owns a public transport company, some regional railways, and a regional road network, that it manages through a regional Agency.

Mobility, logistics and transport represent some of the core competences of the Metropolitan City of Capital Rome. The main initiatives are:

- promotion of initiatives regarding mobility and participation in European projects aimed at increasing the use of public transport



- development and adoption of the SUMP as part of the initiatives to implement the Provincial Territorial Coordination Plan PTPG;
- business manager and area mobility activities;
- construction of mobility infrastructures;
- detection and analysis of traffic flows on the road network of the metropolitan area.

The MCCR prepare a metropolitan area transport and land use plan, which needs to be approved by the region.

The competence of the municipalities are in local infrastructures, facilities, transport, traffic and land use. They have two main long-term plans: the land-use plan, the Sustainable Urban Mobility Plan and a short-term plan for traffic, public transport and logistics.

**3. Is there any transport authority in your city/region/MR?**

Yes.

- **If yes, on which level: city/region/MR (i.e. transport association),**

There is one at National level.

- **What are the limits of a transport authority (territorial and service oriented /i.e. taxi, railway, etc./)?**

The competences are regulatory in all the transport matter.

**4. Is there a cooperation between city and region in terms of transport and/or land use planning? If yes, please describe it briefly (common tariff, integrated regional transport, etc.).**

Yes. The main issues are common regional fares of public transport, integration of transport networks and transport systems, land use, environmental protection.

**5. How are competences between different institutions regulated regarding owner, supervisor, operator on local/regional level?**

By laws that indicates the respective competences.

**6. What is the relationship between public authorities and private initiatives? How are new forms of transport regulated (like carsharing, Uber, etc.)?**

The Ministry and the region can establish the general rules; the authorisation to develop a new service in the municipal area is the responsibility of the municipality.

**C) QUESTIONS ON REGULATIONS**

**1. Parking:**

- **What are local building regulations for parking places regarding new buildings/refurbishments?**

They have to respect the national law that prescribes a minimum standard of 1/10 of the volume in m<sup>3</sup> built, the land-use plan, and the safety rule at the national level.

- **How do local regulations serve transport policies?**



Unfortunately there is often a distorted competition between the public and private services, mostly the regulations are too permissive and in favour of the individual mobility.

- **What are basic regulations regarding parking on public space? (tariff, parking permits, local beneficiaries, etc.)**

The ordinary fare is €1.00 per hour outside the Limited Traffic Zone (LTZ) and €1.20 per hour in the LTZ.

A discounted rate is valid everywhere: €0.20 for a 15-minute stop (short stop, for payments made only from the parking meter); €4.00 for 8 hours of continuous parking; €70.00 for one calendar month.

Residents with permission and electric cars, hybrid cars, car sharing, in addition to such categories as people with disabilities, required by law, are exempted from paying the fare within the blue lines.

On some streets within some areas of payed parking there is a proximity tariff (also valid for residents and designed for those who go to work): €0.50 first hour, €0.50 second hour, €2 for 12 hours, €3 for 16 hours.

The streets where there is an hospital and payed parking there are often free parking for no more than three hours.

- **What is the relationship between parking houses vs. parking on public space? Are there any contradictions?**

The former can choose their fare, which is always more than a public space. The contradiction is with illegal parking, which often goes unpunished.

- **Please describe the basic parking discounts if there are any (on engine EUR category, emission, propulsion system, disabled, etc.)**

Residents with permission and electric cars, hybrid cars, car sharing, in addition to such categories as people with disabilities, required by law, are exempted from paying the fare inside the blue lines.

- **What are major milestones in parking policy in the recent past and in near future? (enlarging parking zones, reducing discounts, handling of exceptions, etc.)**

The Traffic Plan of Rome was in favour of increasing the fares and, in a second step, of implementing a congestion charge zone (CCZ), but when they tried the first measure, there was a protest by a consumer association and a formal request to the administrative tribunal of Lazio for the elimination of the measure. The tribunal held in favour of the association because of the inefficient public transport.

- **P+R, B+R**

- **How many P+R and B+R? spaces are there in the city/region?**

	City	Region
P+R	15 053 and 335 for disabled people	4 200
B+R	?	?

- **Is the usage of P+R and B+R spaces free or priced?**



Public spaces are free with a transport pass, otherwise you have to pay, but there are several price reduction, related to frequency of use.

- **Please describe your P+R, B+R standards.**

There are no standards.

- **What are general principles (strategy) for developing P+R and B+R spaces?**

There are not strategies but needs. The first is the insufficient service of feeding bus is one reason; the second is the sprawl of residences that cannot be served by the traditional bus transport.

## 2. Tourist coaches/hop-on hop-off services:

- **What are basic regulations of entering and moving around the city?**

They must pay a permit from the Municipality. The hop-on hop-off will have an approved route with stops.

- **How do you regulate stops, waiting areas, terminals?**

The municipality decides stops, waiting areas, and terminals, based on reducing the impact on the traffic.

- **Are you contracting operators? If yes, what are basic contracting options for touristic services (using levies, taxes, etc.)? No**

- **Is the usage of bus lanes allowed for those vehicles?**

In some cases, yes.

## 3. Congestion charge

- **Do you have a congestion charge, or do you plan to introduce one?**

Yes, we have one foreseen in the Traffic Plan of Rome.

- **If yes, for what purpose?**

To reduce congestion and pollution.

- **What are basic impacts, experiences with your existing congestion charging system?**

- **What are revenues used for?**

## 4. LEZ (low emission zone)

- **Do you have a LEZ, or do you plan to introduce one?**

Yes. We have a ZTL in the centre, two small ZTL during the night and one bigger inside the railway ring.

- **If yes, on what principle is it working?**

To go inside the ZTL you need a permit issued by the Mobility Agency. There are different permits for residents, some kinds of workers, institutions, and freight vehicles.

- **What are your experiences, and future plans with LEZ?**



The municipality has plans to enlarge the present Limited Traffic Zone and to restrict vehicular access in particular to diesel powered vehicles in the next decade..

## 5. Bus lane usage

- **Do you have dedicated bus lanes?**  
Yes, and there is a plan to extend them.
- **If yes, who is allowed to use the bus lanes (taxi, bicycle, carsharing, etc.)?**  
Buses, taxis, limos, and carsharing.
- **How are bus lanes supervised to avoid inappropriate usage?**  
Some bus lanes are supervised with remote control (surveillance cameras).
- **Do you have any other dedicated type of lanes (i.e.: HOV lane, temporary parking lane, etc.)?**  
No

## D) ALTERNATIVE SYSTEMS, FUTURE

### 1. Strategic plans:

- **What is your planning horizon in transport developments, strategies?**  
10–20 years
- **What are your city's/region's/MR's transport policy goals?**  
There is no approved long-term transport plan at regional and city level. But the plan documents are indicating goals to improve public transport, reduce the impacts of infrastructure and such facilities as airports, reduce the road accidents, congestion, and pollution.
- **Are you using a SUMP methodology, and if yes, on what phase are you currently working on?**  
Yes. The city of Rome, with its mobility agency, is working on a SUMP, but it is still in a preliminary phase.

### 2. E-mobility:

- **What is the situation of the e-mobility (number of e-cars/hybrids, charging stations, etc.) in your MR?**  
There are a little more than one thousand electric cars and 68 charging stations in Rome.
- **What are basic incentives for e-mobility on local/regional/state level?**  
E-cars do not pay for public parking and can enter the ZTL without permis.
- **Is there any difference to conventionally fuelled cars regarding public space usage/parking?**  
Yes, e-cars do not pay for public parking.
- **Who is building/financing the grid to the charging stations?**



There are several sources; the main one is the Ministry of the Environment.

- **Who is building/operating charging points in your city/region?**

The electric company ENEL and ATAC.

- **What are future development plans regarding e-mobility?**

There is an ambitious plan by ENEL to install a thousand charge stations throughout Italy.

### 3. Carsharing, bikesharing

- **Is there any carsharing/bikesharing scheme in operation in your MR?**

Yes

- **If yes, with which propulsion system (conventional/electric/mixed) is it running?**

Conventional

- **Who is running the service: public/private?**

Private operators

- **How is it regulated, is it a public task, or a free market initiative (or something in-between)?**

A free market initiative.

- **How is bus lane usage regulated for carsharing vehicles?**

They can use the bus lanes.

### 4. Autonomous vehicles:

- **How actual is the question regarding autonomous vehicles in your MR?**

They are mentioned in the regional Transport Plan. The first envisaged applications are related to public transport for examples to feed the railways stations in the rural areas.

- **Is there any regulation for autonomous vehicles?**

Not at the moment, but something has the attention of the Ministry of Infrastructure and Transport.

- **Is the infrastructure fitted? What steps do you plan in this regard?**

The infrastructures are not fitted. There is a lot of work to do and there is no plan.

### 5. MaaS (Mobility as a Service)

- **Is there any kind of MaaS in your MR?**

Carsharing services.

- **If yes, what is the role of the transport authority in this scheme?**

The National transport Authority is in favour of these systems, but the regulation is the responsibility of the municipalities.

- **Is the scheme run by public or private operators?**

There are three operators, two private and one managed by the mobility agency of Rome.



- **If there isn't any MaaS scheme yet, are there plans to introduce one?**

No, there is not a scheme, a framework for a MaaS

### **E) GOOD PRACTICE PRESENTATION**

Please try and give a good example of how you/others manage transportation in your MR. Try and describe shortly the reasons for being a good practice. You can include links, pictures. (max. 1 page).

<b>Good practice</b>
Name: Roma TPL: the company that broke the monopoly of public transport in Rome
Context: Roma TPL is the second manager of Public Transport (TPL) of Rome, where it operates mainly for the operation of "Peripheral Lines", according to a Service Contract awarded in 2010 by Roma Capitale, after a specific European tender. The Service Level Agreement concerns the exercise of the Peripheral Lines of the Municipality of Rome for 8 years, for approximately 28 million km a year. This is about 20% of the bus transport service operated in Rome. The remaining 80% is operated by ATAC, which is the first manager of the Roman TPL. The Company has a fleet of about 440 buses and involves a total of 1900 people to operate the 83 peripheral lines of its competence. It has 5 depots in the city and is positioned, in terms of size, above the average of Italian Local Public Transport companies. The Company has ISO 9001/2000 Quality Certification and is committed to providing a professional service to users in a context of continuous improvement.
Main stakeholders involved: Roma TPL is a consortium of three members with equal shares, one public and two private. The transport service is controlled by the mobility agency of Rome.
Web links: <a href="http://www.romatpl.com/">http://www.romatpl.com/</a>
Why is the practice considered as 'good'? Roma TPL was the first example of a European tender in Rome to assign public transport and to break the monopoly of the incumbent ATAC, owned by the municipality of Rome, which consequently had the contradictory role of controlling its own company. The plan was to divide the public transport service into 4-6 areas and request tenders for all of them, but the next city administration of Rome did not continue the policy. The Rome TPL Service Contract does not refer to standard costs, but provides, in addition to specific penalties related to factors of regularity and quality of service, remuneration proportional to the mileage output provided. It is a gross cost contract.





A positive result was a drastic diminution of the cost per bus-km, half of the ATAC.

Another positive aspect is in the monitoring of the services of Roma TPL by the mobility agency.

The Roma TPL buses have on-board GPS, cameras, and sensors at the door to count the boarding and alighting passengers.

The mobility agency can check in real time whether scheduled services are being respected and apply the penalty. There are no rewards for better service.

The figure shows the penalty applied to the Roma TPL during the period from 2011 to 2016.

