



Cities.Multimodal (CMM) Preparatory Analysis Report

Work Package 2 'MULTIMODAL CITY QUARTERS - Reducing car dependency, congestion and pollution', Group of Activities 2.1 'PREPARATORY WORK AND ANALYSES of city quarters' multimodal transport and mobility conditions'

Work Package 3 'MOBILITY MANAGEMENT - Changing behavior from driving a car towards using environmentally friendly transport modes', Group of Activities 3.1 'PREPARATORY WORK'

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TU Berlin, Center for Technology and Society / Hanseatic City of Rostock

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1 Introduction

Cities.Multimodal with the main goal of changing cities from a car oriented one to a more sustainable urban mobility wants to make it easier for people in cities around the Baltic Sea to combine walking, cycling, public transport and car-sharing as an environmentally friendly alternative to using private cars. Adapting the concept of Sustainable Urban Mobility Planning (SUMP), CMM in cooperation with the partner cities, NGO's and other experts, aim at developing and applying a low-threshold approach for environmentally friendly urban mobility, attractive and easy to adopt for follower cities. The 10 partnering cities of Aarhus, Gdansk, Guldborgsund, Kalmar, Karlskrona, Pskov, Riga, The Hanseatic City of Rostock, Tartu, and Vilnius chose areas within the dense inner city that are brimming with sustainable mobility potentials as pilot areas for the implementation of various multimodality, mobility management and capacity building activities.

The project will result in the implementation of

- mobility points within the pilot areas for most cities,
- mobility management activities with kindergartens, schools, companies and investors
- a planners handbook for sustainable urban mobility planning in city quarters,
- a toolbox for mobility management compiling concepts and measures for the selected target groups
- training courses for multipliers and stakeholders, and
- a guideline including up to 20 tested new and innovative methods and tools on involving cities in SUMP.

This report is to detail out the objectives, approach and methods used in carrying out the Preparatory Analysis phase of Work Packages 2 'MULTIMODAL CITY QUARTERS - Reducing car dependency, congestion and pollution' and Work Package 3. 'MOBILITY MANAGEMENT - Changing behavior from driving a car towards using environmentally friendly transport modes'.

2 Objectives

The main aim of this Preparatory Analysis phase in Work Package 2, is to explore the status quo of multimodal transport and of the framework conditions in the selected city quarters as a basis for the development of local concepts and the identification of transferability to other cities. The reference analysis of cities' multimodality situations and benchmark analysis contains the following outputs as a result of the activities that have been carried out within the Group of Activities '2.1 'PREPARATORY WORK AND ANALYSES of city quarters' multimodal transport and mobility conditions':

- Joint criteria catalogue for categories of specific city areas as pilot areas, identifying the most important criteria of multimodal transport
- Reference analysis of cities' multimodality situations, combining all parameters to an overview of the multimodality situations of the cities' areas
- Benchmark analysis describing the success factors and transferability of good practices

In terms of mobility management, which is the subject of Work Package 3 'MOBILITY MANAGEMENT - Changing behaviour from driving a car towards using environmentally friendly transport modes', it aims at ensuring a common understanding about mobility management and a joint approach to analyze the local conditions. The following outputs are expected:

- Basic tools for Mobility Management
 - Standardized questionnaire for stakeholder interviews
 - Template for SWOT analysis of PPs Mobility Management strategies and solutions including demand profiles for different target groups
 - Overview of good practice examples for mobility management measures
- Local Analysis
 - Presentation of survey results
 - Individual SWOT analyses for each partner city

3 Approach

In order to make things more feasible for the partner cities and to maintain a constant dialogue with them, a step wise approach was selected to carry out the Preparatory Analysis in a conjoint way for both Work Packages mentioned above. The analysis was structured into three phases, based on the nature of the data to be collected, as each phase required a different approach to data collection.

4 Methods

The 10 partner cities were provided with 3 guidelines prepared by TU-Berlin to gather data according to the three phases (cp. Annex).

Phase 1 consisted of questions regarding the general city data (area, population, climate etc.) and its transport infrastructure (public transport figures, biking infrastructure etc.). This data was gathered by desktop research by the coordinators of cities.m multimodal in the participating cities.

Phase 2 focused on the different aspects of mobility management in the cities (presence of mobility management plans, programs, strategies etc.). The collection of this data required interviews with experts from the transport and mobility field. Also, in this phase information regarding multimodality that could not have been gathered by a simple desktop research in the first phase should have been gathered. An interview guide aiding this process was provided to the cities by TU-Berlin.

Phase 3 was concerned with the user perception of its transport system (quality of service, spatial accessibility, economic accessibility, safety etc.). The data for this phase was compiled on the basis of qualitative surveys that should have been carried out by the partner cities. The received feedback from the cities was compiled into an excel table, for analysis and comparison between the partner cities.

In addition to the guidelines of the three phases, an additional guideline was sent out by TU-Berlin to aiding in the SWOT analysis of mobility management in the partner cities. Referring to objectives formulated in Work Package 3, the SWOT analysis should have been carried out by the cities in order to assess the conditions for mobility management. As a reference to Work Package 2, it was recommended to conduct it for the purpose of the assessment of the multimodality conditions as well.

5 Data Analysis

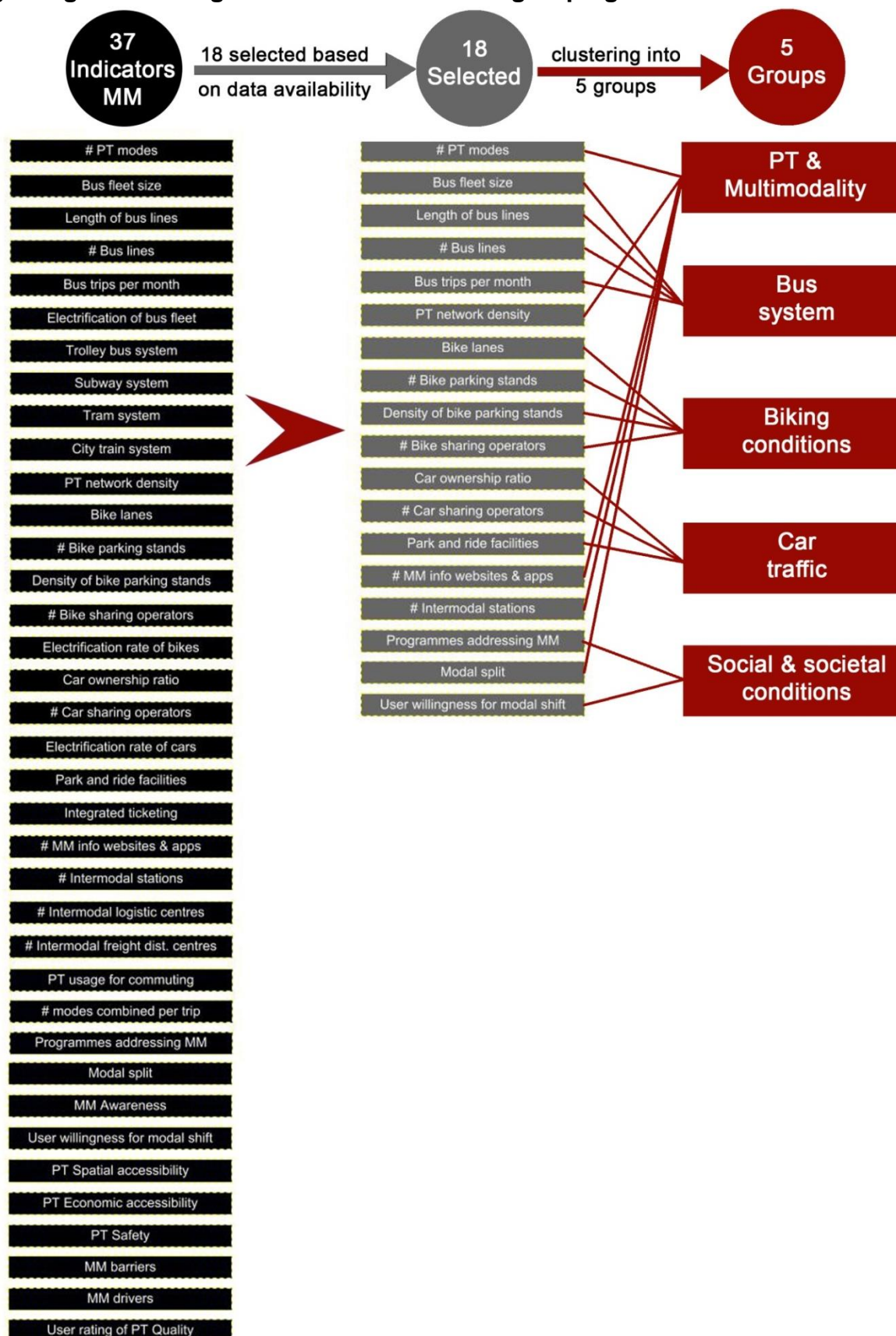
The various steps undertaken in the analysis of the data are as follows.

5.1 Indicator selection

Out of all the questions submitted in the 3 phases and keeping aside the indicators of mobility management, 37 indicators could have been identified that pertained to multimodality. These 37 indicators were then narrowed down to 18, on the basis of feasibility as the information was delivered by most cities. Thus, it has to be mentioned that these indicators reflect the availability of data in the participating cities. These indicators are not necessarily the most significant ones to assess multimodality. These 18 multimodality indicators were then divided into categories, pertaining to 'Public Transportation and Multimodality'. 'Bus System'; 'Biking Conditions'; 'Car Traffic' and 'Social and Societal Conditions' (cp. Fig 1).

A comparative analysis amongst all 10 cities on the basis of these indicators was carried out to identify strengths and weaknesses to tailor measures specific to each city's requirement. As the 10 participating partner cities are all of varying area and population and since the methods of data collection in the cities were differing, this method of analysis by comparison cannot present scientifically valid information – it however is capable to give first comparisons of the situation in the cities regarding multimodality.

Fig 1: Figure showing indicator selection and grouping



5.2 Indicator ranking

As part of the comparison between the partner cities, each city was ranked, per indicator. This method of ranking and comparison does not always produce scientifically valid information and is mostly in the favor of bigger cities, The problem being that that bigger cities, having higher numbers would be at an advantage (no. of public transport modes), however these should be considered merely as a tool to provide an impression of the multimodality status to the different cities in the Baltic region. A few of the indicator figures (such as length of bus lines, monthly bus trips, bus fleet size, bike lanes etc.) were modified to show a relation with the city size. The following table gives an overview, in which way the performances relating to the specific indicators have been ranked and whether they have been adjusted to city size or not.

Table 1: Ranking method of Indicators

#	Indicator	Ranking Method	Adjusted to City Size?
1	Number of Public Transport modes	Higher ranking for more modes. 9 = best, 1 = worst As the term itself suggests multimodality greatly depends on the no. of options available. More the no. of options, more multimodal the city can be.	No
2	Number of bus lines	Higher ranking for more lines. 9 = best, 1 = worst More the no. of bus lines more is the catchment area of public transportation and the potential interlinkages to other modes encouraging multimodality.	No
3	Length of bus lines/city area	Higher ranking for longer lines (Km of lines divided by city area in km ²) Highest value = 9, lowest value = 0 Longer the bus network more is the catchment area of public transportation and the potential interlinkages to other modes encouraging multimodality.	Yes
4	Bus trips per month/population	Higher ranking for more trips per month (number of trips dived by city population). Highest value = 9, lowest value = 0 More the no. of bus trips per month, more sustainable is the travel behaviour of its citizens, indicating less dependence on private motorised vehicles	Yes
5	Bus fleet size	Higher ranking for larger fleet size (Number size of bus fleet divided by population of city area) Highest value = 9, lowest value = 0 Bigger the fleet size, higher the frequency of routes, more convenient is the usage of public transport.	Yes
6	Public Transportation Network density	Higher ranking for higher density. 9 = best, 1 = worst Denser the network, more accessible it is to the public, higher is the potential linkages to other modes encouraging multimodality.	Yes
7	Length of bike lanes	Higher ranking for longer lanes (Km of bike lanes divided by city area). 9 = best, 1 = worst More the biking infrastructure in a city, more feasible is biking as a means of mobility for its citizens, promoting sustainable travel behaviour	Yes
8	Number of bicycle parking stands in public space	Higher ranking for more stands (total number). 9 = most, 1 = lowest More the biking infrastructure in a city, more feasible is biking as a means of mobility for its citizens promoting sustainable travel behaviour	No

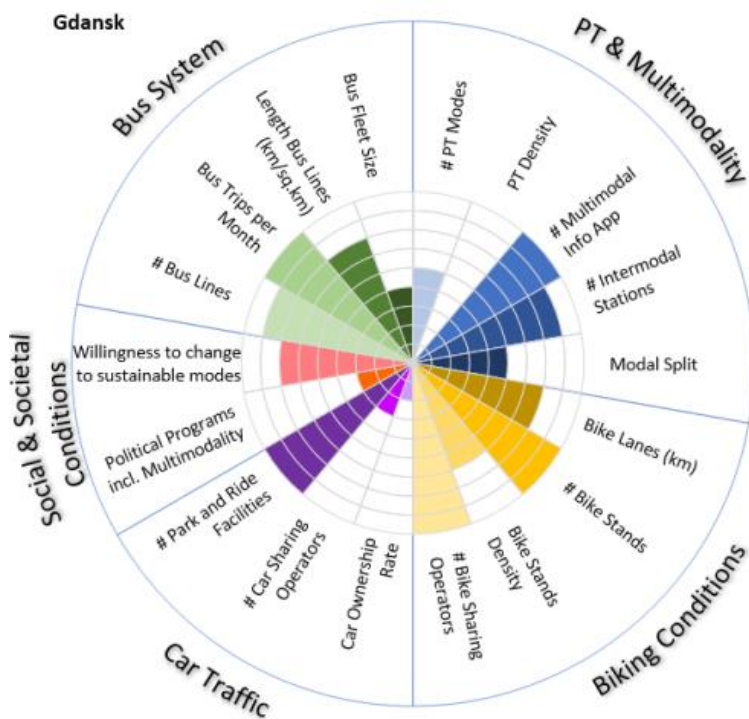
9	Density of Bicycle parking stands in public space	Higher ranking for higher density (total value – was assessed as such). 9 = best, 1 = worst More the biking infrastructure in a city, more feasible is biking as a means of mobility for its citizens promoting sustainable travel behaviour.	Yes
10	Number of Public and private bike sharing operators	Higher ranking for larger number of operators (total numbers. Note: private rental services were treated the same as public rental services. This needs to be changed in further assessments) 9 = most, 1 = lowest More the number of operators, more number of bike fleets around the city districts, urging users to pursue sustainable modes as an alternative to private motorised vehicles.	No
11	Car ownership rate	Higher ranking for lower rate (Rate of cars per 1.000 inhabitants) 9 = highest, 1 = lowest More the number of cars per city, less usage of public transport there is making the city's travel behaviour less sustainable.	Yes
12	Number of Public and private car sharing operators	Higher ranking for larger number of operators (Counted were rental schemes (typically meant to replace private cars) such as Uber. Flinkster, Citybee, CarGuru). 9 = most, 1 = lowest More the number of car sharing operators, more is the impact on car ownership rate, reduction of parking stress and its environmental ill effects.	No
13	Number of Park and ride facilities	Higher ranking for larger number of facilities (total numbers not set into relation to city size.). 9 = most, 1 = lowest More the number of P+R facilities, more convenient it is for users to park their cars in a secure location and continue the rest of the trip with sustainable modes	No
14	Multimodal information websites and (navigations) Apps existing?!	Higher ranking for larger number of sources (total numbers). 9 = most, 1 = least More the number of apps and websites providing multimodal information, more pleasant is the user experience in being multimodal.	No
15	Intermodal Stations existing (passenger transport)?	Higher ranking for larger number of intermodal stations. (total numbers. If two are the same, the number of available modes at the station counts.) 9 = most, 1 = least More the number of intermodal stations, more convenient it is for users to transfer from one sustainable mode to another, providing them with a good multimodal experience	No
16	Average modal split (including sharing systems)	Higher ranking for cities with lower car usage. 9 = lowest, 1 = highest Higher the share of biking, walking and public transport usage in the city lesser is its dependence on private motorised vehicles, indicating more sustainable travel behaviour amongst its citizens.	Yes
17	Which political programmes and strategies exist that address multimodality in the specific city quarters that are in focus of CMM?	Emphasis on focus on sustainable mobility, long-term visions and engagement of the public and private institutions. Questions: Mobility plan covering pilot area? Mobility plan covering entire city area? Concrete sustainable mobility measures suggested? Multimodality and/or mobility management addressed? The number of positive answers gives total numbers per city from 2 to 4. Three categories were built: 2 times 'yes': Category gaining 3 segments 3 times 'yes': Category gaining 6 segments 4 times 'yes': category gaining 9 segments More the number of programmes and strategies to address	No

		multimodality, more enthusiastic and goal oriented is the city in encouraging multimodality.	
18	Willingness of changing mobility behaviour towards more sustainable modes: Could you imagine using public transportation or walking and cycling more frequently in future (instead of private car)? What would have to happen to make you use of more sustainable modes in future? Please share your suggestions with us.	<p>Main Question: Is a change to more sustainable modes likely in the future?</p> <p>Questions asked in surveys on site were differing a lot in detailed formulations. Sometimes percentages were available, sometimes estimations of experts.</p> <p>Ranking was done by TUB team in a discussion: "From the information available, which city's inhabitants do you perceive as being mostly willing to change mobility behaviour towards more sustainable modes?"</p> <p>Increased user willingness to shift to more sustainable modes is a good indicator of multimodal living.</p>	No

5.3 Spider graphs

The results of this stage were culminated into "fact sheets", presenting all the gathered data graphically into spider graphs. The spider graph for each city represented the rank it received on a scale of 1-9 for each of the selected 18 multimodality indicators. However, one should note that the comparative function of the spider graphs in the fact sheets is limited considering that not all the indicators are adjusted as per the city size, hence lacking to provide a common ground for comparison

Fig 2: Figure showing the spider graph of Gdansk



5.4 Category formation

Each of the cities were ranked on the basis of the 18 selected multimodality indicators on a scale of 1- 9, with the help of the ranking scheme explained in the previous section. The total 'score' that each city obtained was calculated by summing up the rank it received for each indicator.

Table 2: Method of score calculation for the city of Rostock.

S.no	Group	Indicator Ranks	Group Ranking
1	PT and Multimodality	Modal split (6), # Intermodal Stations (9), # Multimodal info apps (9), PT density (9), # PT modes (7)	6+9+9+9+7=40
2	Bus System	Bus fleet size (3), Length of bus lines (5), Bus trips per month (1), # bus lines (4)	3+5+1+4= 13
3	Biking Conditions	Bike lanes (5), # Bike stands (6), Bike stands density (5), # Bike sharing operators (5)	5+6+5+5= 21
4	Car Traffic	Car ownership rate (8), # car sharing operators (9), # park and ride facilities (9)	8+9+9= 26
5	Social and Societal conditions	Willingness to change to sustainable modes (2), Political programmes including multimodality (6)	2+6= 8
Total score			108

In the best scenario, the maximum score any city can obtain is $18 \times 9 = 162$, hence dividing that maximum score into 3 brackets, cities scoring between 1- 53 as "Startup cities"; cities scoring between 54 - 107 as "Scale up cities" could have been built; and lastly cities scoring the highest in comparison to the other CMM cities, fitting within the top ranking bracket of 108-162 as "Lighthouse cities"

Table 3: CMM cities in their respective categories

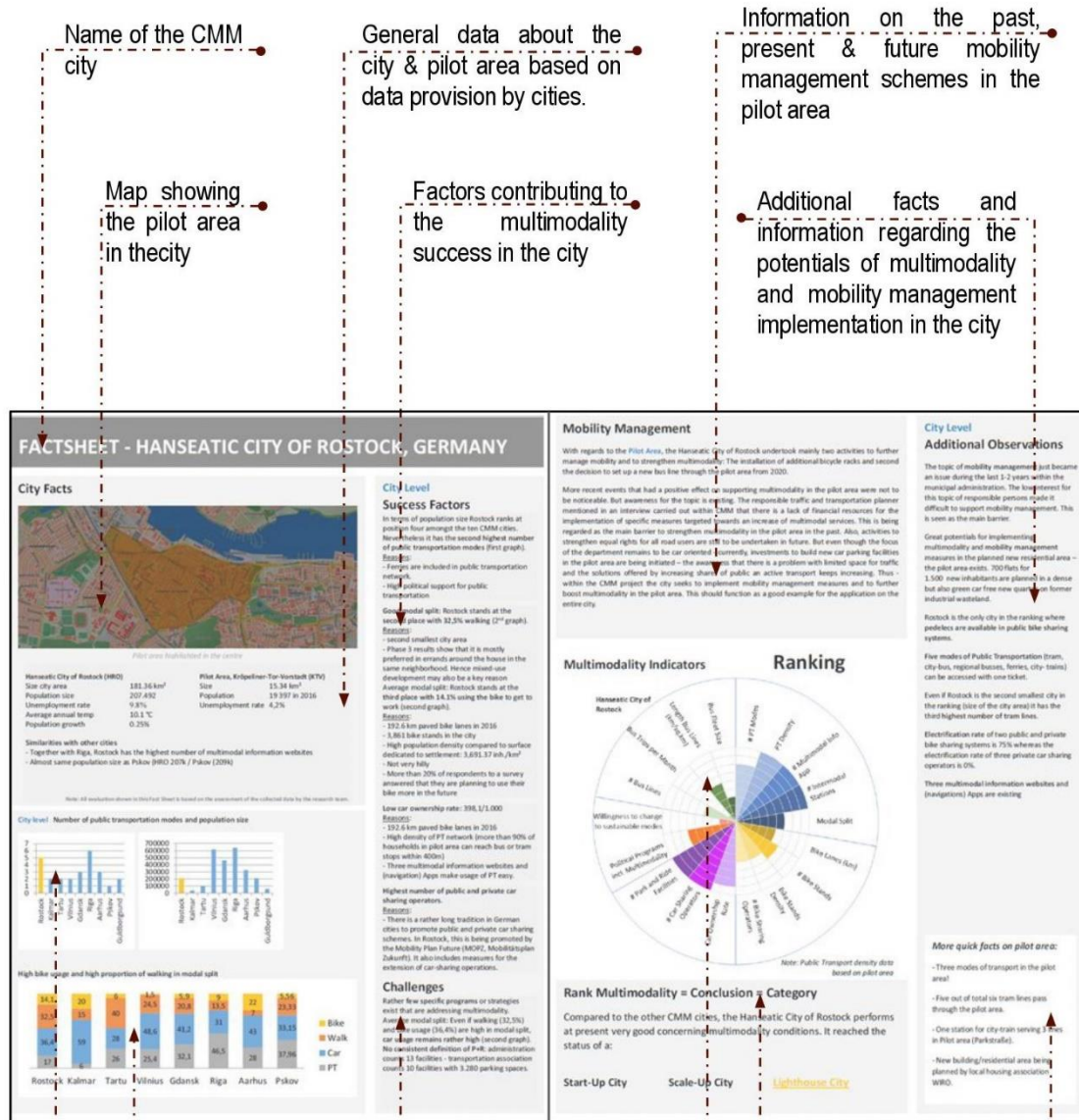
Category	Bracket	Cities
Lighthouse cities	108-162	Rostock & Gdansk
Scale up cities	54-107	Vilnius, Riga, Tartu & Aarhus
Startup cities	1-53	Pskov & Guldborgsund

5.5 Fact sheets

As mentioned earlier, the results of this phase were condensed into fact sheets, one for each of the partner cities with the main aim of initiating and facilitating discussions regarding the status multimodality and mobility management, both within city borders (administration/ politics/ private stakeholders) and beyond (among cities). Figure 3 represents a template showing the structure and content of a typical fact sheet.

Fig 3: Structure and content of CMM fact sheets

Structure and content of CMM fact sheets



Name of the CMM city

General data about the city & pilot area based on data provision by cities.

Information on the past, present & future mobility management schemes in the pilot area

Map showing the pilot area in the city

Factors contributing to the multimodality success in the city

Additional facts and information regarding the potentials of multimodality and mobility management implementation in the city

FACTSHEET - HANSEATIC CITY OF ROSTOCK, GERMANY

City Facts

Hanseatic City of Rostock (HRO)
 Size city area: 181,364 km²
 Population size: 207,492
 Unemployment rate: 9.8%
 Average annual temp: 10.1 °C
 Population growth: 0.25%

Pilot Area, Kriepelner-Tier-Vorstadt (KTV)
 Size: 13,38 km²
 Population: 19,397 in 2016
 Unemployment rate: 4.2%

City Level

Success Factors

In terms of population size Rostock ranks at position four amongst the ten CMM cities. Nevertheless it has the second highest number of public transportation modes (first graph).
Reasons:
 - Ferries are included in public transportation network
 - High political support for public transportation

General split: Rostock stands at the second place with 32.5% walking (2nd graph).
Reasons:
 - second smallest city area
 - Phase 3 results show that it is mostly preferred in errands around the house in the same neighborhood, hence mixed-use development may also be a key reason
 Average modal split: Rostock stands at the third place with 14.1% using the bike to get to work (second graph).
Reasons:
 - 132.6 km paved bike lanes in 2016
 - High population density compared to surface dedicated to settlement: 3,691.37 inh./km²
 - Not very hilly
 - More than 20% of respondents to a survey answered that they are planning to use their bike more in the future

Low car ownership rate: 358,1/1,000
Reasons:
 - 132.6 km paved bike lanes in 2016
 - High density of PT network (more than 90% of households in pilot area can reach bus or tram stops within 600m)
 - Three multimodal information websites and (transport) apps make usage of PT easy.
 Highest number of public and private car sharing operators.
Reasons:
 - There is a rather long tradition in German cities to promote public and private car sharing schemes. In Rostock, this is being promoted by the Mobility Plan Future (MOFZ, Mobilitätsplan Zukunft). It also includes measures for the reduction of car-sharing operators.

Challenges

Rather few specific programs or strategies exist that are addressing multimodality. Average modal split: Even if walking (32.5%) and bike usage (14.1%) are high in modal split, car usage remains rather high (second graph). No consistent definition of PAH administration covers 13 facilities - transportation association covers 10 facilities with 3,280 parking spaces.

Mobility Management

With regards to the Pilot Area, the Hanseatic City of Rostock undertook mainly two activities to further manage mobility and to strengthen multimodality: The installation of additional bicycle racks and second the decision to set up a new bus line through the pilot area from 2020.

More recent events that had a positive effect on supporting multimodality in the pilot area were not to be noticeable, but awareness for the topic is rising. The responsible traffic and transportation planner mentioned in an interview carried out within the CMM that there is a lack of financial resources for the implementation of specific measures targeted towards an increase of multimodal services. This is being regarded as the main barrier to strengthen multimodality in the pilot area in the past. Also, activities to strengthen equal rights for all road users are not to be undertaken in future. But even though the focus of the department remains to be car oriented, currently, investments to build new car parking facilities in the pilot area are being initiated - the awareness that there is a problem with limited space for traffic, and the solutions offered by increasing share of public an active transport keeps increasing. Thus - within the CMM project the city seeks to implement mobility management measures and to further boost multimodality in the pilot area. This should function as a good example for the application on the entire city.

Multimodality Indicators Ranking

Spider graph showing 18 Multimodality indicators and their ranking. Public Transport density is based on pilot area.

Rank Multimodality = Conclusion & Category

Compared to the other CMM cities, the Hanseatic City of Rostock performs at present very good concerning multimodality conditions. It reached the status of a:

Start-Up City Scale-Up City **Lighthouse City**

City Level Additional Observations

The topic of mobility management just became an issue during the last 1-2 years within the municipal administration. The long interest for this topic of responsible persons makes it difficult to support mobility management. This is seen as the main barrier.

Great potentials for implementing multimodality and mobility management measures in the planned new residential area - the pilot area exists. 700 flats for 1,500 new inhabitants are planned in a dense but also green car free new quarter on former industrial wasteland.

Rostock is the only city in the ranking where pedestrians are available in public bike sharing systems.

Five modes of Public Transportation (tram, city bus, regional buses, ferries, city-trains) can be accessed with one ticket.

Even if Rostock is the second smallest city in the ranking (size of the city area) it has the third highest number of train lines.

Electrification rate of five public and private bike sharing systems is 75% whereas the electrification rate of three private car sharing operators is 0%.

Three multimodal information websites and (navigation) Apps are existing.

More quick facts on pilot area:

- Three modes of transport in the pilot area!
- Five out of total six train lines pass through the pilot area.
- One station for city train serving 2 lines in Pilot area (Parkstraße).
- New building/residential area being planned by local housing association WRO.

Comparison of the modal share amongst CMM cities.

Challenges faced by the city to implement multimodality.

Additional pilot area information & facts

Comparison of indicators distinctly relevant to the city.

Spider graph showing the selected 18 Multimodality indicators and their ranking.

City multimodality category resulting from the analysis & comparison of indicators

6 Mobility Management: Local Analysis

Besides the assessment of the current condition of multimodality in the partner cities of CMM as formulated in Work package 2, the aim of Preparatory Work in Work Package 3 was to develop a common understanding of Mobility Management and to develop a questionnaire for surveys with stakeholders. The objective of the surveys was to get an overview about the existing traffic situation and mobility services, the accessibility of the institutions and the pilot area, challenges and stakeholder in the traffic sector. Another goal of the survey was to identify target groups for mobility management. This, and the analysis of the local circumstances (SWOT analysis) should build a basis for the preparation of Mobility Management concepts for each participating city in Activity 3.2.

The city of Rostock in cooperation with TUB developed interview questions for stakeholder interviews that have been sent to the cities within phase 2 of the Preparatory Analysis. Based on the results of these interviews, PPs developed individual SWOT analysis by applying the template and guideline provided by TUB (see annex). These local SWOT analyses have been sent to City of Rostock and TUB. Summaries of these SWOT results are also included in the Factsheets in section “Mobility Management” (on the second page).

7 Summary and Results

The following work schedule was followed during the analysis

- Phase 1 guidelines sent to the cities: 12. March 2018
- Deadline for sending the results of Phase 1 to TUB: 06. April 2018
- Phase 2 guidelines sent to the cities: 06. April 2018
- Deadlines for sending the results of Phase 2 to TUB: 04. May 2018
- Phase 3 guidelines sent to the cities: 04. May 2018
- Deadlines for sending the results of Phase 3 to TUB: 18. July .2018
- Guideline + template for SWOT analysis sent to the cities: 24. August 2018
- Deadline for sending SWOT to TUB/HRO: 28. September 2018
- First presentation of fact sheets to cities
(Project Meeting in Riga): 18. October 2018
- Deadline for sending feedback or approval of fact sheets
to TUB: 26. October 2018
- Revision and finalization of fact sheets by TUB: 26. October 2018
- Factsheets uploaded to website on: November 2018

The preparatory analysis phase of the project provides the partner cities with a baseline for self-evaluation. By initiating discussions and facilitating discussions amongst the partner cities, we see the purpose of the preparatory analysis being fulfilled. The cities were not only able to analyze their transport systems and framework conditions, but also learn from partner cities, paving the way for the formation of local concepts, knowledge transfer and identifying transferability options amongst cities. All the objectives mentioned earlier were met via the formation of guidelines assessing indicators, factsheets and the description in the fact sheets functioning as the joint criteria catalogue, reference analysis and benchmark analysis respectively. The decision to combine the preparatory analysis for both work packages



allowed to obtain a broader view of the partner cities' mobility situation and experiences regarding mobility management.

8 Conclusion

The methods selected to approach the preparatory analysis proves to be successful. By culminating all the data gathered into easy to comprehend visual fact sheets, more, not only are the work package objectives met but this has also resulted in the creation of a new tool to initiate and facilitate discussions within the various levels of stakeholders and actors both within the cities and beyond.

9 Annex

9.1 CMM Preparatory Analysis Guideline - Phase 1

CMM

Preparatory Analysis

Guideline for assessing the status quo and framework conditions of multimodal transport and mobility management in selected city quarters

Phase 1:

General information on the city, the pilot areas, the pilot institutions and transport infrastructure

Introduction

In the first phase **general data** on the cities, as well as data on their **transport infrastructure** and on the **pilot areas** with regard to the situation of Multimodality and Mobility Management will be collected. It should be possible to conduct this data gathering by a simple desktop research based on existing quantitative data or by brief consultations of respective experts. The results from this phase of data collection will enable a first cross-city comparison and build a basis for identifying transferable practices. Moreover they will build an information basis for planning measures tailored to the specific conditions and requirements of each city.

Instructions.

- 1) Please read the document “Preparatory Analysis Guideline for assessing the status quo and framework conditions of multimodal transport and mobility management in selected city quarters” carefully before you start collecting the required data. It will give you information on the background and purpose of this task.
- 2) The quantitative descriptions along the indicators listed below are to be regarded as minimally required data. Feel free to add other indicators and corresponding information describing the situation in your cities, pilot areas and pilot institutions in the tables.
- 3) If you have any other ideas on how you to describe or illustrate the situations in your cities, pilot areas and pilot institutions (by words, pictures or graphs), please make use of the text boxes below the tables.
- 4) **Please keep in mind the deadline for sending the data gathered by the cities within phase 1 to TUB is close: 6. April 2018**
- 5) If you have any questions concerning specific details in data gathering (data availability / methods for data gathering / data presentation /etc.), please contact:

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Indicators

Please describe your city/pilot area for **multimodality**:

General Indicators describing city/pilot area for multimodality	Unit	City	Pilot area Multimodality
Area	Square kilometres		
Population size	Number in thousands		
Population growth	Rate in %		
Geographic location	Country and state		
Economy (f.i. employees per sector / unemployment rate)	Textual descriptions with numbers / percentages		
Climate (Average Temperature per month / ...)	Degree Celsius		Not applicable
Characteristics of the urban morphology (land use / density / physical structure / city centres)	Textual description		
Characteristics of the regulatory background: Organisational structure of administration, government (parties), specific relevant local political goals, ...	Textual description		
Please add any other specific Indicator that you consider as relevant	Textual description		

Please add a map of your pilot area in which you plan your mobility points to demonstrate **multimodality** and locate your (possible) pilot institution(s) for **mobility management** (if applicable):

Please give us some more information on your transport infrastructure related to **multimodality**:

Transport infrastructure indicators, Multimodality	Unit	City	Pilot area Multimodality
Public Transport modes	Number		
Public Bus system	Number of lines / frequencies / total length in Km / passengers per month / fleet size (Nr. Of vehicles)		
Trolley bus system	Existing? Yes / no. / Number of lines / frequencies / total length in Km / passengers per month / fleet size (Nr. Of vehicles)		
Electrification rate of Public Bus system	% of vehicles of total fleet		
Subway system	Number of lines / frequencies / total length in Km / passengers per month / fleet size (Nr. Of vehicles)		
Tram system	Number of lines / frequencies / total length in Km / passengers per month / fleet size (Nr. Of vehicles)		
City train (or regional train in the city)	Number of lines / frequencies / total length in Km / passengers per month / fleet size (Nr. of vehicles)		
Public Transportation network density	Share in % of people living in a walkable distance to PT (bus 300m, Tram 500m, subway or city train 1000m)		
Bike Lanes	Total length in Km		
Bicycle parking stands in public space, number	Total number of bicycle parking stands		
Bicycle parking stands in public space, density	Total number of bicycle parking stands per 1000 inhabitants		
Public and private bike sharing operators	Numbers of providers with numbers of stations, bicycles, users		
Public and private bike sharing operators: Electrification rate	% of bicycles of total fleet		
Car ownerships rate	Cars per household / cars per 1000 inhabitants		
Public and private car sharing operators	Numbers of providers with numbers of stations, bicycles, users		
Public and private car sharing operators: Electrification rate	% of cars of total fleet		
Park and ride facilities	Number and capacity in number of parking spaces		
Integrated ticketing system for several modes existing?	Yes / no; number of modes integrated		
Multimodal information websites and (navigations) Apps existing?	Yes / no, numbers and names / description of features, functions, modes and area covered		
Intermodal stations existing (passenger transport)?	Yes / no; number of modes integrated		

Intermodal logistic centres existing?	Yes / no; number		
Intermodal freight distribution centers (e.g. lorry to bike) existing?	Yes / no; number		
Average modal split (including sharing systems)	Percentage		
Please add any other specific Indicator that you consider as relevant			

Do you have any other ideas on how you to describe or illustrate the situations concerning **multimodality** in your city and/or pilot area? Please share it with us in this box:

If you have already chosen your pilot institution for **Mobility Management** located in the pilot area, please describe it according to the following criteria. If you have more than one pilot institution, please copy this table and complete it for the additional institution/s as well.

General criteria describing institutions for mobility management	Unit
Type of institution	Company, kindergarten, school, other
Employees	Number
Pupils/children	Number
Location in city	Textual description
General criteria/Transport infrastructure around institutions to apply mobility management (radius around 1km)	Unit
Economy (f.i. Employees per sector / unemployment rate)	Number, percentages
Characteristics of the urban morphology (land use / density / physical structure / city centres)	Textual description
Public transport modes in close surroundings	Number

Number of bus lines	Number, frequency
Tram lines	Number, frequency
Trolleybus lines	Number, km
Bike Lanes	Number, km
Parking space (private/public)	Number
Bike stands (public/private)	Number
Please add any other specific Indicator that you consider as relevant	

If you did not finally choose your pilot institution for Mobility Management located in the pilot area yet, please describe the institutions you have already taken under consideration according to the following general criteria. If you have more than one pilot institution in mind, please copy this table and complete it for the additional institution/s as well.

General criteria describing institutions for mobility management	Unit
Type of institution	Company, kindergarten, school, other
Employees	Number
Pupils/children	Number
Location in city	Textual description

Do you have any other ideas on how you to describe or illustrate the situation concerning **mobility management** or concerning your pilot institution(s) in your cities? Please share it with us in this box:

**Thanks a lot for sharing your information with the partners in CMM!
Please keep in mind the deadline for sending the data gathered
within phase 1 to TUB: 6. April 2018**

9.2 CMM Preparatory Analysis Guideline - Phase 2

CMM

Preparatory Analysis

Guideline for assessing the status quo and framework conditions of multimodal transport and mobility management in selected city quarters

Phase 2:

Qualitative assessment – expert interviews with stakeholders

Introduction

The second phase of CMM Preparatory Analysis is tasked at gathering more detailed information addressing stakeholders and target groups affected by multimodality and mobility management. For this qualitative data collection experts can be consulted e.g. in interviews or groups (workshops). In places the information can be amended by desktop research and/or estimations. The results of this first qualitative assessment shall be summarized in a short report. Regarding mobility management activities, these interviews should help the Project Partners to choose a pilot institution (if not yet decided), identify challenges and problems regarding general aspects linked to mobility in the institutions, identify target groups for mobility management (e.g. parents, employees, pupils) and to define unmet needs. This applies to the development of measures aiming at improving multimodality in the cities in a similar way (mobility points). The interviews and consultations should build a basis of information to be able to design tailored and feasible measures.

Instructions.

- 6) Please read the document “Preparatory Analysis Guideline for assessing the status quo and framework conditions of multimodal transport and mobility management in selected city quarters” carefully before you start collecting the required data. It will give you information on the background and purpose of this task.
- 7) The questions regarding multimodality and mobility management listed below are to be regarded as minimally required information. Feel free to add additional questions you want to address in order to be able to describe the initial situation in your cities, pilot areas and pilot institutions in your short report. Furthermore, the way you address people is free to choose. You can find some recommendations from our side below (section ‘Some words on qualitative data gathering methods’).
- 8) You are free to decide whom you want to interview. We would suggest addressing at least one person from the pilot institution (e.g. director, facility or personal manager) and one civil servant (e.g. traffic or urban planner). If you already chose a pilot institution for mobility management, it is sufficient to contact the respective persons in this institution. If you have not yet chosen your pilot institution, you can address several institutions with these interviews and then decide, based on the result, which institution you plan to cooperate with for the development and implementation of a mobility management concept.

- 9) It might be useful to add additional information that is not resulting directly from the consultations with experts. Such can be pictures, graphs, personal remarks or observations that are describing the situations regarding multimodality or mobility management in your cities, pilot areas and pilot institutions. Please feel free to add them in your short reports.
- 10) All information that you will gather during this phase should be compiled in a **short report**. This report should consist of two parts, one to summarize the replies on the questions regarding multimodality, the other summarizing the replies describing mobility management issues.
- 11) Please make sure to describe the sources of your replies in an introductory paragraph. This should contain information on the experts you consulted (position, function, institution – names are not necessary), the location of the pilot institution within the city/pilot area (if applicable) as well as the method you used to acquire the information (interview / phone call / workshop /etc.). Also, it should contain a short paragraph about your conclusions from the information you received. In total the reports should not exceed 5 pages. Please don't spend too much time on layout or formulations, since we (TUB /Rostock) will summarize your reports anyway.

12) Please keep in mind the deadline for sending the short reports by the cities within phase 2 to TUB and Rostock is close: 4. May 2018

- 13) If you have any questions concerning specific details of data gathering in this phase, please contact:

Lisa Wiechmann Hanseatic City Group of activities Leader A3.1 Lisa.Wiechmann@rostock.de
of Rostock 'Preparatory Work'. WP3 Mobility Management

Michael Abraham Technische Group of activities Leader A2.1 m.abraham@tu-berlin.de
Universität 'Preparatory Work and Analysis'.
Berlin (TUB) WP3 'Multimodal City Quarters'

Phase 2: Qualitative assessment – expert interviews with stakeholders

Questions to be addressed regarding multimodality	Target group / Examples of experts that can be consulted
Which political programmes and strategies exist that address multimodality in the specific city quarters that are in focus of CMM?	Politicians, administrative staff, ...
Which are the three most recent activities in the city to increase multimodality in these city quarters? (experts)	Politicians, administrative staff, other mobility experts
Average Modal Split (including sharing systems): Which percentage of vehicle km or passenger km by each transport mode is used by the inhabitants of the cities over the year?	Public (information can be collected via desk top research or by consulting local mobility experts)
Existing studies on mobility types (of local population)? Shares of behaviourally homogeneous groups	Local mobility experts

In the past were there any events or incidents that made it difficult to support multimodality (barriers)?	Mobility experts / Politicians, administrational staff / Representatives of respective NGOs
In the past were there any events or occurrences that made it easier to support multimodality (drivers)?	

Questions to be addressed regarding mobility management (MM) in the pilot institutions and the area they are located	Target group / Examples of experts that can be consulted
Existence of MM plans, programs, strategies or measures in the area where pilot institutions and their specific goals.	Urban or traffic planners/ mobility experts/ administrational staff/ police
For which institution or in which area do you think the implementation of mobility management measures is needed and why?	
In the past were there any events or incidents that made it difficult to support mobility management (barriers)?	
In the past were there any events or occurrences that made it easier to support mobility management (drivers)?	
Which transportation modes are you using most frequently for your trip from your home to your work place?	School, kindergarten or business directors/ facility managers / personal managers
If applicable: How are the pupils or children usually traveling to your institution and back home?	
What do you estimate: Which transportation modes are your colleagues mostly using for their trips from your home to the work place?	
Do you, your colleagues, the children and their parents perceive the way from home to your institution as safe and secure?	
Do you, your colleagues, the children and their parents perceive the way from home to your institution as affordable? Or are the costs for it being perceived as too high?	
In terms of spatial accessibility, do you, your colleagues, the children and their parents perceive the way from home to your institution as well reachable?	
In your opinion, what are the main challenges in your institution regarding mobility?	
Are you and your colleagues familiar with the term mobility management? If yes...: - Would you regard sustainable mobility a topic of high priority in your institution? - How important is mobility management in your institution? - Does your institution already carry out mobility management activities? - If yes, which and which experiences did you make with carrying out these activities? - If not, do you plan to implement MM measures?	
Does the city/municipality support you in implementing facilities that are necessary for mobility management (bike racks / provision of e-bikes / park and ride facilities / pedestrian crossings /traffic lights /...)? - If yes, in which way and which facilities are being supported? - If not, in which way would you like them to support you?	
To which extend are you taking mobility issues (connection to street or public transportation grid) under consideration when you are planning new buildings, neighborhoods, etc.)	
Are you familiar with the term 'mobility management'? If yes did you include mobility management concepts in your investments in the past? For which reasons? Which experiences did you make and did it have a positive effect on the marketing success?	

Your future investment:	
Do you think the location of your future investment is well connected or reachable by all kinds of transportation mode (by public transportation /car / bike / walking /etc.)?	
Do you plan to provide facilities for sustainable mobility infrastructure or mobility services? If yes, which?	
Is reachability of your investment a part of your marketing strategy? Is reachability by sustainable transportation modes part of it as well?	
Does the city/municipality support you in implementing facilities for sustainable mobility infrastructure or mobility services? In which way? If not, in which way would you like them to support you?	
What are the main challenges (at the site) regarding mobility?	

Some words on qualitative data gathering methods:

Individual in-depth interview:

- This method will probably be the most frequently used one for the questions to be addressed within this phase of preparatory analysis.
- Compared to the mere completion of a simple questionnaire, they offer the possibility to acquire in-depth and reliable information.
- There are several forms in which you can conduct the interviews i.e. by a phone or Skype call or a personal meeting. It is however recommendable to arrange personal meetings. They offer the chance to actively steer the conversation, to stay focused and to clarify misunderstanding or irritations during the talk
- For the documentation of the interview it might be helpful to audio-record it (don't forget to ask the interviewee for admission). Another simple possibility is to take notes either through yourself or by someone accompanying you (preferred).
- Be aware that it takes some time to arrange dates and times for the interview meetings and for their preparations.
- For the preparation of the interviewee it is helpful to send him/her information material (CMM and on the task Preparatory Analysis) prior to the interview. Also the questions to be addressed could be sent.
- Make sure to distinguish between replies reflecting personal views or opinions and between objective and proven information.

Focus group or expert workshop

- This method offers the advantage to inquire in-depth information together with a group of experts. Questions can be discussed controversially in an interactive way with the participants. This can deliver new and valuable insights.
- The meeting should be well structured (Introduction on the project, topic, and questions to be addressed / Presentation of goals of the meeting and rules of the meeting / Summary of results).
- In the end of the workshop you should summarize the results together with the participants.

This ensures that your findings reflect a common view and helps you to document them.

- In the meeting you will probably get diverse replies to the questions. In order to facilitate the discussion, it might be helpful to write them down, stick them to a wall or board and to cluster them. Take photos of the notes – they can be used for documenting the results of the meeting.
- Keep I mind that compared to conducting interviews, this method requires much more time for preparation (drafting of agenda / organizing venue and room equipment / selecting, inviting participants and arranging a time for the meeting / briefing of participants / if desired: organizing catering /...)

**Thanks a lot for sharing your information with the partners in CMM!
Please keep in mind the deadline for sending the data gathered
within phase 2 to TUB and Rostock: 4. May 2018**

9.3 CMM Preparatory Analysis Guideline - Phase 3

CMM

Preparatory Analysis

Guideline for assessing the status quo and framework conditions of multimodal transport and mobility management in selected city quarters

Phase 3:

Qualitative assessment – surveys on travel behavior, problems, needs and challenges

Introduction

The third phase aims at gathering broader qualitative data from the people targeted by the measures that will be implemented in CMM. For this, specific surveys and interviews with the target groups or the general public will have to be conducted.

In brief, question to be addressed are:

- How can the travel behavior of the inhabitants be described?
- How can the travel behavior of the users (e.g. employees, pupils, and children) be described?
- Which problems, challenges and needs do the inhabitants of the cities and/or pilot areas perceive regarding multimodality?
- Which problems, challenges and needs exist where Mobility Management measures could come into practice and which are the different stakeholders and target groups to be involved in Mobility Management?
- Regarding Mobility Management, the aim within the CMM-project is to develop a Mobility Management concept on city level for the following target groups: kindergartens, schools, companies, inner-city investors or to adjust an existing Mobility Management concept on city level. In a second step and on the basis of this overall concept, specific institutions will be chosen as pilots for the implementation of Mobility Management measures. For these institutions an implementation plan/site-based mobility concept will be developed (GoA 3.2). Consequently, please keep in mind that the requested survey can be conducted on either city or (more likely) on pilot institution level, depending on the situation in the city and whether you already chose you pilot institution.

Instructions

Please make sure to prepare and conduct the surveys in time so that you will be able to meet the deadline for sending the data gathered by the cities within phase 3 to TUB and Rostock:

18. July 2018

Examples for questions addressing travel behavior, problems, needs and challenges regarding multimodality and mobility management (to be assessed with the surveys in phase 3 of the preparatory analysis). For several of the questions tips for applying them in the questionnaires were added. You will find additional guiding remarks below the following table.

Examples for questions to be addressed regarding multimodality in the pilot area	Possible target groups
<p>Awareness of sustainable mobility and multimodality: Are you familiar with the term sustainable transportation or mobility? If yes could you describe it in one short sentence how you would define it?</p>	<p>General public in pilot areas for multimodality (all people who can potentially be affected by the implementation of the measure you are planning in your pilot areas such as: inhabitants / shop owners / employees / commuters / etc.)</p>
<p>Usage of sustainable mobility modes: for your regular trips, which are the five modes of transportations that are you using most frequently? <i>Tip: Present a list of transportation modes of your city that the participants of the survey can select and mark with a cross (nominal scale).</i></p>	
<p>Perception of quality of existing multimodal services: Are you satisfied with the time keeping, cleanliness, and safety, frequency of the public transportation means that you are using and are they well connected to each other? <i>Tip: Add a five-point scale, where 1 means very good and 5 very dissatisfied for each indicator. Participants of the survey can mark the value representing their opinions (ordinal scale).</i></p>	
<p>Willingness of changing mobility behaviour towards more sustainable modes: Could you imagine to make use of public transportation or walking and cycling more frequently in future (instead of using the private car)? What would have to happen to make you use of more sustainable modes in future? Please share your suggestions with us.</p>	
<p>Perception of spatial accessibility: How easy to reach are multimodal services for the users? Please let us know on a five-point scale how easy it is for you to reach the next access point to public transportation. <i>Tip: In your formulation try to be as precise and easy-to-understand as possible. F.i. don't use the term 'Public Transportation' but name it concretely as it represent real conditions in your city (i.e. Bus Line, Tram, bike sharing station, ...) (ordinal scale).</i></p>	
<p>Perception of economic accessibility: How affordable are multimodal services for the users? Please let us know on a five-point scale how you perceive the pricing of the public transportation means in your city (ordinal scale).</p>	
<p>Combination of different transport modes per trip: How many transport modes are usually combined in every-day trips? Please let us also now which these transportation modes are (nominal scale).</p>	
<p>Trip information sources: Which information sources are usually using for planning your trips? Do they offer information on several transport modes? Which ones? <i>Tip: Here you might want to add a list with information sources that are available in your cities (specific web sites, route planners, apps, etc.).</i></p>	
<p>Perception of safety of a service by its users: How safe do you feel when you are riding the bus/tram/... / when you are walking/cycling/etc. in your city? Please indicate on a scale from 1-5 (1 = very safe ... 5= very unsafe). <i>Tip: You might want to ask this question for all public transportation modes of you pilot area and for walking and cycling separately (ordinal scale).</i></p>	
<p>Please add any other specific indicator/question that you consider as relevant</p>	

Examples for questions to be addressed regarding mobility management in the pilot institution	Possible target groups
<p>Travel modes used: What travel mode do you use usually when traveling to/from the school/kindergarten/university/company/.../?</p>	
<p>Distance to site: How long is your daily way to school/kindergarten/university/company/.../? <i>Tip: Provide categories of distances to choose from, e.g. 0-2km, 5-10km, >10km</i></p>	
<p>Perception of the quality of existing mobility services/traffic situation at or close to your institution (school/kindergarten/university/company/.../): Are you satisfied with the availability and quality (e.g. time keeping, cleanliness, safety, frequency) of the mobility services close to the institution, (e.g. close by public transportation modes, bike lanes and racks, parking spaces for bikes and cars / etc.).</p>	
<p>Perception of safety of a service by its users: How safe do you feel when you are riding the bus/tram/... / when you are walking/cycling/etc. in your city? Please indicate on a scale from 1-5 (1 = very safe ... 5= very unsafe). <i>Tip: You might want to ask this question for all public transportation modes of the area surrounding your pilot institution and for walking and cycling separately. (ordinal scale).</i></p>	
<p>Accessibility of the institution:</p> <p>Spatial: How do you perceive the accessibility of the school/kindergarten/university/company/.../ by public transport means from your home? Please let us know on a five-point scale how easy it is for you to reach the school/kindergarten/ university/company/.../ by public transportation modes (ordinal scale).</p> <p>Economic: How affordable are public transports for the users? Please let us know on a five-point scale how you perceive the pricing of the public transportation system in your city (ordinal scale).</p>	
<p>Willingness to change the daily travel behavior: Could you imagine to make use of public transportation or walking and cycling more frequently in future (instead of using the private car)? If no, why not (barriers)? What conditions would have to change and how (e.g additional mobility offers or services)? If yes, what is your motivation?</p>	
<p>Please add any other specific indicator/question that you consider as relevant</p>	

Some words on how to successfully carrying out the surveys

We are aware that you are familiar with carrying out survey. However please let us supply you with some hints that might be helpful for you:

- Keep in mind that the questions presented in this guideline are just examples. Since we don't know details on the planned interventions in the CMM cities yet, we cannot suggest more specific questions addressing i.e. special features of the conditions around mobility points or institutions for mobility management measures. This means you have to think carefully which **additional questions** you will address, how many you will ask in total, and who will be the target groups of your surveys.
- Please check if you have conducted **mobility surveys** with inhabitants or visitors of you pilot

areas or with people who are connected to your institution for mobility management recently. If they cover the questions you want to raise to build an information base for drafting your measures, and if this information is not older than 1 or 2 years you can use them for this assessment within CMM. This can help to avoid unnecessary efforts and save you a lot of time.

- When you are drafting your questionnaires, keep in mind that the more open questions you raise, the more time it will take for the participant of the survey to complete the questionnaire. In order to save time, it should be applied questions with **pre-defined answers**, wherever appropriate.
- Don't forget to ask a minimum of **personal data** of the respondents such as age group, gender, place of residence, etc. and make sure to add a privacy remark to the questionnaire informing that all data gathered will be treated anonymously. It is also recommendable to ask for physical condition (impairments) to be able to take measures targeting at improving accessibility.
- The questionnaire should include a short introduction on its **purpose** and frame conditions i.e. funded by the European Commission). Only this way people will understand why it can be beneficial for them to take part in the survey.
- The **number of people** you need to involve in the survey strongly depends on the size of the target groups or pilot area or institution you have in mind for designing your measures. Thus, an advice for a sample size cannot be given. However, please have in mind that the information you gather should give you a clear picture on the situation of multimodality and mobility management in your cities, pilot areas and pilot institutions. The number should be high enough to make you able to decide upon the appropriate actions in your cities. However, there is a (very rough) rule of thumb that at minimum 100 people are needed to make assumptions that are minimally acceptable (not yet representative). If you feel unsure about your sample sizes, please contact us!

➤ Examples of tools for **online surveys**:

Survey monkey: Free version: 10 questions, max. 100 respondents per survey, PRO version: 3 different options: 39€/month, 456€/year, 1188€/year

<https://ec.europa.eu/eusurvey/>:

Free of costs available in 23 official EU languages. It is the EU Commissions online survey management tool, developed within the EU ISA programme, which promotes interoperability solutions for European public administrations.

esurveyspro.com: 3 different options: 100€/year, 200€/year, 400€/year

QuestionPro.com: Free version: 10 questions, max. 100 respondents per survey; 2 paid options: 15€/month (or 149€/year), 99€/month (or 899€/year)

Maptionnaire.com: Map based surveys
Single Project Plan: 1 month: 500€, 2 months: 1000€, 3 months: 1350€, Full annual plan: starting at 5000€/year

Please check also the poster developed by UBC for the workshop on citizen participation in Turku. It contains helpful information on online participation tools.

APPS & WEBSITES

QUICK FACTS

- Large variety of apps and websites dedicated to citizen involvement
- Services include mapping, polls combined with opportunities to give over all feedback
- The collected data is generally analyzed by the service provider

<p>CITIZENLAB</p> <p>Digital platform for citizen engagement, data acquisition and analysis, custom made solutions</p>	<p>MAPTIONNAIRE</p> <p>Digital tool for mapping of opinions and raising questions on urban developments</p>	<p>FUTURE DIALOG</p> <p>Provides cities with a turn-key solution for involving members of the community</p>
<p>CHAOS ARCHITECTS</p> <p>Digital platform engaging citizens, enables the collection of crowd surfed data</p>	<p>STRENGTHS</p> <p>Interactive and effortless data acquisition+analysis, custom made solutions</p>	<p>NEEDS</p> <p>Expensive licenses, citizens are required to have compatible equipment to participate</p>

- **Further readings** on successfully carrying out surveys (in English):
http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_47-a.pdf
http://civitas.eu/sites/default/files/Evaluation_Matters.pdf
- We strongly recommend you to perform a **pre-test** of your surveys and to discuss your drafts of the questionnaires with us before you apply them. Even if they will be in your local languages, we could discuss their general structure and main content in bilateral phone or skype calls (or similar).

Outlook/Next steps:

Multimodality

After the data gathering will have been completed **TUB** will compile all parameter in an overview and cross evaluate the information. The collection of data for the different area categories (city, infrastructure) will for example allow to establish benchmarking values illustrating the density of available offers (e.g. car sharing vehicles/1,000 inh.). Also, best practices and criteria for transferring them to other cities will be identified.

For the **cities** the information resulting from all phases of preparatory analysis will be a basis for analysing the situations concerning multimodal travel behaviour in the cities. This analysis will result in overviews of the multimodal transport situation in the pilot areas as well as in new insights on barriers and needs for multimodal travel behaviour in these areas. This analysis will also enable the cities to design their measures (e.g. mobility points, IT solutions) according to the identified needs.

Furthermore, this assessment of the status quo of multimodal transport and mobility management in CMM partner cities and pilot areas will be the first step of SUMP cycle and will serve as a policy support of multimodal travel behaviour (c. GoA A2.1)

Mobility Management

The results from the interviews/questionnaires in phase 1+2 will be merged in a SWOT analysis. The SWOT will include:

- Problem analysis and user demand analysis, incl. definition of unmet needs
- Compilation of user demand profiles for different target groups
- Existing mobility management strategies

This SWOT analysis should allow PPs to identify problems and challenges in the cities regarding Mobility Management for different target groups.

The results of the SWOT analysis will be presented to the stakeholders in the context of a workshop organised by PP cities. On the basis of the SWOT analysis and the identified challenges Mobility Management concepts will be developed for each participating city, setting objectives and including measures for each target group – schools/kindergartens, companies/inner-city investors (GoA 3.2). In these concepts kindergartens/schools, companies/investors with high potential for being a pilot institution will be identified. For at least one of these institutions a detailed plan for the implementation of measures will be developed to match their specific demand and the traffic situation at their location (GoA 3.4 + GoA 3.5). One pilot measure should be implemented in one pilot institution within cities.m multimodal.

9.4 CMM Preparatory Analysis Guideline – SWOT analysis

SWOT Analysis for mobility management in pilot areas of the CMM cities

The SWOT Analysis is a widely used tool for assessing the status-quo of companies, projects, programs and many other issues. The abbreviation stands for „Strengths“, „Weaknesses“, „Opportunities“ and „Threats“.

The strengths and weaknesses refer to the current state of the issue being studied, while the opportunities and threats refer to the near future projections and expectations. For example, in terms of mobility management the strengths and weaknesses of an institution may be that the institution being studied has enough and talented staff (Strength) but currently a very low budget (Weakness) on the one hand and therefore has the capacity (opportunity) to engage in new projects unless the low financial status remains low (threat).

It may also be differentiated between the two groups, so that Strengths and Weaknesses refer to the characteristics *inherent* in the issue/project /programm etc. while the Opportunities and Threats refer to *external* factors that may positively or negatively affect in the near future. An adjustment to the previous example could in that case be, that the talented large pool of staff (strength) receive low salaries (weakness), but due to their talent could seek and acquire better external funding and partnerships (opportunity) unless the talented staff decides to relocate to other employment or even countries due to bad economic situations in the country (threats).

Using the following tabel, analyze your chosen mobility management institution in bullet points:

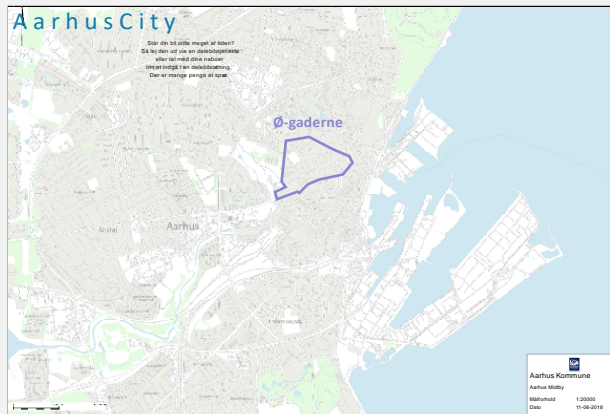
Strengths	Weaknesses
Opportunities	Threats



9.5 CMM Fact sheets

FACTSHEET – Aarhus, Denmark

City Facts



Pilot Area edged in blue

City of Aarhus		Pilot Area,	
Size city area	470 km ²	Size	20 km ²
Population size	325 000	Population	68 000
Unemployment rate	3,8% (Central Jutland)		
Average annual temp	7,8 °C		
Population growth	1,0%		

Similarities with other cities

- Second largest city area
- Average (third highest) number of PT modes
- Fourth largest population, 3rd smallest population density

City Level

Success Factors

Aarhus has the **highest bicycle usage in the modal split**

Reasons:

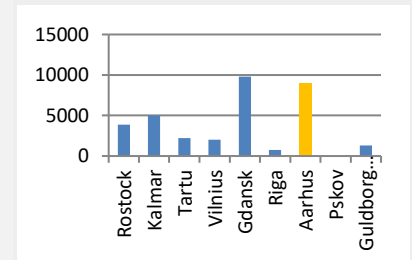
- Among the CMM cities, Aarhus has the second lowest car ownership rate. This corresponds to the higher use of more sustainable transport modes. Denmark is known for its long tradition of bicycle usage.

Aarhus has the **longest bike lanes (700 km)** and **second highest number of bike stands (9 000)** in public spaces among the CMM cities.

Reasons:

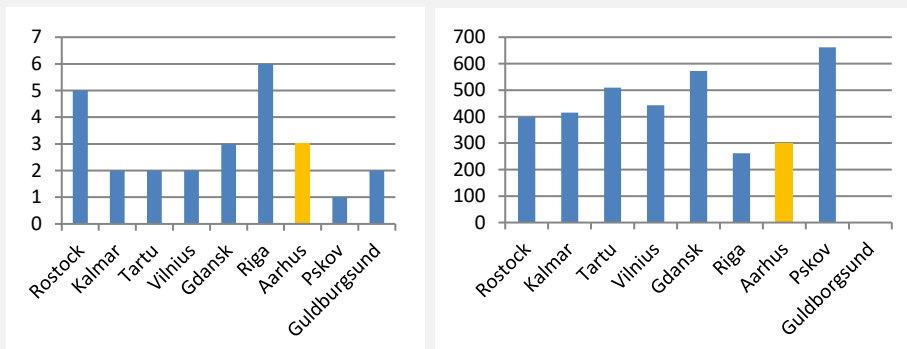
The high bicycle usage corresponds with the wide bike lane network. However, the results of interviews and surveys show that there still is a strong **demand for even more bike stands and bike infrastructure.**

Second highest number of bike stands

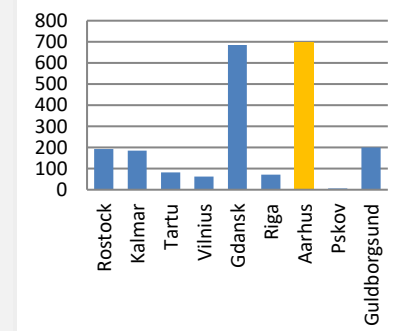


City level

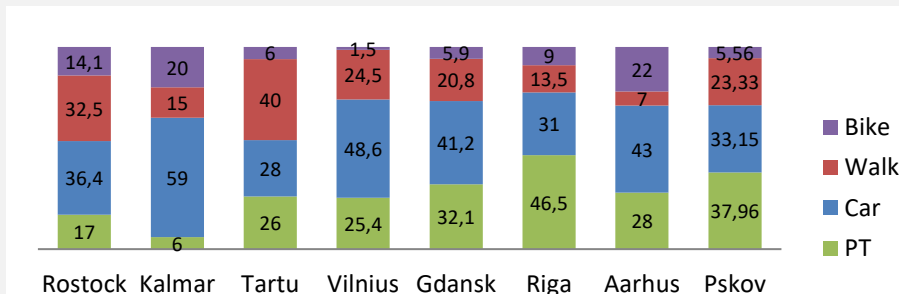
Low number of public transportation modes and car ownership rate



Longest bike lanes



High car usage in modal split



Challenges

The main mobility challenge of Aarhus can be described as follows: **too many cars take up too much space**, especially in the inner city

Mobility Management

Aarhus is a growing city. In 2030, it is estimated around 50 000 more people will live there. This represents a growth of more than 10 % and the existence of 30 000 more jobs. Consequences will be that approximately 20 000 more cars would be in the city if there are no changes to the mobility patterns. This is a challenge, since the road network at certain times of the day already currently suffers from congestion.

In the Municipal Development Strategy (2016), Smart Growth has high priority – meaning that the city is growing more dense in the future moving travel destinations closer to each other and making the public transport system more efficient. By following this strategy, the demand for transport should decrease. Furthermore, the smart choice of mobility is an important part of the Municipal Development Strategy, supported by infrastructure projects, such as the almost completed light rail and super commuter bike paths. In this project the focus has been put on investigations how existing road infrastructure can be used in a more efficient way. It does this in a participatory way by letting citizens address the challenges they are facing prohibiting them from being more flexible in their transportation. Also test persons are directly contacted that volunteer for various mobility solutions. The idea behind it is that smart mobility inspires these people and provides the necessary framework to make it possible for real behavioral changes in travel. Thus, it can be said that instead of implementing mobility management measures such as promoting mobility options via campaigns, the city of Aarhus pursues a unique and innovative approach to change the mobility behavior of the citizens to a more sustainable one.

City Level

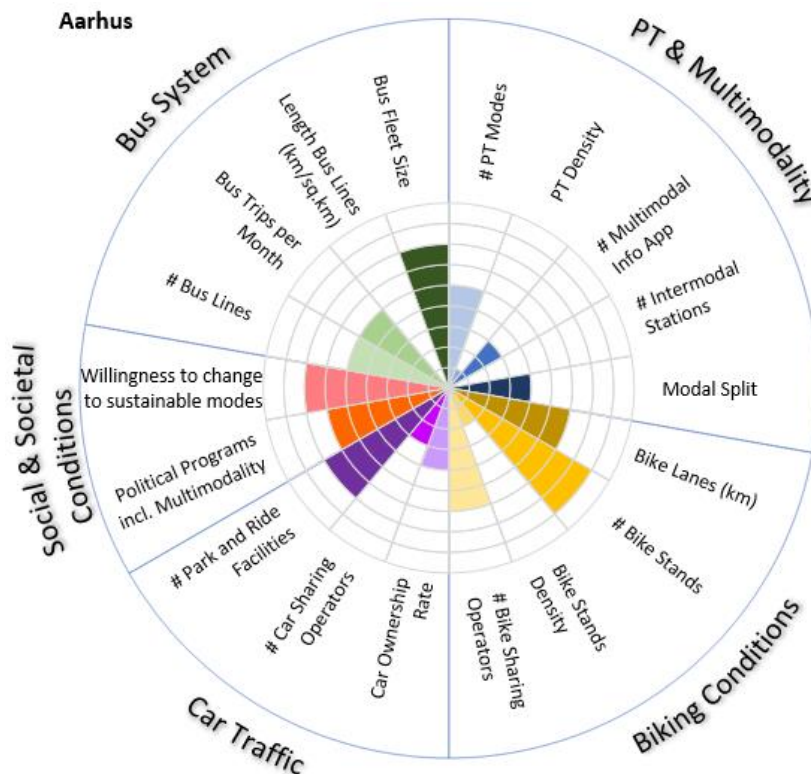
Additional Observations

www.visitaarhus.com: There is a **free bike sharing** service where a 20 kroner coin is inserted as insurance at the bike rack and is returned once the bike is given back.

In summer 2018, the famous Donkey-Republic bike sharing operator started operating in Aarhus. The provider, which originated in Copenhagen in 2015, now operates in more than 60 cities in Europe and the USA.

Aarhus is the **second fastest growing city** among the CMM cities.

Multimodality Indicators Ranking



Rank Multimodality = Conclusion = Category

Compared to the other CMM cities Aarhus performs at present good concerning multimodality conditions. It reached the status of a:

Start-Up City

Scale-Up City

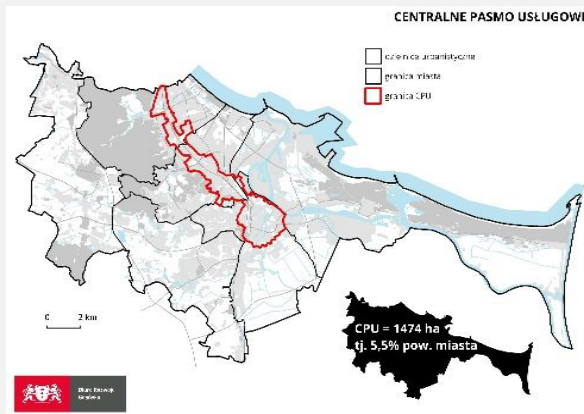
Lighthouse City

More quick facts on pilot area:

- The pilot area is located in the dense inner-city area of Aarhus.
- 49,3% of employment in the pilot area is in private limited companies

FACTSHEET – Gdansk, Poland

City Facts



Pilot Area consisting of Central Business District (CPU) bordered in red

City of Gdansk

Size city area	262 km ²
Population size	463 000
Unemployment rate (2016)	1,72 %
Average annual temp	9,3°C
Population growth	0.3 %

Pilot Area, Central Business District

Size	14,74 km ²
Population	57 150
Unemployment rate	0,31 %

Similarities with other cities

- Average (third highest) number of PT modes
- Third largest population, 3rd smallest city area, 3rd highest density

City Level

Success Factors

Gdansk has the **highest number of bus passengers** per month

Reasons:

- With 70 bus lines operating in Gdansk city, this is the second largest number among all CMM cities.
- With almost 819,4 km of bus network, this is the third longest bus network among all CMM cities
- **Important:** In Gdansk TRAM passengers are added to the number of bus passengers.

Gdansk has the **3rd largest PT modal share**

Reasons:

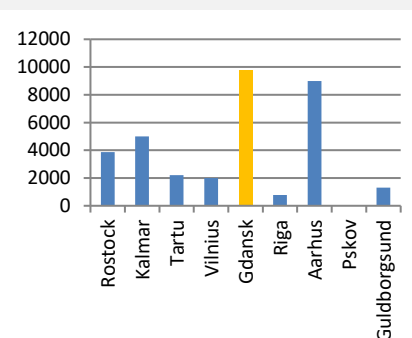
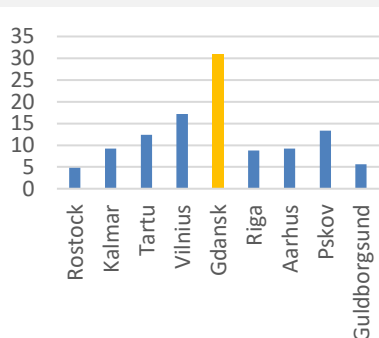
- Gdansk is the fourth most dense city (1767,18 inhabitants per km²) among the CMM cities - not far behind Pskov with 2195 inh./km². This may explain the efficiency of the PT network and this high modal share.

Gdansk has the **largest number of bike stands** in public space

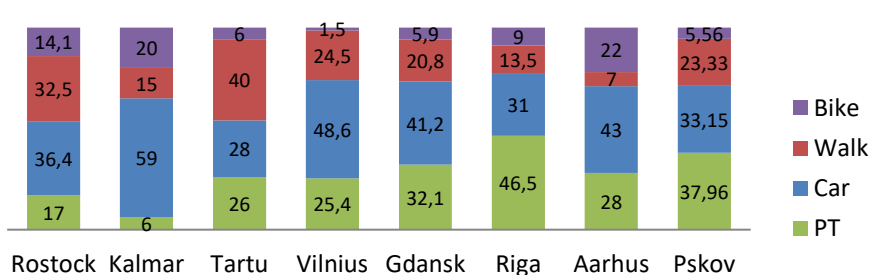
Reasons:

- The Gdansk '2030 Plus Development Strategy', the 'Operational Programme Mobility And Transport' and the Sustainable Urban Mobility Plan (SUMP) all exist in Gdansk. The Cycling May campaign resulted in improving standards of bike stands number per school/kindergarten (2743 stands). Also the 'Gdansk traffic studies' are being conducted every 7 years. Those may gradually have led to the increase of bicycle stands in the city.

City level Bus passengers per month and number of Bike Stands in Public Space



High car usage in modal split



Challenges

3rd lowest bike usage share in modal split:

Reasons:

- Even though Gdansk has the largest number of bike sharing operators, the largest number of public bike stands and the second longest bike lane network the share of cycling remains rather low. Reasons for this should be identified, and measures to promote cycling should be implemented.

Mobility Management

The city of Gdansk plans to implement the first public bike sharing system in autumn 2018. Starting November 2018 the Tricity Metropolitan Area is launching the biggest ever electric bike sharing system. It will comprise 660 stations and 4080 electric bikes – within Gdansk area 368 stations and 2226 bikes. For less than 3 Euro/month citizens will get 90 minutes of ride per day) On the other hand, paid parking zones for cars have been introduced. The two measures could together encourage more people to switch from private cars to bicycles.

The City plans to intensify the introduction of MM measures in order to encourage citizens to commute more often by bike and on foot. As Gdansk has been given the status of an accreditation center for Cycling Friendly Employers (CFE) it opens a lot of opportunities to influence the pilot area employers to promote cycling culture. The workshops, consultancies, audits and promotional campaigns will be delivered during the next two years. Moreover, Gdansk will work on real data and offline analytical and simulation programs in order to build the most efficient sustainable transport strategy and offer it both for the citizens as well as the local enterprises.

City Level

Additional Observations

- Ownership of bicycles (67,4 % of households have at least one bike) is higher than car ownership (67,2% of households have at least one car).
- The average time of a pedestrian journey is 17,5 min.
- The average number of persons travelling in a private car is 1,5 persons.
- The average journey time by car is 25 minutes.
- The average number of journeys made within 24 hours is 2,1.
- There are eight private bike rental operators and only 1 private car sharing operator, none of which are electrified.

- On the "upper terrace" part of the city (further away from the sea), inhabitants are more car dependent (48.2% of modal split) than those of the lower terrace by the sea.

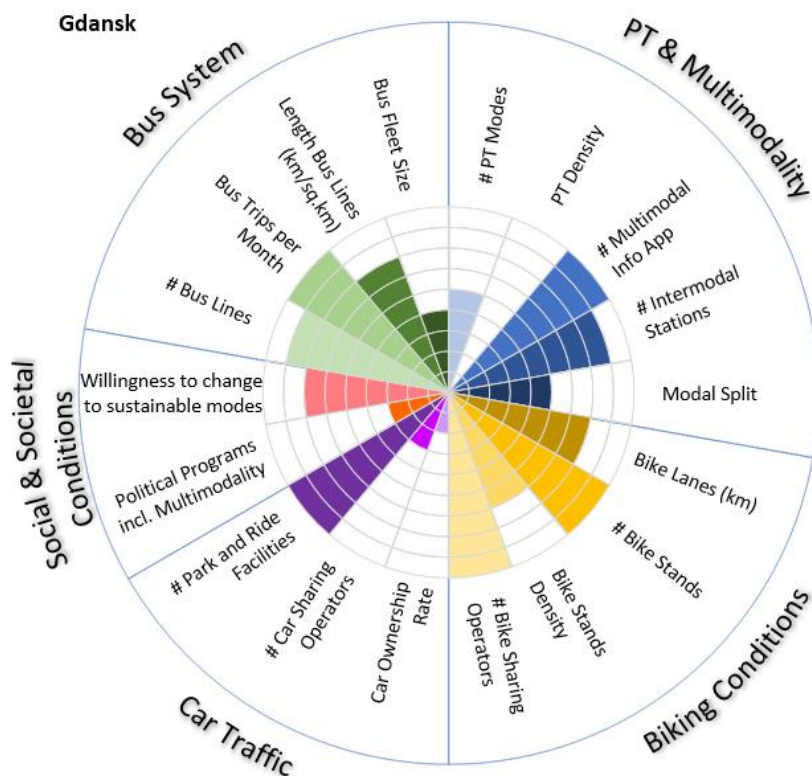
More quick facts on pilot area:

- The pilot area consists of the Central Business District and hence is of high economic importance. It also includes the 3 biggest city centers of metropolitan rank and transport modes: Śródmieście, Wrzeszcz, Oliwa and also the 3 biggest Universities and their campuses.
- The area includes 45% of the city's business area, 5,5% of the city's total area, over 60% of the big surface business centers and the highest density of the cultural, sport and higher education centers.
- 76% of all offices' surface is located within the pilot area
- The old city is also part of the pilot area.
- Among teachers surveyed in the pilot area, the modal split is 62% using their car, 25% using public transport, 6% using a bike and 7% walking.
- Seven modes of transport in the pilot area:

- Trains: SKM, PKM
- Tramways, Buses,
- Electric Bike sharing (starting from 18th November 18 – 2226 bikes in all Gdansk)
- Electric scooter sharing – Blinkee, Yumi, Ecoshare (300 Scooters in all Gdansk)
- Uber
- Car sharing - Traficar (500 – free floating cars)

Multimodality Indicators

Ranking



Rank Multimodality = Conclusion = Category

Compared to the other CMM cities Gdansk performs at present very good concerning multimodality conditions. It reached the status of a:

Start-Up City

Scale-Up City

Lighthouse City

FACTSHEET - Kalmar, SWEDEN

City Facts



Pilot area highlighted in light green

City of Kalmar

Size city area	19,6 km ²
Population size	38 000
Unemployment rate	7,1%
Average annual temp	8.5 °C
Population growth	1,5%

Pilot Area,

Size	0,28 km ²
Population	10 200

Similarities with other cities

- Together with Tartu; Vilnius and Guldborgsund there are two Public Transportation modes in Kalmar
- Has a campus of Linnéuniversitet which attracts companies and inhabitants to move to Kalmar

City Level

Success Factors

After the city of Aarhus, Kalmar has the **second highest share of bike users** among the CMM cities.

Reasons:

- There are not many public transportations modes that compete with bicycling.
- The city area is small. Thus, cycling distances are rather short.

Challenges

Kalmar is one of the **smallest** CMM cities, has the **highest share of car users**, and the **lowest share of PT users** and smallest number of PT passengers per month. This shows that the people in Kalmar use **private modes more than public** mobility modes.

Lowest share of PT users

Reasons:

- Public Transport alternatives are few. The pilot area is connected only by public bus.

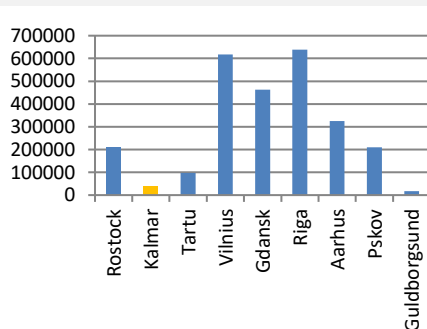
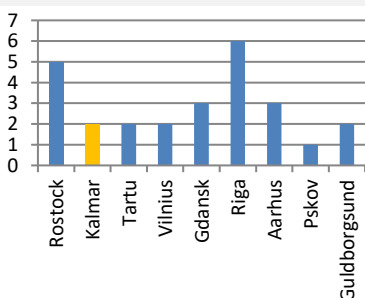
Highest share of car users

Reasons:

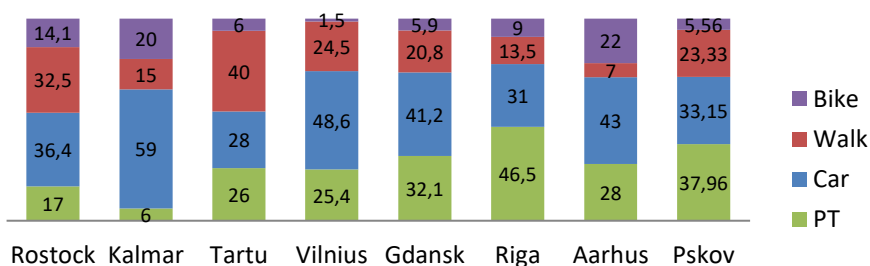
- Local expert interviews were resulting in the statement that there is a strong support, predominantly from influential citizens, in **favor of private cars** with unrestricted accessibility to the downtown area, with low or no parking fees. Up to today there have been **few political attempts to promote modal alternatives**. They are still considered as means to impede private car usage. Political argumentation should be addressing more long-term solutions leaning on an overarching mobility strategy, preferably applying **SUMP-methodology**. Thus, **Kalmar could achieve a substantial modal shift towards more sustainable transportation modes**. This political discussion has to include the respective municipal administrative staff, decision makers and NGO's.

- Despite a relatively high population density (3rd highest among CMM cities) – which is a good precondition for public transportation - private transport is preferred by citizens. Measures tasking at changing the peoples awareness on sustainability factors of mobility seem to be necessary.

City level Two public transportation modes and the second smallest population of the CMM cities



Highest Car usage but also high bike usage in modal split



Mobility Management

“A strategic mobility plan was developed in 2015 but never attained decision-makers approval. Currently there is an ongoing work aiming to achieve an over-arching Mobility Strategy for Kalmar. This work has been initiated by the Department of Planning and Development but is important for several other Departments as well. Not the least to get more kids and children to use preferred modal options to go to school and their afternoon activities. Here the challenge lies in the fact that there is a great barrier between perceived security and actual security on bike paths where the former is decreasing at the same time as the latter is increasing. So far it seems as if environmental arguments such as fossil fuel, air and noise pollution or congestion have little or no impact on modal shift or traffic behaviour. Therefore citizen involvement, communication program and identification of target group will be crucial for future MM campaigns.” (Phase 2 Expert interviews with stakeholders – feedback by Kalmar City)

City Level

Additional Observations

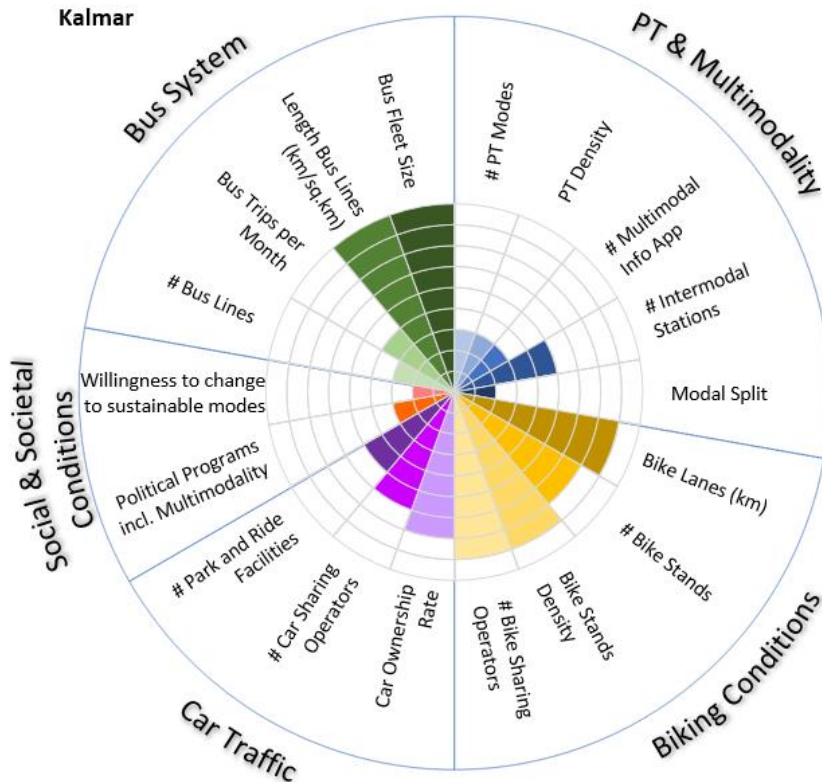
- Kalmar is **well covered with city development plans**. The “Fördjupad Översiktsplan (FÖP)” meaning “In-depth overview plan” covers the entire municipality, the pilot area is covered by two sub-FÖPs. However, neither sustainable mobility nor multimodality are directly addressed.

- Kalmar has **good financial preconditions** to foster sustainable development. National subsidies called “Stadsmiljöavtal” (Environmental City Agreement) 2016-2018 were granted. Their purpose is to foster sustainable urban environments. In Kalmar this was already used to realize a **study on bicycle infrastructure** and identify bottlenecks. Also, Kalmar carried out a **study on mobility issues related to the new university campus**. It is expected that traffic levels will increase.

- Additional ERDF funding was applied for to finance Mobility Management activities in Kalmar. It is planned to satisfy a public demand of a **secure, safe and central bike-garage**.

Multimodality Indicators

Ranking



More quick facts on pilot area

- Two modes of transport in pilot area:
Bus: 7 of total 18 lines in city
Train: 3 of total 3 lines in city

- 20 of total 185 km of bike lanes in the city exist in pilot area
- 1500 of total 5000 bike stands in city exist in pilot area, at much higher density 163 per 1000 inh. VS 74 per 1000 inh.

- Two of four bike sharing operators are providing approx. 70 bicycles in the pilot area.

- Higher bicycle electrification rate (3%) than city average (2%)

- Lower car ownership rate than city average (0.6 vs 0.9 cars per household)

Rank Multimodality = Conclusion = Category

Compared to the other CMM cities Kalmar performs at present good concerning multimodality conditions. It reached the status of a:

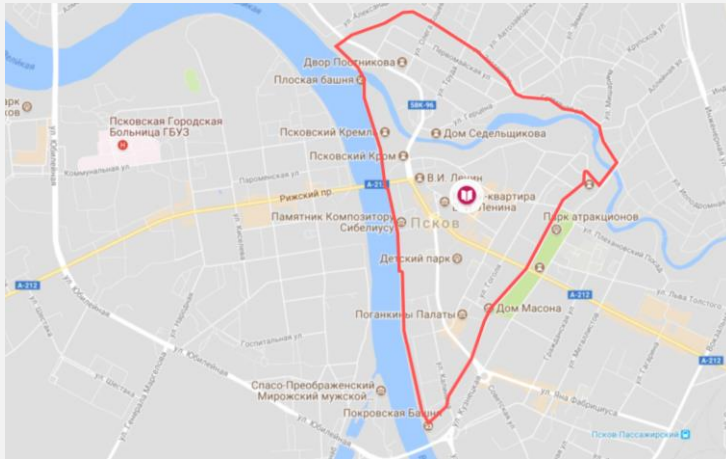
Start-Up City

Scale-Up City

Lighthouse City

FACTSHEET - PSKOV, RUSSIA

City Facts



Pilot area edged in red

City of Pskov

Size city area	95,6 km ²
Population	209 840
Unemployment rate	0,69 %
Average annual temp	5,9°C
Population growth	0,6 %

Pilot Area, Old City of Pskov

Size pilot area	4,92 km ²
Population	15 600

Comparisons with other cities

- Highest population density among CMM cities
- Smallest number of public transport modes

City Level

Success Factors

Pskov has the second **highest share of Public Transport (PT)** users in its modal split among all CMM cities. This information was created from the results of three surveys with 855 responses in total.

Reasons:

- Pskov is the smallest CMM city in terms of area (km²). It also has a more than average high population size, making it **the CMM city with the second highest density**. Even though the public transportation system of Pskov currently comprises buses as the means of transportation, it has the capacity to reach 37,96 % of the passenger trips already.
- During expert interviews that were carried out within the CMM tasks 'preparatory analysis' it turned out that the awareness that there is too much private car traffic in the city is already existing. Therefore people might choose PT instead of using the private car.

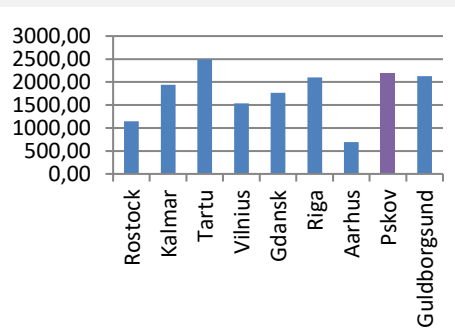
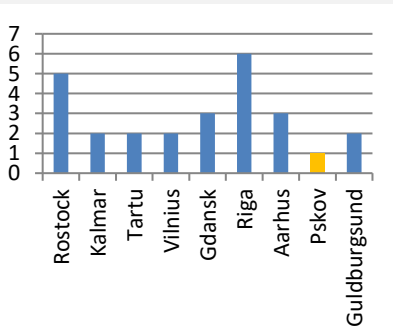
Challenges

Pskov has the **highest car ownership rate** among all CMM cities.

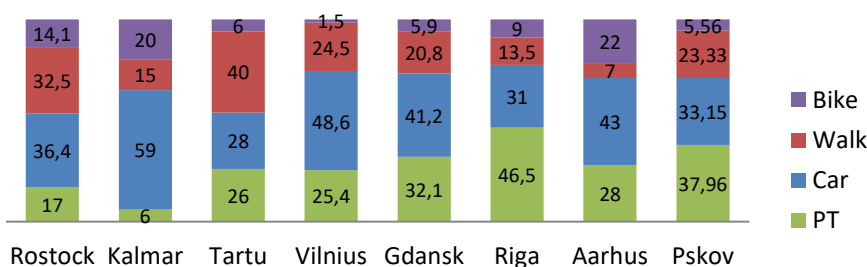
Reasons:

- Despite the high percentage of residents using PT, alternatives to private car use are few.
- Walkability in Pskov remains low and lots of improvements must be made to the pedestrian infrastructure. Even though some improvements of the cycling infrastructure were made, there is still a lot of room for improvement. Pskov has for example the shortest length of Bike lanes.

City level Smallest number of public transportation modes and second highest population density



Second highest public transport usage in modal split



Mobility Management

There are good pre-conditions for implementing mobility management in Pskov. City officials and certain groups of inhabitants expressed a strong interest in increasing sustainable transportation modes. A lot of activities and investments have been done to improve the cycling conditions. Also, educational institutions are very interested in reducing private car usage. However, there are factors limiting these efforts such as the perception of parts of the population that active transportation modes are belonging to low-income segments of the population, the perceptions that active modes can only be used during good weather conditions and that it is not very safe and that public transportation is not. Also the city budget is limited.

Despite, existing political and financial threads, Pskov sees a range of opportunities to implement mobility management in the **Pilot Area**:

1. Creation of a traffic management centre.
2. Creation of a Public Council for Development of Cycling on a participatory basis.
3. Carrying out activities in schools, encouraging the use of bicycles and public transport, informing about the skills of safe behavior on the road. Creation of map-schemes of cycling and pedestrian routes.
4. Increase coverage in the media and on the official websites of the Pskov questions concerning the development of cycling and active lifestyles, support for the Car Free Day event.
5. Limitation of the possibility of parking in the central part of the city by developing a system of paid parking.

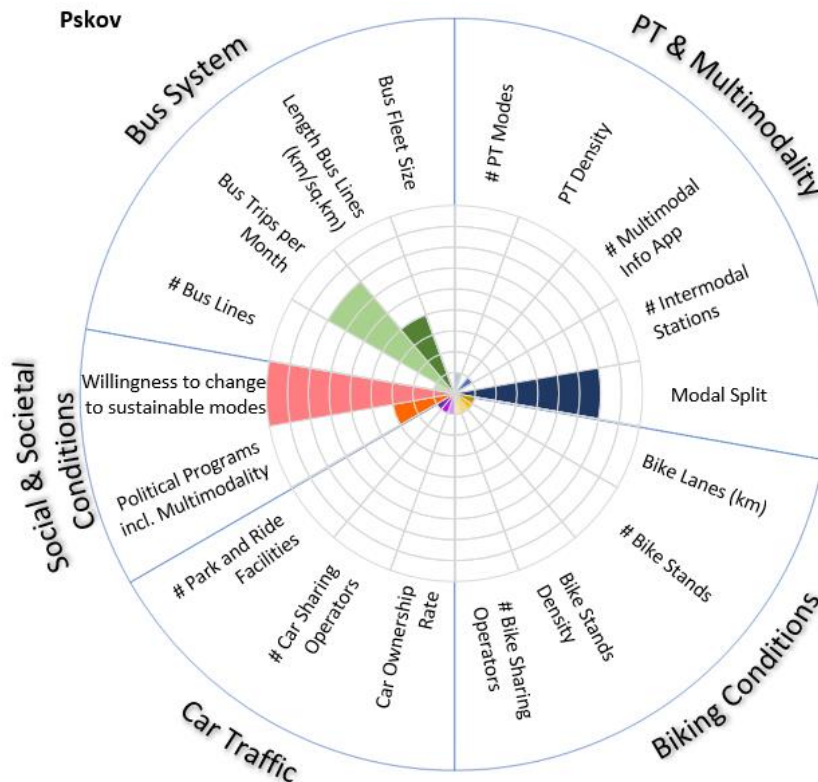
City Level

Additional Observations

- The question on the willingness to change to more sustainable mobility modes shows the local population's strong eagerness to change under certain conditions. Those mainly consist of needs for better infrastructure for pedestrians and cycling. The potential is hence very high, especially with such a high density and small area.
- The two major employers in Pskov are public administration (16,7 % of total employees in Pskov) and manufacturing industries (16,3%).
- Out of the total 95,6 km² area of Pskov, there is 14,4 km² residential areas and 10,02 km² production zones.

Multimodality Indicators

Ranking



Rank Multimodality = Conclusion = Category

Compared to the other CMM cities Pskov currently has a very high potential to improve multimodality and mobility management conditions. It has the status of a:

Start-Up City

Scale-Up City

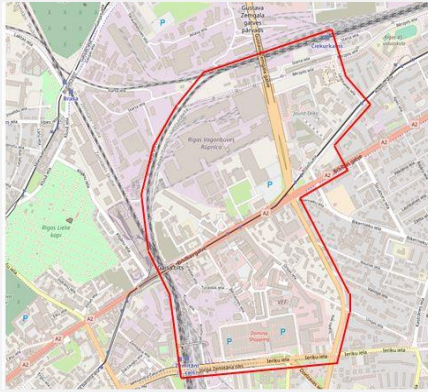
Lighthouse City

More quick facts on pilot area

- The pilot area is the historic city center.
- More Info to be added

FACTSHEET - RIGA, LATVIA

City Facts



City of Riga

Size city area	304.05 km ²
Population size	698.529
Unemployment rate	7.7%
Average annual temp	6.9 °C
Population growth	- 1-2%

Pilot Area, VEF neighbourhood

Size	1,34 km ²
Population	1,7k inh. + 15k visitors/day
Unemployment rate	n.a. (most users of the area are employees of the local ICT companies)

Similarities with other cities

- Together with Rostock Riga has the highest number of multimodal information websites
- Like Vilnius, Riga has a trolley bus system

City Level

Success Factors

Riga as a city of middle size in the ranking has the **highest number of public transportation modes** (first graph).

Reasons:

Rigas "Sustainable Development Strategy" strongly supports the public urban transport system. The strategy includes to effectively integrate the urban rail transport into the urban public transport system. Also further "Park and Ride" facilities will be built in order to strengthen public transport.

Average modal split: Riga stands at the first place with 46.5% **using public transportation** to get to work (second graph).

Reasons:

The city is predominantly monocentric, with some suburban micro districts in a 5 km radius from the core of the city center. 83% of all residential buildings in the city are within 300 m of a public transit stop. Population density in Riga is also the second highest among the studied cities, making public transport efficient and affordable.

Lowest car ownership rate: 262/1000

Reasons:

Public transportation improvement has been extensively pursued by the city administration.

Largest bus fleet size

Reasons:

City administration continuously upgraded their busses in order to replace the whole fleet with zero-emission busses until 2030.

Challenges

High traffic levels in the city center.

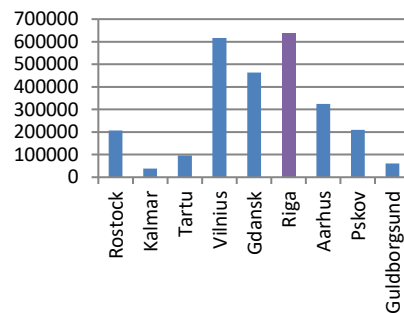
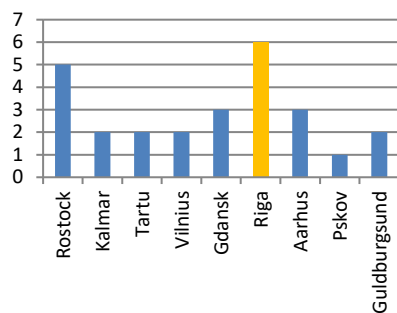
Long and stable traditions of the sectoral city planning and **difficult cross-sectorial collaboration** among city departments slow down new multimodal projects.

Especially in the pilot area: accelerated privatization of the state-owned properties in 1990's did not consider the **prospective infrastructure**. Now a lot has to be invested.

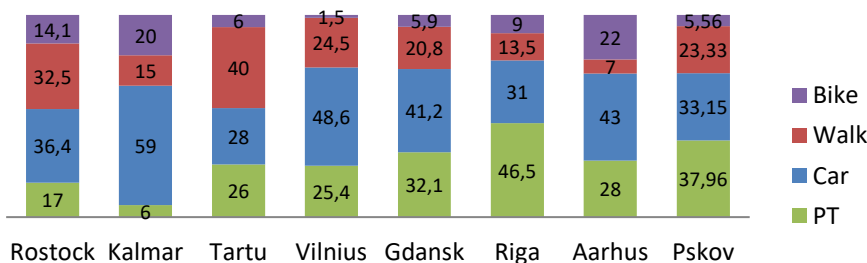
Rather **low awareness of the term "sustainable transportation"** among the respondents of a survey.

According to Phase 3 interviews, there is a rather low willingness to change to sustainable mobility modes unless they offer the same convenience as the private car.

City level Highest number of public transportation modes and population size



Highest public transport usage in modal split



Mobility Management

No specific plans, programs or strategies guiding the mobility management have been developed yet. This counts for the city as well as for the focus area and its institutions. However there is a discussion that mobility management must be viewed in context of the common city planning documents and sectorial development plans that will be elaborated by city departments and municipal companies in the future.

There are several different (state and municipal) institutions responsible for the mobility in the entire city territory – Traffic Department and City Development Department of the Riga City Council, municipal companies “Riga Public Transport” and “Riga Lights”, Traffic Control Centre, Latvian State Roads, various owners of engineering networks – each of them developing and implementing their own strategies. In result, currently the city and the Pilot Area lacks a common and mutually agreed vision for the mobility development and mobility management. In order to solve the mobility management issues in the city of Riga, it is seen as necessary to appoint one single institution that is responsible for the coordinating of all mobility-related activities in the city.

City Level

Additional Observations

Urban public transportation in Riga is mostly provided with electric power-driven vehicles (trams, trolleybuses, part of city public buses, train). By 2030 the city has programmed a **plan to replace all public bus fleet by sustainable vehicles** driven by electricity, hydrogen and other alternative low or zero-emission fuels.

Urban public transport priorities for Riga include **massive introduction of e-vehicles**. To foster use of hydrogen in public transport, a TEN-T project is now being implemented. It aims to equip trolleybuses with a hydrogen fuel cell driven electric engine.

A **net of hydrogen filling stations** is being set up in the city.

In Riga city the overall **availability of public transport stop is high**. Bus stops are provided within 300m distance from residential buildings in 83% of the city territory

Increasing public awareness on Mobility Management can be observed. But education within the field of mobility management cannot be obtained in Latvia so far.

In Riga, an estimated 9% use the bike for mobility. That is the second lowest rate among

More quick facts on pilot area

- In the 3rd phase interviews within the pilot area with 46 total responses, walking represented 30.4% of the modal split

- The pilot area is strategically located close to the city centre, it borders the Historic Centre of Riga (the UNESCO World Heritage site)

- It represents a priority development area for the city of Riga

- It is a multi-functional area with such dominating land uses as mixed city centre buildings (commercial, public and residential), industrial buildings and infrastructure buildings (technical and transport)

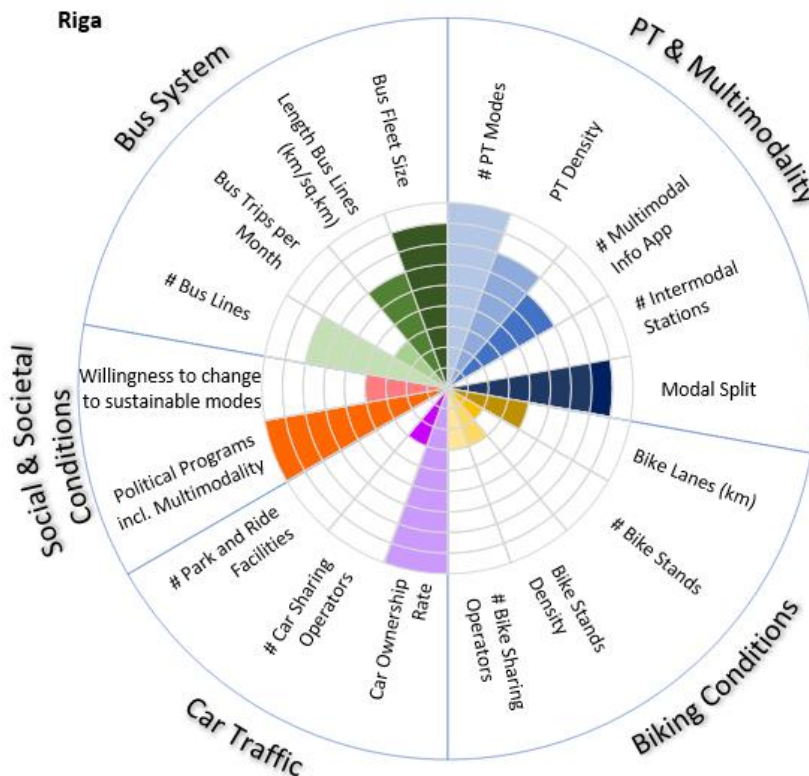
- Arterial transport infrastructure (principal streets, railroad, tram lines and bike lanes) are present within the pilot area

- A strong local community is self-established in the pilot area and motivated to take part in development of the neighbourhood

- Local businesses are willing to collaborate to develop the neighborhood by raising its overall urban qualities, such as liveability, comfort, attractiveness, etc.

Multimodality Indicators

Ranking



Rank Multimodality = Conclusion = Category

Compared to the other CMM cities Riga performs at present good concerning multimodality conditions. It reached the status of a:

Start-Up City

Scale-Up City

Lighthouse City

FACTSHEET - HANSEATIC CITY OF ROSTOCK, GERMANY

City Facts



Pilot area highlighted in the centre

Hanseatic City of Rostock (HRO)		Pilot Area, Kröpeliner-Tor-Vorstadt (KTV)	
Size	181.36 km ²	Size	15.34 km ²
Population size	207 492	Population size	19 397 in 2016
Unemployment rate	9.8%	Unemployment rate	4,2%
Average annual temp	10.1 °C		
Population growth	0.25%		

Similarities with other cities

- Together with Riga, Rostock has the highest number of multimodal information websites
- Almost same population size as Pskov (HRO 207k / Pskov 209k)

City Level

Success Factors

In terms of population size Rostock ranks at position four amongst the ten CMM cities. Nevertheless it has the **second highest number of public transportation modes** (1st graph).

Reasons:

- Ferries are included in public transportation network.
- High political support for public transportation

Good modal split: Rostock stands at the **second place with 32,5% walking** (2nd graph).

Reasons:

- second smallest city area
- Walking is mostly preferred in errands around the house in the same neighborhood. Hence mixed-use development may also be a key reason

Average modal split: Rostock stands at the **third place with 14.1% using the bike** for daily trips (2nd graph).

Reasons:

- 192,6 km paved bike lanes in 2016
- 3 861 bike stands in the city
- High population density compared to surface dedicated to settlement: 3,691.37 inh./km²
- Not very hilly
- nearly 50% of inhabitants judge the bicycle friendliness of city as 'good'

Low car ownership rate: 398,1/1 000

Reasons:

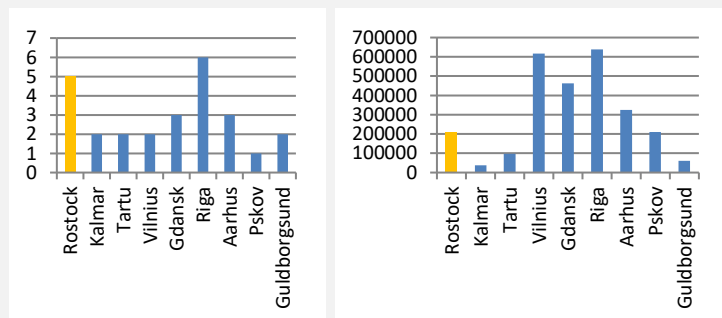
- 192.6 km paved bike lanes in 2016
- High density of PT network (more than 90% of households in pilot area can reach bus or tram stops within 400m)
- Three multimodal information websites and (navigation) Apps make usage of PT easy.

Highest number of public and private car sharing operators.

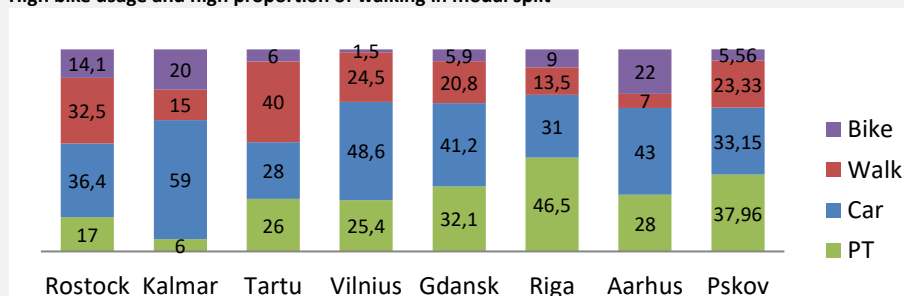
Reasons:

- There is a rather long tradition in German cities to promote public and private car sharing schemes. In Rostock, several private operators with a few cars exists since a few years
- the extension of car-sharing operators in the future is a key measure in the Mobility Plan Future (MOPZ, Mobilitätsplan Zukunft)

City level Number of public transportation modes and population size



High bike usage and high proportion of walking in modal split



Challenges

Rather **few specific programs** or strategies exist that are addressing multimodality. Average modal split: Even if walking (32,5%) and bike usage (36,4%) are high in modal split, **car usage remains rather high** (2nd graph). **No consistent definition of P+R.** Implementation of agreed measures in MOPZ takes too long.

Mobility Management

Mobility Management only recently became a topic in the Hanseatic City of Rostock. The City administration established in 2017 a staff unit Mobility Management with five employees on the basis of the Mobility Management Concept, a part of the 'Mobility Plan Future' (Rostock's SUMP). The concept defines how MM can be integrated into the city administration and details MM topics at municipal (mobility platform, information) and on company level (consultations, e-mobility). At city level, no strategic approach regarding MM for schools & kindergartens as well as for inner-city investors has been developed yet. The project will be the first attempt. The Pilot Area is characterized by a broad offer of mobility services, a good spatial accessibility and citizens likely to use eco-modes. But public space is very limited and not adapted to the needs of pedestrians and cyclists. Stationary traffic but also originating and terminating traffic are the biggest challenges and integrated concepts are needed to redistribute the public space equally. The newly planned housing area "Werftdreieck" in the Pilot Area is a good opportunity to develop a Mobility concept providing alternative mobility solutions to future residents. The topic of traffic safety is very relevant in the surroundings of local schools & kindergartens. This will be used as a trigger to start MM measures in several pilot institutions.

City Level

Additional Observations

The topic of **mobility management** just became an issue during the last 1-2 years within the municipal administration. The low interest for this topic of responsible persons made it difficult to support mobility management. This and the missing support on higher political levels is seen as the main barrier. Another threat may be the lacking acceptance among citizens, administration and politicians of using public parking spaces for promoting sharing operators.

Great potentials for implementing multimodality and **mobility management** measures in the planned new residential area by the local houth– the pilot area exists. 700 flats for 1 500 new inhabitants are planned in a dense but also green car free new quarter on former industrial wasteland.

Rostock is the only city in the ranking where **pedelecs are available in public bike sharing systems**.

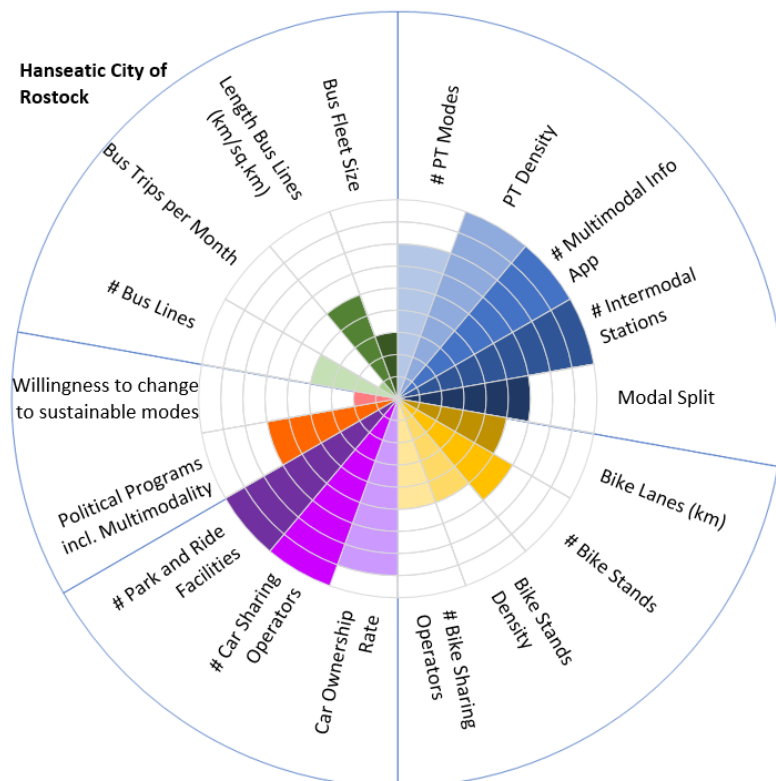
Five modes of Public Transportation (tram, city-bus, regional busses, ferries, city- trains) can be accessed with one ticket.

Even if Rostock is the second smallest city in the ranking (size of the city area) it has the third **highest number of tram lines**.

Electrification rate of two public and private bike sharing systems is 75% whereas the electrification rate of three private car sharing operators is 0%.

Multimodality Indicators

Ranking



Rank Multimodality = Conclusion = Category

Compared to the other CMM cities, the Hanseatic City of Rostock performs at present very good concerning multimodality conditions. It reached the status of a:

Start-Up City

Scale-Up City

Lighthouse City

More quick facts on pilot area

- Three modes of transport in pilot area
- Five out of total six tram lines pass through pilot area
- One station for city-train serving 3 lines in pilot area (Parkstraße).
- Several car-sharing operators provide cars in the pilot area

FACTSHEET - TARTU, ESTONIA

City Facts



Pilot Area edged in red, Pilot Institution marked by the star

City of Tartu

Size city area	39 km ²
Population size	97.000
Unemployment rate	3.4 % (2017)
Average annual temp	6.2 °C
Population growth	-0.25%

Pilot Area, Vaksali and central areas

Size	1.63 km ²
Population	est. 10.000

Similarities with other cities

- Together with Kalmar, Vilnius and Guldborgsund the second lowest number of PT modes
- Third smallest population size and -density after Kalmar. However, Tartu has the 5th largest city area, closely behind Vilnius.

City Level

Success Factors

Tartu has the **highest percentage of pedestrians** (second graph).

Reasons:

- Tartu has the smallest city area, and a **high population density**. Also, the round shape of the city and the fact that the furthest distance between the city border and the city center is no more than 4 km, makes walking a commonly used transportation mode. A large part of the population lives within 1,5km from the city center.

Tartu has the **lowest percentage of car users** (second graph).

Reasons:

- Even though Tartu has the third highest car ownership rate among the CMM cities, the data available (based on outdated surveys older than 7 years) shows it has the lowest percentage of people using the cars for their daily trips. One reason for it might be that there are many students in town who cover many trips by walking. Another reason may be that homes and workplaces are close to each other. However, currently, the percentage of car users is estimated much higher.

Challenges

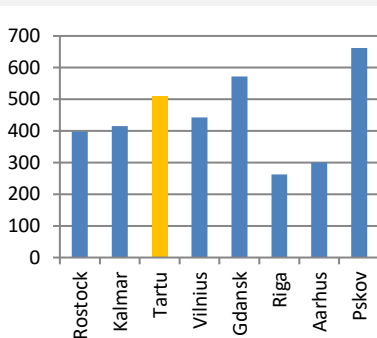
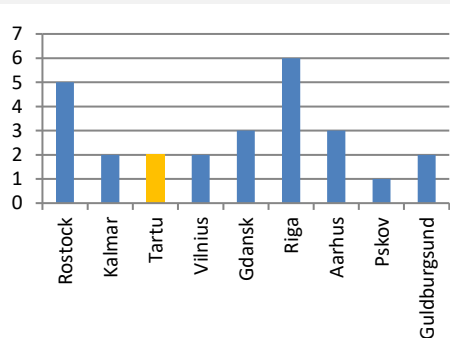
3rd highest car ownership rate: 510/1.000

Reason:

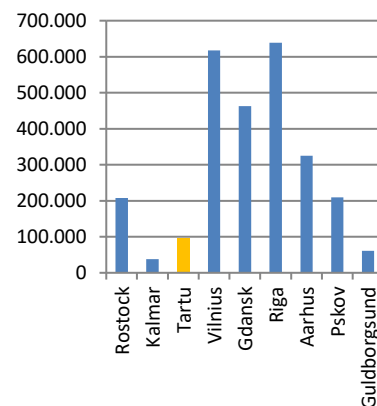
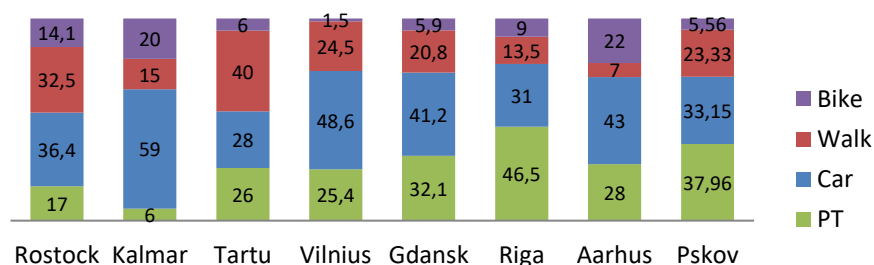
- Only one car sharing provider with only 3 stations.
- 3rd lowest unemployment rate. Hence, it can be assumed – especially with the low amount of actual car users – that the private cars are rather for entertainment / holiday travel reasons.
- Only two public transportation modes available that could substitute trips with the private car

Third smallest CMM city in population size:

City level Low number of public transportation modes and Car ownership rate



High bike usage in modal split



Mobility Management

In terms of a pedestrian- and cycling-friendly environment, one of Tartu's biggest advantages is its round, compact and mostly flat topography. The City Government is actively engaged in mobility management and is consistently investing in infrastructure. There have been large investments in cycling lanes. The streets are being narrowed to reduce car speed and give more room for cyclists and pedestrians. New busses and new bus timetable will arrive in June 2019. Estonia's first electric bike share scheme will be introduced in Spring 2019. On the other hand, citizen engagement in reducing car usage is irregular and mostly project based. Also, climate change awareness is rather low and the impacts of transportation on the environment is seen as less relevant. Urban sprawl is having a major effect on increase of private car use.

In the future, better coordination with surrounding municipalities to connect surrounding settlements with the city's public transportation and light traffic network can reveal its potential. Promotion of benefits of active transportation, dedicated bus lanes, restricted car usage in the city and raising parking prices in the city may be further opportunities. However, one potential future threat is that the perception of the private car as the quickest mode of transportation in the city remains dominant. Therefore, improvements in public transportation could reduce cycling and walking and not impact private car use. The lack of a strategy for citizen engagement is seen as another future threat.

City Level

Additional Observations

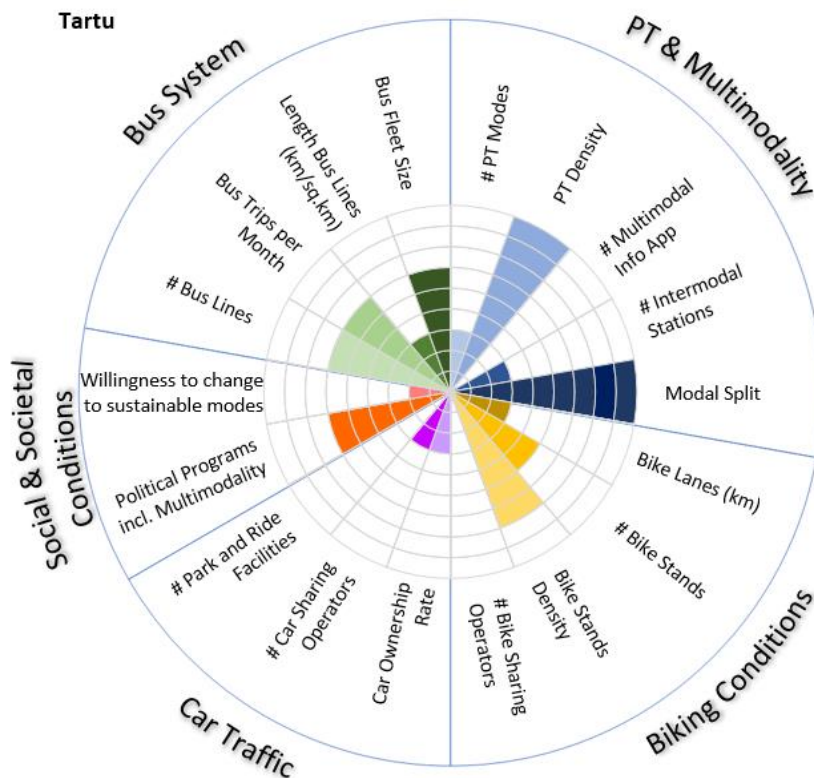
The city is proactively trying to **encourage car users to change their modes of transport to biking and busses**. There are projects to improve the already good bus networks to – however – be more direct routes instead of circular ones. Currently the busses' long lines and usage of small streets lead to inaccurate timetables, long routes and – even if that is not the case – illusions of longer travel times by bus than they actually take.

Bike lanes were added along the train tracks in 2017, creating a new cycling corridor to connect the city.

A bike sharing scheme will be opened in 2019. It will consist of 80 stations and 600 bikes (400 electric; 200 non-electric)

Multimodality Indicators

Ranking



More quick facts on pilot area:

- The **area** consists of the intercity bus station area, the historic city centre area, historic Toomemäe park and mixed residential area with apartment buildings, office buildings, mixed use buildings, university library and academic buildings, theaters, cinemas, schools, kindergartens and train station.

- The **train station** and intercity bus station are not situated side by side. They are about 1,5km away from each other. There are bus lines to connect them, but timetables are not synchronized. Since national train company is changing its schedule two times a year, it is difficult to have city's bus timetable and the train timetable coordinated. This problem has been solved in August 2018, when a new bus line was introduced which is independent from the other lines and possible to adjust its schedule to match the arrival times of the trains.

- **Inter city bus station** is located to the open market. This open market is regionally important institution attracting traders from Southern-Estonia.

- The pilot area consists officially of Vaksali area and central area. River side is much lower than southern side of the area. Many important streets have **steep ascends from the river** towards the south and train station.

Rank Multimodality = Conclusion = Category

Compared to the other CMM cities Tartu performs at present good concerning multimodality conditions. It reached the status of a:

Start-Up City

Scale-Up City

Lighthouse City

FACTSHEET – Vilnius, Lithuania

City Facts



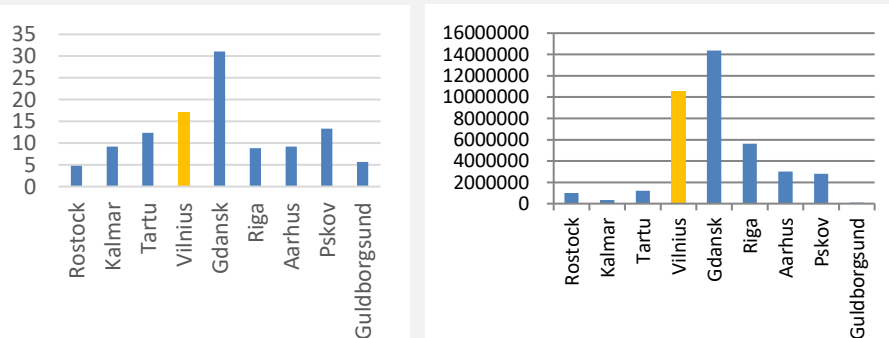
Pilot area showing 6 sub-areas

City of Vilnius		Pilot Area, Antakalnis district	
Size city area	401 km ²	Size	6,54 km ²
Population size	617 000	Population	14 400
Unemployment rate	4,8 % (2017)		
Average annual temp	6.1 °C		
Population growth	0.2%		

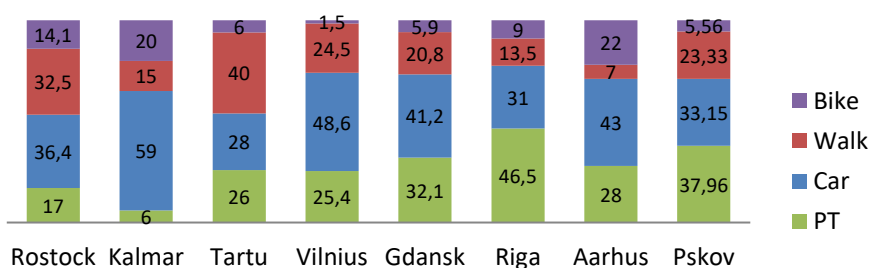
Similarities with other cities

- Together with Kalmar, Tartu and Guldborgsund the second lowest number of PT modes
- Third largest city area and second largest in terms of population size, its area closest to Tartu (390 km²) and its population size closest to Riga (639 000)

City level Second highest number of Bus trips per month per population and second largest population



High car usage in modal split



City Level

Success Factors

Vilnius has the **3rd largest proportion of walking** as a mode of transportation in the modal split

Reasons:

- Being a historic city, Vilnius has a historic city center in which traditionally there is much walking.

Highest length of bus system

Reasons:

- Vilnius also has the **highest number of bus lines (122!)**

Challenges

2nd highest car usage share in modal split:

Reasons:

- 2nd lowest number of PT modes
- Despite having a well-established bus network, ranking 3rd lowest in PT usage in the modal split makes it appear to be underutilized. The potential exists to encourage residents to use the bus instead of their own private cars.
- Usage of Car sharing represents only 0,3% of the modal split VS 48,3% private cars.
- Low ranking in bike infrastructure

Lowest bike usage:

Reasons:

- 2nd lowest length of bike lanes
- General low ranking in bike infrastructure and services, such as number and density of bike stands and number of bike sharing operators.

Third lowest Public Transport (PT) usage:

Reasons:

- Although Vilnius has the second largest number of bus trips per month, the modal share of PT usage is comparatively low. This may also be due to Vilnius being the second largest CMM city in terms of population.

- In Vilnius there are only few specific programs or strategies existing that are addressing multimodality of the public transportation system.

Mobility Management

Vilnius is not carrying out specific Mobility Management activities within CMM. However, Mobility Management is being practiced a lot in the Vilnius pilot area together with the residents of the planned multi-modal Mobility Point neighborhood.

City Level

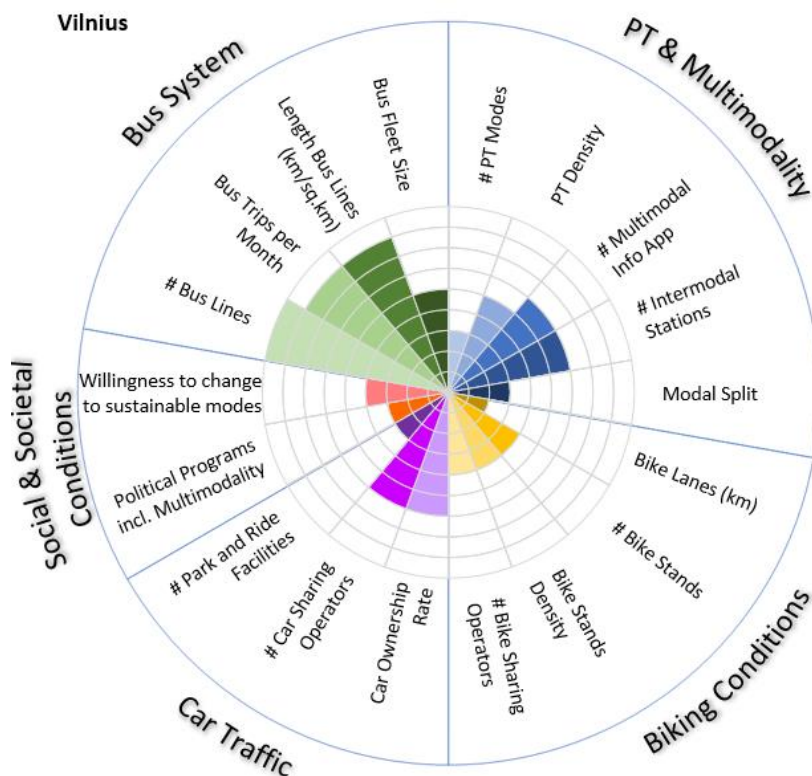
Additional Observations

Based on land use by purpose - city is divided into three zones – central, middle and peripheral.

- In the central zone we have old town, city center that is being developed and undeveloped city center.
- In the middle zone we have districts of dense residential areas, industrial districts, historical suburbs as well as wide range of services.
- In the peripheral zone we have centers – satellites, reserve territories for the urbanization and un-urbanized territories. There are large green areas inside the city as well (forests and parks).
- City structure is amorphous with tendency to follow the river bank.

Multimodality Indicators

Ranking



Rank Multimodality = Conclusion = Category

Compared to the other CMM cities Vilnius performs at present good concerning multimodality conditions. It reached the status of a:

Start-Up City

Scale-Up City

Lighthouse City

Extra info on pilot area:

- The area is in the middle zone, close to the city centre, a part of it is densely urbanised, the other part is determined by academic uses – the academic town is developing and growing.
- Pilot area mainly is in Antakalnis district. But all the analysis was done taking into account Vilnius transport districts (which are slightly different than the boundaries of Antakalnis district).
- 2 modes of transport in pilot area
 Bus: 8 of total 116 lines in city
 „Fast Bus“: 2 of total 6 lines in city
 Trolley Bus: 6 of total 18 lines in city

FACTSHEET – Guldborgsund, Denmark

City Facts



Pilot area and mobility point circled in light blue

City of Guldborgsund (Nykøbing Falster)

Size city area	8 km ²
Population size	17 000
Average annual temp	9,3 °C
Population growth	0%
Unemployment rate	4,8%

Pilot Area,

Size	0,1 km ²
Population	n.a. - education campus

Similarities with other cities

- Together with Kalmar, Tartu and Vilnius the second lowest number of PT modes

City Level

Success Factors

Guldborgsund has the **third longest bicycle lanes** among the CMM cities.

Reasons:

- Denmark has a long tradition of bicycle usage and its promotion through infrastructure provision.

Challenges

4th highest car ownership rate

Reasons:

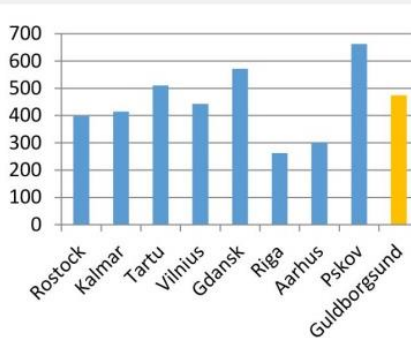
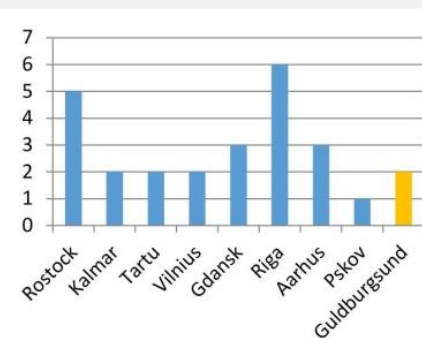
- No car sharing system makes owning a car the only way to use one, which becomes important especially when Public transport alternatives are few, as is the case in Guldborgsund.

No public car- or bike sharing system

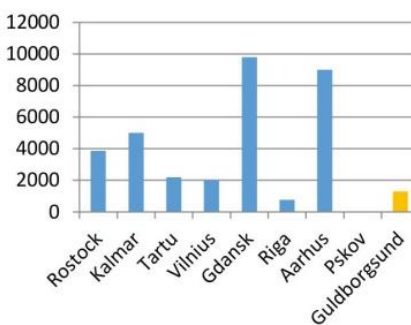
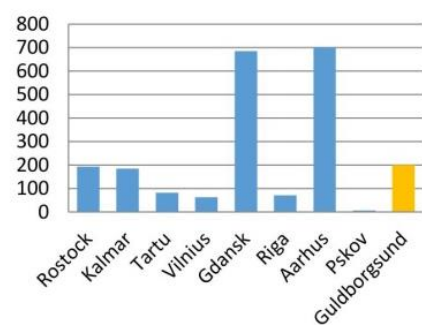
Reasons:

- The small number of residents may discourage investment in a sharing system.

City level Low number of public transportation modes and high car ownership rate



Long bicycle lanes/network but relatively low number of bike stands



Mobility Management

In the pilot area, one measure currently being considered is establishing bicycle storage points to encourage their usage instead of private cars.

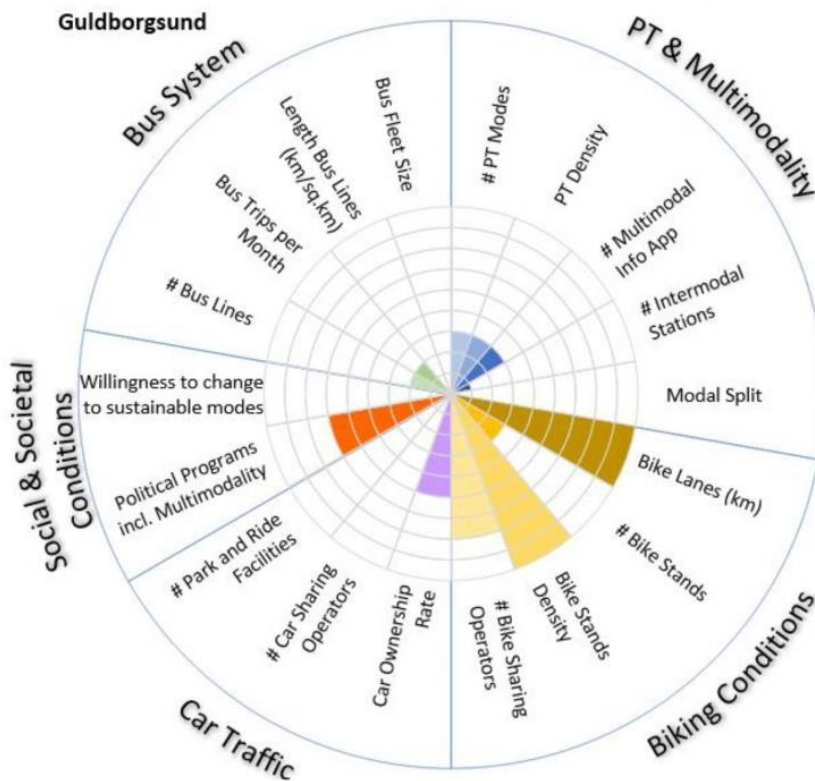
City Level

Additional Observations

- Guldborgsund (Nykøbing Falster) has the **second smallest population size** among the CMM cities.
- It is also the **second densest urban area** among the CMM cities

Multimodality Indicators

Ranking



Rank Multimodality = Conclusion = Category

Compared to the other CMM cities Rostock performs at present very good concerning multimodality conditions. It reached the status of a:

Start-Up City

Scale-Up City

Lighthouse City

This factsheet was compiled by TU Berlin within the framework of the preparatory analysis works undertaken in CMM. It is based on the information provided by the CMM partner cities.

More quick facts on pilot area:

- The pilot area for mobility points is delineated by three large roads, one along the harbour quay and one along the railroad tracks, which provide impermeable borders.
- At the train station square, a number of bus routes, regional roads and city streets meet here. It is the main traffic point. This situation provides regular traffic congestions and is a threat to traffic safety.

