



CREATING NEW EXCHANGES

INTERMODAL COMMUTING IN
BALTIC CITIES AND LESSONS FROM
APPLYING THE SUMBA-APPROACH

This publication describes the results and lessons of the Interreg Baltic Sea Region project SUMBA (2017-2021), Sustainable Urban Mobility and Commuting in Baltic Cities. Output 4.3.

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Background: The SUMBA Approach	3
Lesson theme: Guiding documents	5
<i>Creating the INTERMODALYZER</i>	5
<i>Creating guidelines on modelling</i>	6
<i>Creating Commuting Master Plan guidelines</i>	7
Lesson theme: Surveys, modelling and data gathering	8
<i>Retaining knowledge and expertise</i>	8
<i>Defining what questions the survey, study or transport model shall answer</i>	9
<i>Accounting for potential delays and higher costs</i>	9
<i>Planning for the long run</i>	10
Lesson theme: Participation and cooperation	11
<i>New cooperation leads to meaningful results</i>	11
<i>Involving stakeholders, especially politicians, early in the process</i>	12
<i>Adopting new and alternative tools that allow flexibility and increased outreach</i>	13
<i>Communicating the importance of prioritising sustainable mobility</i>	13
Lessons theme: International collaborations	14
<i>Common problems</i>	14
<i>Inspiration</i>	14
<i>Important role of organisations</i>	15
<i>Combining resources</i>	15
Commuting master plans at a glance	16
<i>Altona: Becoming a player in the mobility field</i>	17
<i>Olsztyn: Intermodal connections to alleviate traffic chaos</i>	20
<i>Riga: Mobility hubs in focus</i>	23
<i>New mobility thinking for Šiauliai</i>	26
<i>Tallinn: creating positive commuting trends</i>	29
<i>Tartu's "busy" scenario</i>	32
<i>Växjö: a cycling city and intermodal municipality</i>	35
<i>Intermodality in the Warsaw donut</i>	38
<i>Intermodality in the port city of Gdynia</i>	40
Looking forward: SUMBA+	42

BACKGROUND:

THE SUMBA APPROACH

In many large and mid-sized cities, cars are queueing up on arterial roads that lead to cities from the surrounding functional urban area (FUA). People rely on their car for commuting because it can seem to be the more attractive option or because there is no suitable, convenient and more sustainable alternative. This car dependence is driven in part by urban sprawl, high housing prices in cities, increasing suburbanisation, and when land-use and transport planning has limited consideration for sustainability. Large flows of car traffic have considerable negative consequences related to economy, environment, safety and health. They include ineffective land-use for parking and roads, vehicle noise and pollution, emissions of greenhouse gases, increasing sedentary lifestyle, and high traffic volumes hindering travel by foot or bicycle.

Changing car-based commuting to sustainable modes of transport must go together with the re-orientation of the transport system towards enabling convenient intermodal travel. Intermodal travel in the SUMBA context involves seamlessly combining different means of public transport, together and with other means in a single trip. This is supported by so-called mobility hubs and can include public transport such as bus, train, and tram as well as cycling, walking, vehicle- and ridesharing. By considering intermodality as a key element of sustainable commuting, cities and their surrounding FUAs will be able to create a more flexible transport system able to respond to changing mobility patterns in the future.

This report summarises the key tools developed in the three-year project Sustainable urban mobility and commuting in Baltic cities (SUMBA) used to tackle challenges related to commuting. The report describes experiences in putting these tools into practice by the partner organisations including cities, municipalities, NGOs and research institutions in the project consortium.

BACKGROUND: THE SUMBA APPROACH



Helping cities and their FUAs transition to a more sustainable and intermodal transport system by developing and applying the SUMBA-approach was the objective of the SUMBA project. The approach is grounded by the philosophy of addressing commuting in a systemic way following the sequence: analyse – reflect – respond and that is guided by data and participation. The SUMBA partner organisations followed this philosophy to develop several analytical and planning tools meant to support municipal planners, decision-makers and stakeholders in developing evidence-based solutions to tackle the issue of commuting. The end goal was to develop an approach that leads to creating a master plan for commuting and fills the gaps related to planning for sustainable mobility in FUAs. The tools included:

- Proposal for a commuting and intermodality-focussed SWOT analysis
- Guidelines for modelling and data gathering
- Collection of good practice examples related to intermodal commuting
- Index for measuring the readiness for intermodal commuting (INTERMODALYZER)
- Proposal on how to develop a commuting master plan (CMP)

In addition to these tools were the various participatory processes and dialog activities, including working groups, reference groups, workshops, public outreach and surveys. These were an important part of the project and help to anchor the SUMBA-approach as good practice in transport and mobility planning.

All partner organisations in the project made use of these tools and analysed their own situation, reflected on good practices compared to their situation in their regions, developed transport development scenarios and identified measures to address challenges related to commuting. This work was reflected in the publishing their own CMP; a total of nine plans were created in the project including two by associate partners. The diversity of partners in the consortium allowed for a fruitful exchange of ideas and contributed to the development of ambitious, but attainable goals in the individual CMPs. We are confident that the SUMBA project and its outcomes and outputs made an important contribution to the mobility transition in the Baltic Sea region.

The overall lessons of the project are categorised under four different themes: Guiding documents; Surveys, modelling and data gathering; Participation and cooperation; and International collaborations. In addition, an overview of each partner and associate partner's method for applying the SUMBA approach is included in the section Commuting master plans at a glance.



LESSON THEME:

GUIDING DOCUMENTS

Several guiding documents were prepared during the SUMBA project to assist cities in applying the SUMBA-approach. These documents were used by partner organisations, and other cities, during the SUMBA project. Lessons from preparing these documents are summarised in the following three topics.



Creating Commuting Master Plan guidelines

The SUMBA Commuting Master Plan (CMP) guidelines aim to support partner organisations in responding to the challenges related to commuting. The guidelines simplify the process involved with writing the CMP including: identifying the relevant data needs and carrying out necessary analyses that evaluate the current state of commuting in the city or region, identifying shortcomings of the transport system in terms of sustainability and accessibility of mobility services, and defining measures that improve conditions for sustainable mobility and intermodal transport. The guidelines also include a suggested template for the planning document that enables municipalities to follow the process comprehensively and systematically. The guidelines tackle various common issues related to administrative structures, quantitative analysis of the transport system, infrastructure, intermodality and the uptake of new mobility services. These issues are interlinked with the INTERMODALYZER for ease of assessment of implemented measures later in the process.

Writing the guidelines involved cooperation between mobility and data experts in the project, as well as city officials from the project partner organisations. As some of the project consortium's experts had experience working with the Sustainable Urban Mobility Plan (SUMP) framework, it helped them to create guidelines that could supplement existing practices and documents. It was difficult to anchor the CMPs as a stand-alone planning document approved by council, partly because of involvement of several administrative units and partly because of overlap with existing planning documents like SUMPs and Sustainable Energy and Climate Action Plans (SECAP). Partner organisations solved this by using the CMP as a supplementary document that supports for example SUMPs or SECAPs. And where responsibility of measures might lie beyond the city administration, the city instead takes on more of role of initiating discussions and lifting these issues with the relevant actors.

LESSON THEME: GUIDING DOCUMENTS

Creating guidelines on modelling

In order to support cities and municipalities in selecting data and evidence-based planning and measures, a guidance document on transport modelling and data collection was developed within the project. The document aims to increase knowledge of urban and transport planners, consultants and professionals in the field of transport. It intends to reduce the barriers to using transport models and assessment tools by providing information on methods and tools for analysing, assessing and modelling transport systems, together with methods and sources for obtaining the necessary data.

A multitude of software solutions exists that differ only slightly in their functionality. The cities see a lack of software solutions that focus on the bicycle as a means of transport as well as possibilities to map intermodal route chains. In the selection and use of software, national trends are noticeable such as frequent use of software products of PTV AG (Visum/Vissem) in the German-speaking countries where it is frequently taught at universities. This also highlights the importance of tool selection for the given context, given local experience and competencies.

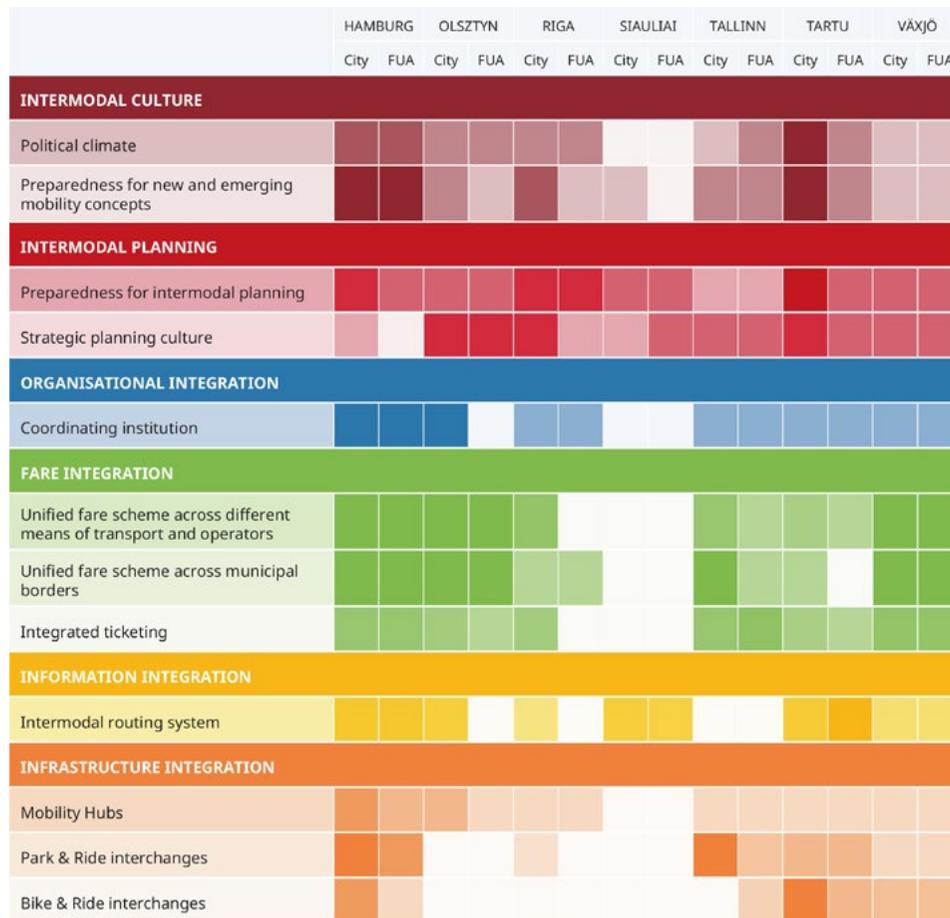


Combined transport and land use models are suitable for analysing the effects of transport measures on land use and the corresponding feedback effects. However, due to their complexity and the high degree of data requirements, they have so far been used more in academia and less in urban transport planning.

The use of open source solutions is increasingly becoming more common, espe-

cially regarding open data available by openstreetmap, for instance, and could offer lower-cost options for partner cities. New data sources, including national open data, and open source software products that go beyond this are not well known and can be considered under-used. The dissemination of information about such data sources and their subsequent usage should therefore be fostered.

LESSON THEME:
GUIDING DOCUMENTS



INTERMODALYZER heatmap that shows city scores for each indicator. The darker the colour, the better the cities are rated.

FOR FURTHER READING OF OUR GUIDING DOCUMENTS:



Creating the INTERMODALYZER

The implementation of an integrated and sustainable transport system and the acceptance of its users requires a range of pre-conditions. These include: political will to shape policy accordingly, planning competences, organisational integration across different mobility providers, fare and information integration, and the availability of interchanges. The assessment scheme, INTERMODALYZER, was developed with the aim of assessing cities according to such preconditions, showing the potential for improvement and creating awareness of these aspects among transport planners, stakeholders and citizens.

Challenges with formulating the requirements of the assessment scheme were overcome through several tests and iterations with the project partners. The scheme should be easy to apply without extensive data collection, and there should be the possibility of self-assessment by interested cities as well as applicability for all cities in the Baltic Sea region and beyond, regardless of their transport system. Based on an extensive literature review, input from external experts and knowledge from cities involved in the project, indicators in six thematic fields were identified and formulated. The cities and partner regions involved in the project were able to evaluate and compare themselves against other cities that participated. Experience showed that the assessment scheme together with the SWOT analysis helped to raise awareness of the topic of intermodality in the politics and administration of the cities and to create an understanding for the relevant aspects in this context. Furthermore, it became evident that there is still considerable potential for improvement, especially in the interaction between the cities and their hinterland and thus the commuters' catchment area.

Moreover, the feedback from the cities provided ideas for improvement for the further development of the INTERMODALYZER in the extension project, SUMBA+, including further differentiation of the indicators, more detailed guidance and recommendations for application, and a larger collection of participating cities.

LESSON THEME:

SURVEYS, MODELLING AND DATA GATHERING

A significant part of the SUMBA approach involves data-driven planning and decision-making. In order to gain a better understanding of their current status of commuting and the FUA's transport system, SUMBA partners did some form of data gathering and analysis including, for example, travel habit survey, commuting survey, traffic safety survey, traffic counting and traffic forecast modelling. The results of these activities assist with establishing current status and to set goals and define measures in respective CMP documents. The activities were not without challenges, however, and many partner organisations overcame the difficulties related to defining terms of reference for the first time, high costs that come with these activities, and impacts of COVID-19 on data gathering. Lessons learned during the project related to surveys, modelling and data gathering are summarised in the following four topics.



Retaining knowledge and expertise

It is important that cities retain sufficient knowledge and expertise related to transport system issues, including analysis and modelling, in order to lead projects efficiently with good and relevant results. The trend today, particularly in medium and small cities, is that this expertise is lacking or is moving from cities to consulting companies. This results in a high dependency on consultants for work related to analysis and modelling. In addition, there may be lacking ability to write terms of reference in order to procure such services. This is especially the case with transport modelling, where all cities in the project lack internal expertise or resources to build forecast models themselves.

When Växjö updated its transport model, originally built eight years prior, information regarding the build-up, scenarios and assumptions used were largely missing.

Employees at both the municipality and consulting company involved with the model no longer worked at their respective employer. When the model was revised in 2020 as part of the SUMBA project, an extra effort was placed on transparency and documentation of the methodology and purpose so that those looking to update the model again in a few years can do so better informed.

When forming the basis of activities and beginning to write terms of reference, cities should be familiar with local consultants and experts within the field and what their capabilities are. This, combined with well-defined terms of reference, increases the chance of receiving appropriate bids and helps avoid multiple procurement attempts. An additional piece of advice is that the contract defines the city as the owner of the model, giving the flexibility of using different consultants in the future or taking the model in-house.

Defining what questions the survey, study or transport model shall answer

The underlying questions that surveys, modelling and traffic studies intend to answer should be well-defined and understood, otherwise the results of this time-consuming work may not be useful. The preparation involves several steps and collaboration with stakeholders. For instance, Šiauliai conducted several internal meetings to define desired results of their traffic counting study. Then, discussions with researchers at the Vilnius Gediminas Technical University defined what was possible and impossible given existing technology, time frames and budget constraints. Final discussions established the underlying questions, recommendations for locations for traffic counting and subsequently defining the terms of reference. Thanks to this collaboration, the study gave Šiauliai a better understanding of their traffic situation as well as the influence of COVID-19 on commuting patterns.

An additional point of consideration is the traffic analysis zone (TAZ) used in the model. Often, it includes only the city or central urban area of the FUA but should commuting in the larger surrounding region be of interest (as it is in the SUMBA-ap-



proach), the area covered in the model could be expanded to the entire FUA. This has been the case in Växjö which plans to expand the geographical scope of its model from city to the entire municipality in the extension project, SUMBA+, in order to test locations of mobility hubs. Lacking data and low density of geographical divisions in rural areas however may reduce the accuracy of the model and give misleading results.

Accounting for potential delays and higher costs

Transport simulation and data collection are very expensive activities. Yearly licenses for traffic planning software such as EMME and VISUM can be difficult to justify; this, combined with lacking modelling experiences within cities, means this type of work is often done with help of consultants.

Dependence on the consultants means updates and running analysis with the model can be very costly and the flexibility of doing small analyses and testing simpler measures for quick answers is usually lost. In addition, advanced models can involve complicated terms of reference that require time for being developed.

Delays due complicated procurement processes within organisational structures can impact the start of large modelling and analysis activities. In Riga's case, the hierarchy of organisations involved with the procurement of services related to EU projects requires a significant amount of time and resources. Such authority structure or procurement supervision need to therefore be more flexible in order to avoid delays and impact the start and time plan of these activities.

SURVEYS, MODELLING AND DATA GATHERING

Depending on the questions to be answered, alternatives to advanced and detailed traffic models do exist. GIS-based platforms like ArcGIS include extensions for network analysis that are useful for simpler analyses of traffic flows and for performing accessibility studies. Benefits of using GIS platforms are their lower cost and their availability as cities often already own licences and have in-house experience with the software.

Planning for the long run

It can be common for a politically steered organisation to plan only for a four-year term or on a yearly basis when budgets are defined. This can limit resources available for data gathering and transport modelling. Long term planning is often lacking, and this can influence how the transport system is developed if the challenges related to urban and sub-urban sprawl are not fully understood.

“The biggest mistake or obstacle is that cities do not know how to estimate the amount of work involved in data management and modelling and do not consider the need to develop the necessary skills. There is no long-term view and no thinking on the sustainability of solutions.”

Tartu transport planners



One example is that many cities performed a travel habit survey for the first time with funding from the SUMBA project. These types of surveys should be repeated, every five years for example, to be able to track progress and evaluate measures. Internal budgets should therefore include provisions for these surveys instead of relying on external (project) funding which may be difficult to obtain. It is therefore important to involve department managers and politicians, across party lines, so there is a general agreement and understanding that this work is relevant over the long-term.

LESSON THEME:

PARTICIPATION AND COOPERATION

The importance of bringing different stakeholders to discussions about future transportation strategies was experienced throughout the project. This was especially the case in areas where stakeholders did not otherwise communicate, and new networks were established. The outcomes were meaningful and even practical – even in some cases leading to implemented measures before the end of the project such as in Olsztyn and Šiauliai.



New cooperation leads to meaningful results

In several partner cities, cross-border cooperation helped to create new partnerships, especially related to public transport planning and infrastructure.

In Hamburg's borough, Altona, workshop style meetings between the borough, the neighbouring county of Pinneberg and representatives from public transport operators took place. The SUMBA process provided the participating stakeholders room to discuss issues and new ideas openly. An example is the "Luruper Hauptstraße" major road section, involving a redesign to become a sustainable transport corridor, that is now a pilot project idea within the SUMP process and taken on by Hamburg's transport ministry.

A new cooperation between Šiauliai City and Šiauliai Regional Municipalities resulted in two new city bus routes being extended

PARTICIPATION AND COOPERATION

and a combined ticketing system for regional and city buses. The city's study on public transport stops made a strong impact as the regional transport council ordered considerations for multimodal transport network in studies, design and policy. While it was more difficult to involve all stakeholders in this process, the recognition of this topic at the policy level was a very positive outcome.

One of the main stakeholders involved in the case of Riga's CMP was the Ministry of Transport. As a result of the work done on mobility hubs in SUMBA and other projects such as cities.multimodal and BSR electric, the concept was adopted into national guidelines. Material includes recommendations for sustainable mobility improvement and intermodality and aspects to be considered when developing mobility hub infrastructure for the whole of Latvia.

In Tallinn stakeholders were involved intensively during the compilation of the main studies of the SUMBA project. Feedback and discussions from a wide variety of stakeholders helped to improve the light rail network feasibility study for light rail in Tallinn and Harju county, as well as function as a catalyst for new activities like Tallinn's analysis of public transport bottlenecks and a study on the potential of

Estonian national railways in Tallinn urban mobility. Close cooperation with the Ministry of Economic affairs and Communication during the SUMBA project contributed even to preparations of Estonian Transport and Mobility Master Plan.

The collaboration between bike shops and Växjö municipality during the bicycle library pilot helped to influence the sales side of the cycling market by making different types of bikes like cargo bikes and electric scooters more accessible to residents to test. Many of these bike types were not sold in stores in Växjö so the pilot had a long-standing effect as the bike shops began selling them as part of their regular inventory.

Involving stakeholders, especially politicians, early in the process

Early participation of different actors when creating planning documents helps to keep people informed and create ownership and contribution to the process and results. This is necessary for the success of implementing meaningful measures. One example could be the conversion of parking spots to mobility hubs in urban areas where the loss of parking might be seen negatively by car drivers and business owners. On the other hand, increased movement of people to and

from these hubs could help boost local businesses. Involving those business owners in the process from the beginning helps to find ways that the mobility hubs and businesses can be complementing.

Tartu managed to engage with politicians from the beginning, involving them in workgroups and workshops where members of city government provided political support early in the process. Especially useful is the support of the process and partial ownership by the city's mayor, adding importance and significance to the project.

The experience from the project is a reminder of how the views of a politically driven organisation can change. In the case of Tallinn and Harju, the early involvement of the city government and the responsible ministry did not necessarily lead to approval of the CMP document as a separate strategic document later in the process. This was due to ongoing parallel processes that include commuting aspects in the region and several new strategic documents in the city. The CMP is therefore considered to be a supplemental document of Tallinn's SUMP with greater focus on commuting. The process of writing the CMP, and the SUMBA project as a whole, provided important input

PARTICIPATION AND COOPERATION



to creating the National Mobility Council and the signing of a memorandum of cooperation between the city and state to develop mobility in the region as a whole.

Views of what is necessary for a society to function in terms of transport may not be shared across departmental boundaries. The tendency is often to accommodate forecasted increase of car traffic in new development areas rather than designing the area to better accommodate sustainable mobility. This is also true for conflicting priorities across administrative boundaries. National transport administrations might prioritise access and efficiencies for car and truck travel which can sacrifice safe conditions for pedestrians and cyclists – conditions that cities need to prioritise in order to make these modes attractive. As a result, Växjö, for example, maintains dialogue with the Swedish Transport Administration and conducts surveys to better understand the need for improving traffic safety in rural areas of the municipality. Similarly, as a borough with limited influence over cross-border commuting, Altona relies on good cooperation with the higher administrative bodies, such as Hamburg's transport ministry, to highlight the need for action to commit to solving the borough's commuting problems.

Adopting new and alternative tools that allow flexibility and increased outreach

The COVID-19 pandemic made it necessary for many partner organisations to transfer to digital and other means of engaging the public and for coordinating meetings with stakeholders. In several cases during the project, this resulted in missed target groups such as elderly residents who are not familiar or comfortable with digital communication.

To overcome this challenge, Riga reached out to elderly residents with help of representatives that facilitated video conferences with transport planners to help understand the needs and issues of elderly residents in the city's transport system. Växjö shifted in-person workshops on traffic safety to a digital version that was communicated through social media. Certain target groups like school children were missed as a result. Further surveys using digital mapping tools were therefore used to fill this gap by identifying important school routes and gathering suggestions for improvements to traffic safety according to school children.

Communicating the importance of prioritising sustainable mobility.

Similar to the previous point of encouraging early participation, early information and

communication is necessary to create a general understanding of the importance of prioritising sustainable mobility over the private car. Otherwise, focus is maintained on perceived negative impacts, for example shifting road space from cars to public transport, in the form of dedicated bus lanes or tram lines. Riga struggled with criticism via social media and acknowledged that it lacked resources to provide background information and address issues taken up on social media.

An important topic is handling the spread of misinformation, particularly via social media. Such issues become increasingly politicised and projects and measures can be delayed or cancelled because of heated debates and lack of full understanding of the purpose of such projects. It is good if, for example, communications personnel from municipalities are present or available in some of these discussions to help clarify issues when it is relevant. Växjö's planners and communications personnel are sometimes present in open social media discussion forums to be able to address issues and clarify information when needed.

LESSON THEME:

INTERNATIONAL COLLABORATIONS

International cooperation in EU projects such as SUMBA result in several advantages by bringing a diverse network of people with different perspectives to tackle challenges that are both unique and completely different, but often related. These are summarized in the following four topics.



Common problems: Awareness of common problems in different countries and different contexts was a reoccurring theme in the project, problems are often not unique and sometimes solutions have already been found in other areas. In general, several planners got the feeling that they are not alone - especially the cases in cities like Tallinn, Tartu, Šiauliai and Riga that struggle with the sharp increase of car use following the collapse of the Soviet Union and difficulties attracting people back to public transport. But of course, the dominance of car-central planning is not limited to eastern European countries but rather common in nearly all western cities since the 1950s.

Inspiration:

Seeing and hearing the experiences of cities in the project formed the basis for many initiatives in other cities. When acknowledging that we face similar problems, for example, related to car-dominated planning, it is inspirational to see results from when cities like Tartu, Hamburg (Altona),

Paris, Gent, Linköping close off their streets to cars and prioritise sustainable mobility instead. Good results in practice, especially in similar cultural and climate contexts help to inspire planners and politicians. Good results from bicycle libraries in Nordic countries like Växjö and Copenhagen lead cities like Tartu and Hamburg (Altona) to do similar. Each partner city (with exception of Tartu due to COVID-19) hosted a partner meeting during the project that included a guided tour, often by bike or public transport. This helped participants to see and experience mobility in different contexts, both the good and the bad, inspiring creativity and exchange of new ideas. Inspiration and the flow of new ideas are reflected in measures included in the CMPs of the partner organisations.

Important role of organisations:

The SUMBA project included five partner organisations including Earth and People Foundation, Baltic Environmental Forum (BEF) in Estonia, Latvia and Germany and the Institute of Transport Research at the German Aerospace Center (DLR). These organisations were necessary to fill the knowledge and expertise gaps of the partner cities, when working through the



SUMBA approach. DLR assisted with its expertise in activities related to data gathering and modelling, the development of the INTERMODALYZER and generally, establishing an understanding of intermodality and the current commuting situation in each partner city. BEF and Earth and People Foundation assisted partner cities with writing their CMPs and undertaking participatory activities and engagement with stakeholders and residents in their respective areas.

Combining resources:

Interproject cooperation was common in the SUMBA project and Riga was one of the best examples of this, including joint activities together with other projects (e.g. NSB CoRe, cities.multimodal, BSR Electric, Baltic LOOP) including combining local stakeholder engagement and hosting an international conference. In Växjö, the SUMBA project combined resources with South Baltic project CoBiUM to create Växjö's bicycle library with an even more extensive selection of bicycles and the ability to communicate the pilot as good practice across different platforms.

COMMUTING MASTER PLANS AT A GLANCE

A master plan for commuting (CMP) was prepared for each of the seven partner cities or municipalities including Altona, Olsztyn, Riga, Šiauliai, Tallinn, Tartu and Växjö, as well as associate partners Gdynia and the cities surrounding Warsaw, referred to as the Warsaw donut. The following section includes a summary of the local commuting situation and how the SUMBA-approach was applied in that context. Tips from respective planners and experiences of stakeholders in the SUMBA-approach are also shared.

Click on the city to jump to the respective chapter.



BECOMING A PLAYER IN THE MOBILITY FIELD

ALTONA HAMBURG / GERMANY

Altona is Hamburg's westmost borough, with a population of over 270 000 people. The borough is situated in a commuting corridor where commuters travel from neighbouring regions and counties like Pinneberg to Altona and other parts of Hamburg. A national highway and three major traffic arteries leading into central Hamburg pass through Altona. The borough is therefore faced with significant through-traffic that takes a toll on neighbourhoods where high population density and lack of additional street space means that cars fill up narrow streets and create a hostile environment for those travelling by foot or bicycle. With distances often exceeding 20 km, the commute is longer than what's an acceptable cycling distance for all but the most determined commuters, and there is heavy demand for travel by car and public transport. Highways and public transport services are maxed out during rush-hour periods.



Before and after pilot:
Ottensen macht Platz.

Applying the SUMBA-approach

Altona as a borough has minimal influence over major arterial roads and rail transport which are most important for commuters. Strategic traffic planning for the city does not occur at the borough-level but rather at the city state level. Applying the SUMBA-approach was therefore a challenge, including writing a CMP for the borough alone. The FUA was therefore defined as the commuting corridor between and including Pinneberg and Altona. Working with stakeholders to create the CMP document was an important process for Altona and included workshops involving SWOT-analysis of the transport system, future trends and development of measures. In addition, a commuter survey showed how strongly the choice of car over public transport is affected by the proximity and accessibility to services. Commuters living close to the railway corridors mainly rely on public transport, while those living between the railway corridors mainly use their own car for commuting. Cycling highways could fill a gap here, and work as connectors for the railway system in the areas of Pinneberg lacking high frequency transport options.

Altona's strategy in its CMP is guided by Hamburg's, five goals related to transport:

- 55% CO₂ reduction until 2030 (transport sector: -1,390t CO₂, for all of Hamburg)
- 95% CO₂ reduction until 2050 (net climate neutrality)
- Increase of public transport modal share from 22% in 2018 to 30% by 2030
- Increase of cycling in modal share from 15% in 2018 to 25% or 30% in 2020s
- Increase the percentage of commuters using environmentally friendly modes of transportation (public transport, bicycle, intermodal use including non-motorized transport).

Altona's CMP will be anchored in Altona's Climate Mobility Plan, which is to be adopted by the district assembly of Altona and finalized shortly after the end of SUMBA. It includes measures related to major arterial roads and public transport infrastructure, but these are limited to suggestions, as the planning authority lies with the city ministry. Measures focus on allocating space for sustainable mobility, and often aim at improving the situation at the destination of commuters:

- Transform a major road linking the municipality of Schenefeld in Pinneberg to Altona into a mobility corridor, prioritizing buses and active transport by reallocating space to these transport modes, thus also improving quality of life along the road.
- Make the "Ottensen macht Platz" pilot project, that bans most car traffic from a central mixed-use area in Altona the area, a permanent measure, including re-design of the streets.
- Develop an integrated concept to systematically keep through-traffic out of residential neighbourhoods
- Promote mobility management e.g. in companies and schools





Tips from Altona's planners:

A major challenge is to align the process time for projects that are thematically interlinked. In Hamburg, starting the SUMP process and the finalization of the city's transport model took longer than anticipated. This led to SUMBA being ahead of both, which made interlinkage with the SUMP-process much more complicated. It is important to have enough flexibility within the EU-funded projects to adequately react to such developments.



Transport processes and interrelationships as well as mobility issues never end at political borders. That is why a traffic turnaround is inconceivable without inter-municipal cooperation and networked structures at the spatial and personnel level."

The commuter survey was carried out among commuters traveling from Pinneberg to Hamburg and the sample was self-selected with 1 500 valid answers. The results give therefore only insights into commuter distribution in and through Altona and cannot be considered representative of general commuter patterns. The survey did show that there is a correlation between mobility services provided by employers and choice of transport mode. When employers provide free parking or even a company car,

driving was the preferred choice; when a public transport ticket was provided, it led to higher public transport use. Mobility options at the starting point and destination had a big influence of the transport mode chosen.

Altona recommends more intensive inclusion of experts in drafting the survey questionnaire. This takes more time and effort but can help in addressing issues that might also be of interest for other mobility stakeholders and include more specific knowledge of certain stakeholder groups. In the case of the commuter study, a closer cooperation with the Hamburg Public Transport Association (HVV) could have been beneficial, as they conduct customer surveys on a regular basis and are very experienced in the field. With their help data gaps could have been better filled.

Hartmut Teichmann, Pinneberg County

INTERMODAL CONNECTIONS TO ALLEVIATE TRAFFIC CHAOS

OLSZTYN POLAND

Olsztyn as a core city in its functional urban area – a small agglomeration populated with circa 235 000 inhabitants that lies on the Lyna River in north-eastern Poland in the region known as the “Thousand Lakes.” The city is the capital of the Warmian-Masurian Voivodeship and with county rights. Included in the FUA are six neighbouring municipalities, all of which were involved in developing the commuter master plan for the area. Lacking public transport outside the city together with strong suburbanisation have made the private car the main travel mode for commuting in Olsztyn and its FUA, accounting for 40% of weekday trips. The number of cars coming to the city every day is visible on the central streets – traffic jams and parking problems during the morning and afternoon rush hours are a nuisance for people in the relatively small city. Olsztyn’s tram system was reintroduced in 2015 after a 50-year hiatus and helped to alleviate some congestion and contributed to the FUA’s 30% public transport modal share. The trams did not however address access problems to public transport in surrounding communities, where intermodality is therefore key for increasing access to public transport and better linking neighbouring villages, cities and rural areas with Olsztyn city.



Olsztyn: before and after the tram.

Applying the SUMBA-approach

Olsztyn defines four goals in its CMP that lead to a common vision of *facilitating faster, more comfortable and more environmentally friendly commuting for all the inhabitants of the Olsztyn FUA*:

- Development of a comprehensive public transport system in the FUA
- Reduction of congestion by creating a new parking system
- More walkable and cyclable city by prioritising cycling and walking infrastructure
- Increased mobility-awareness of inhabitants through communication and mobility management

Two scenarios are defined by Olsztyn, beyond business as usual, to assist with meeting these goals. These identify varying degrees of infrastructure investment and mobility management activities. Focus is on analysis and building infrastructure for mobility hubs and an interlinking and comprehensive network of cycling paths.

As part of the SUMBA project, Olsztyn conducted a travel habit survey involving 750 households that provided estimates for modal share and gathered data related to journey purpose, destination, and reasons for modal choice for example. The survey contributed to prioritising measures that should promote intermodal transport in Olsztyn's FUA. In addition, several meetings and workshops involving stakeholders, and city council, were conducted as part of defining goals and measures in the CMP document. These were connected to other projects and activities related to mobility issues, as a useful way of reducing "participation fatigue" among stakeholders. According to a transport planner in Olsztyn:

The conclusion from the participatory process is that it is both the most frustrating and most satisfactory part of the work. If one expects major difficulties, they should consider hiring an experienced external moderator to make the process more smooth and fruitful. And visiting stakeholders on site is worth the effort: it allows one to understand their problems better. That is why organising meetings in the municipalities involved in the process to see the location in person and to talk to people in their local area is worth the extra time.

The content and measures in the CMP document will be integrated into Olsztyn's new SUMP, which covers the entire FUA and is to be approved by FUA municipal councils in 2022. Additional participation activities, outside the SUMBA project, will contribute to the SUMP document. Example measures in Olsztyn's CMP include:

- Creating common standards for public transport services, as an element of the cooperation between the FUA municipalities – to enhance the quality of the whole transport system and make it more unified.
- Establishing agreements on launching commuter rail in the FUA together with a joint ticketing system for the FUA.
- Design and build pilot park&ride facilities as a first step to a coherent park&ride system for the whole FUA.
- Design a comprehensive cycling network in order to make bike travel from the FUA municipalities to Olsztyn safe and comfortable.
- Implement mobility management activities, including promotion of sustainable mobility and regular transport behaviour surveys.

Tips from Olsztyn's planners:

When other cities wish to carry out a similar transport behaviour survey, that transport organisers from the whole functional urban area should take part in the survey preparation so their unique interests and desired outputs are included. It is also important to discuss with them the sample division, for example how municipalities are represented in the total survey sample. It would help make stakeholders sure that their needs are being addressed.



“ We met at workshops dedicated to SWOT and CMP goals. It was the first time we talked about mobility in the FUA in such a wide range of stakeholders: representatives of municipalities, transport authorities, NGO's, business, science etc. Thanks to that we were able to discover different points of view and new possibilities. It turned out for instance that intermodality (changing transport modes during one journey) was the issue which we had always considered as crucial for everyday life of our inhabitants. But the SUMBA project was the first moment we could name it and start to look for the proper solutions.”

Agnieszka Zablocka, Gietrzwałd



MOBILITY HUBS IN FOCUS

RIGA LATVIA

Riga's functional urban area is made up of municipalities (regions and cities) within a radius of around 50km. Urban sprawl and increasing population in Riga's neighbouring municipalities increase daily traffic flows to the capital city. And despite reliable public transport service with good frequency, many still prefer to use individual cars for commuting. The result is traffic jams, air pollution and noise among other problems for Riga city. With more than five companies operating various public transport services, collaboration between these and the city can be complicated. These challenges are addressed in the CMP of Riga's functional urban area.



PICTURE BY DREAMSTIME

Applying the SUMBA-approach

Riga's functional urban area defines four common goals in its CMP:

- Reduced private car use in commuting by building mobility hubs
- Introduction of a joint ticketing for public transport in the FUA
- Applied efficient mobility data management to support transport planning
- Fostered collaboration of stakeholders to help create an integrated mobility system

Beyond a business-as-usual scenario, Riga's FUA defines two additional scenarios with the aim of reaching its goals. The interlinked mobility system is the foundation of Riga's FUA and both scenarios therefore include the development of mobility hubs in the region, a total of 26 potential regional mobility hubs, 35 potential urban mobility hubs and 43 potential micro-mobility hubs with different mobility service depending on the level of classification. Beyond this, an interlinked mobility system is the third scenario and builds on the second with additional services including expanded car-share as well as increased cross-border collaboration that includes joint ticketing, better integration of public transport services and common mobility management activities for the region.

A household survey was conducted in 2019 and involved residents living in the functional urban area. Samples were gathered from 5 317 households and covered about 40 000 trips and helped the city to establish commuter patterns, to create origin-destination matrices and to better understand trip purposes and motivation behind modal choices. Modal choice of traffic entering or leaving Riga according to the survey is as follows: car: 38%, public transport: 42% and cycling: 3%.

To better understand the challenges at hand, Riga updated its transport simulation model. The model was updated using data from the household survey and calibrated with help of traffic counting at 50 points across the urban area of Riga city.

Stakeholder consultations, including expert meetings and larger workshops at the regional and local level have been used to define strategic goals and preliminary activities to tackle commuting challenges. This work included two co-creation events together with projects Baltic Loop and NSB Core, as well as close collaboration with Riga Planning Region, which will be joining as a partner in the extension project, SUMBA+. Together with stakeholders, Riga identified measures in its CMP including:

- Build mobility-hub infrastructure and strengthen its linkage with rail transport - six mobility hubs near railway stations in Riga city with good connection to public transport in neighbouring cities
- Update mobility management activities in Riga city that prioritise public transport
- Establish a unified public transport network and system in the Riga metropolitan area: provision of public transport and coordinated operation (routes, timetable, ticket prices, unified public transport ticket)





Tips from Riga's planners:

Planners recommend using innovative IT solutions instead of pen and paper methods for traffic counting. The ease of data management and analysis outweigh the additional costs that might incur. Keep in mind, however, that manual counting may be necessary for calibration and verification

of counting devices.

To work with models, the authority needs educated staff and a specialist in data collecting and result analysis. Model upgrade and data collection need to be organised in a strategic way (and supported by a strategic document), rather than from project to project. Riga's

planners stress that it is also important to involve citizens in the process of conducting a transport study and inform them about the study's benefits. While carrying out a household survey it should be kept in mind that participation can be difficult when the survey is long and needs a lot of explanation.

” **The results of the SUMBA project have made a significant contribution to the development of the Action Plan for the Development of the Riga Metropolitan Area, solutions to the spatial vision of mobility, which are consequently integrated into the regional development planning documents. On the basis of the well-established cooperation, initially, as an associated partner of the project, in the project extension phase (SUMBA +), the Riga Planning Region will participate as a project partner, further researching the possibilities of implementing the mobility vision and implementing the following solutions.”**

Rūdolfs Cimdiņš – Head of administration of Riga Planning Region

NEW MOBILITY THINKING

ŠIAULIAI LITHUANIA

Šiauliai is a medium-sized city located in the north-western part of Lithuania. With a population of 101 500, it is the fourth largest city in the country, with over 140 000 residents in the regional municipality. Every day about 5 000 commuters come to the city to work or go to school. Šiauliai Academy of Vilnius University operates includes a community of over 1 500 students in Šiauliai and the Šiauliai Vocational Education and Training Centre offers education for over 2 000 of students, the majority of whom reside in the regional area. In addition, large industrial companies operate in the Industrial Park of Šiauliai as well as in the Free Economic Zone thus the city offers attractive workplaces for residents in the city and Šiauliai region. Modal share for the city is as follows: 39% of residents use private car, 29,8% - public transport, 26,6% of them travel on foot, 1,5% use bicycles, 3% - other modes of transport. While modal share for cycling is low in the city, it is anyway home to Baltik Vairas, one of the largest bicycle manufacturers in Northern Europe and one of Šiauliai's largest employers.



PICTURE BY RINAT TARZUMANOV

During the SUMBA project, Šiauliai started with a clean slate: the city didn't have a unified vision of mobility within the city and neither the issue of intermodality nor commuting outside city boundaries had been discussed in detail. Similarly, mobility was not included in strategic documents and plans. The project, however functioned as a catalyst, in conjunction with increasing ambition around sustainable mobility, focus has shifted away from roads and cars to the idea of Šiauliai as a city that can be suitable for cycling and with improved access to public transport in the regional municipality.

Applying the SUMBA-approach

The future vision for Šiauliai includes four aspects for its transport system:

- Safe – the city faces the minimal amount of the road accidents and all traffic users feel safe.
- Sustainable – transport has a minimal effect on the environment including pollution and noise. Transport modes use renewable sources of energy, occupy minimal land space and the network of city streets is more proportionally divided according to the social needs of citizens.
- Accessible – the transport system does not limit possibilities of people to move and to select different ways of travel regardless of their age and physical capabilities.
- Effective – the maximum effectiveness of the transport system is ensured by matching the combined journeys and installing the IT systems. The city space is used effectively.

In addition, the vision for transport in Šiauliai in 2030 includes combined modal share of 34% for cycling and by foot, 33% by public transport and 33% by car in the regional municipality. Two primary studies were performed during the SUMBA project; these provided the basis for the CMP and will be incorporated into long-term strategic documents for planning and budget allocation. The first was traffic counting to determined flows coming into and leaving the city at peak periods to better understand traffic patterns. In addition, a travel habit survey gathered information from 2 575 residents in Šiauliai to analyse the flow of Šiauliai region residents commuting to the city for work or school as well as motivations behind modal choice. According to the study, reasons for choosing the car over public transport included lack of routes, long travel time and long distance to stops. Reviewing the results with stakeholders led to the conclusion that a unified public transport system was needed in the regional area. Discussions between Šiauliai city, the regional municipality and public transport operators initiated new plans for a joint central transport hub in Šiauliai combining both bus and railway station at the same location. Currently these are at different locations and limit ease of transfer between different public transport modes. The momentum continued throughout the project period and a combined ticketing system was later introduced for regional and city buses. Scooter rental is available, and a cycling share scheme is also being considered.

Click for further reading



Example measures in Šiauliai's CMP include:

- Renewal and development of the public transport infrastructure including bus lanes in the city and district municipality leading to the city, and improved quality of public transport stops.
- Update the public transport fleet with new buses including electric vehicles (55% of fleet) and those powered by alternative fuels. Supporting charging and biofuel filling stations are proposed for the FUA
- Improvement to public transport accessibility including for those with limited mobility (higher standards for vehicles)
- Improved walking and cycling infrastructure including new paths and routes and improved lighting of those existing
- Promote intermodal transport with park&ride locations at city borders and introduction of bike sharing to the city
- Introduction of smart IT systems such as E-ticket and real-time information, covering the entire FUA
- Optimisation and reorganisation of public transport routes in FUA with focus on newly built areas and important destinations.

Tips from Šiauliai's planners:

To carry out a travel habit survey like what was done in Šiauliai, planners should use a method that could be reused in the future to be able to measure changes and effects of different measures following implemen-

tation. For transport flow studies, it is important to ensure that the method and terms of reference are developed together with help of both internal experts and external experts such as researchers. This helps to clarify exactly what is the city

wants to achieve and provide details of the work including recommended counter locations, possibilities with available technology, expected results and how best to use and analyse the results.



The constructive dialogue between the city and district municipalities has led to a positive result. The city routes have been going to many districts of Šiauliai for a long time: Ginkūnai, Sutkūnai, Lieporiai, Pakapė, Vijoliai and many others. From 2020, residents of Kairiai and Šilėnai towns can also conveniently use Šiauliai city public transport. They no longer have to buy different types of tickets or board a commuter bus to the city, as it was before. This facilitates additional commuting possibilities. We are pleased that the gap between the city and the district is narrowing, which is of mutual benefit.”

Vaidas Seirackas, Director General in JSC “Busturas”



CREATING POSITIVE COMMUTING TRENDS

TALLINN ESTONIA

In the 15 years between 2003 and 2018 the Tallinn city region saw a significant decrease in the share of those commuting by public transport (from 43% to 31%) and foot (from 18% to 12%). Meanwhile, the share of those travelling by car grew from 35% to nearly 53%. The rapid increase in car use and economic development in the region have now brought 50% of the country's total transport and its environmental impacts to this region. Mobility in Tallinn city and Harju region has not been managed as a whole and having different public transport systems in the city and region has made it inconvenient to use public transport for commuting across regional boundaries. Poorly managed land-use planning has also led to widespread urban sprawl with residential buildings built in areas lacking good quality infrastructure for active transport (ex. cycling and walking) and with poor access to public transport. An important positive development was gaining political support to address these issues and to develop mobility in Tallinn region, in close cooperation between the city and national authorities. In October 8, 2019 a cooperation memorandum was signed by the mayor of Tallinn and minister of Economic Affairs. In addition, Tallinn will soon submit Sustainable Energy and Climate Action Plan.



PICTURE BY MARI TAMM, VISITTALLINN.EE

Applying the SUMBA-approach

Tallinn's CMP highlights a vision to be a human scale city, with well-designed and inviting urban space with convenient sustainable mobility. A network of high-quality public transport and innovative mobility services in the greater Tallinn region is also an integral part of the vision. Goals according Tallinn's CMP include:

- Public transport and active modes of transport make up 50% of all trips by 2025 and 70% by 2035 in Tallinn region.
- Transport and mobility of Tallinn region is based on common management, common ticketing and network operation enabling a shift to sustainable transport modes and encouraging independent travel of school children and elderly.
- By 2035 a 40% reduction in transport related greenhouse gas emissions in the region compared to 2007.

Several studies were conducted during the SUMBA project and provided a better understanding of the transport situation today in Tallinn as well as how to prioritise measures and investments. A light rail feasibility study demonstrated that it is socio-economically viable to develop new tram routes to create fast cross border commuting opportunities and better utilise existing rail infrastructure. An accessibility study that measured access to services in the region by car, public transport, bike and by foot showed that public transport connections were slow (compared to the car) and that services are often not well accessed by bike. This is despite that the city's compact size makes it well-suited to cycling, but heavy motorised traffic and lacking cycling infrastructure mean that few use the bike for commuting. In addition, a study on public transport stops gave insight into how well regional

buses manage to follow their timetable and identified quality standards to be applied as well as problem areas in the city. Together, these studies provided valuable input to the CMP by highlighting the importance of a well-connected and attractive public transport network in the region. In the CMP, the modelled tramway network forms the backbone of the mobility approach where other modes of transport can complement and be combined with it for complete intermodal trips.

Tallinn's CMP can be considered a supplemental document of Tallinn's SUMP with greater focus on commuting. The SUMP document is pending city council approval.

In general, Tallinn's CMP recommends mobility development and investments to be focused on meeting the increasing demand for travel with public transport, and travel by foot and by bicycle. Increased integration of land-use planning, and transport planning should be prioritised. Example measures include:

- Decrease public transport fares to make it more attractive and affordable.
- Create a joint financing mechanism for organising transport in the region; all public transport services will be planned and procured jointly.
- Implement a polluter/user pays principle in traffic and parking management (rush hour, CO2 and parking fees)
- Invest in rental bikes and other mobility services
- Invest in mobility hubs the location of which will be determined by an ongoing study by the Ministry of Economic Affairs
- Build a comprehensive network of bicycle paths in the region





Tips from planners in Tallinn:

The regional tramway network feasibility study and cost-benefit analysis for Tallinn and Harju region is mostly applicable in the region. The study showed that there are benefits to using existing infrastructure and that tram is preferred because maintenance and lifespan of the fleet are favourable in

this case compared to bus rapid transit. The standards of public transport stops are quite influential in designing future public transport stops in the region and could be applied for other regions and countries as well. In general, while designing public transport stops, aesthetic qualities should not be neglected.

A key aspect to consider when measuring accessibility is the availability of relevant data and being prepared to collect new data. When using modelling for more complicated analysis, like active transport, it is important to dig deeper into the mechanisms of the models proposed to determine whether they sufficiently reflect reality.

“The Ministry of Economic Affairs and Communications has throughout the SUMBA project been involved in related activities in Tallinn capital region and Harju County. Tallinn region, as the most dominant transport hub in Estonia, generates half of Estonian trips and with that also transport emissions. This means that achieving a modal shift in this region has potentially the biggest impact in reaching our strategic climate goals in the transport sector. Creating fast and sustainable mobility solutions for everyday commuting and finding ways to improve access and attractiveness of public transport are in the heart of that strategic goal. Work done in the SUMBA project has given a beneficial input for developing policies for urban areas in our national Transport and Mobility Master Plan for the years 2021–2035. The SUMBA project has also contributed to the Tallinn region mobility council’s work, as both Tallinn and Harju light rail feasibility study and study on the public transport stops (NewMODAL) have provided good input in preparation of action and investments plans for achieving strategic goals in the region.”

TARTU'S "BUSY" SCENARIO



TARTU ESTONIA

Tartu is Estonia's second-largest city, second to capital Tallinn. It is the location of the Supreme Court of Estonia and the country's oldest university, the University of Tartu. Tartu City was and still is a city where car use is growing – in the last 10 years the total number of cars on the road has doubled and the private car has become the main mode of transportation, accounting for 46% of all trips within the city. Car traffic, especially in the scenic downtown area is becoming an obstacle for developing cycling and walking. People are, understandably, afraid to ride a bicycle on busy streets. A large portion of car commuters come from neighbouring suburbs, including new housing areas that have filled with families, and travel to the city center where there is the highest density of workplaces. Regional and suburban public transport, however, fail to meet the needs of passengers, including missing connections to urban transport services. Some major investments to public transport in 2019 had a positive impact with a 10% increase of bus rides in the city. In the same year, a bike-share system was introduced, consisting of 750 bikes at 69 share stations throughout the city. The system comprises of 500 electric bikes and 250 regular bikes which are unlocked via mobile application or bus card.



Applying the SUMBA-approach

Tartu outlines three major goals in its CMP:

- To reduce the environmental impact of the transport sector
- To reduce the number of private car travel in Tartu region, thereby increasing the quality of life in urban and near-urban areas
- To develop and increase use of innovative technical measures that support multimodality including a joint validation card and real-time information system

Three scenarios were identified for the year 2030, with varying degrees of investments for sustainable mobility. The scenario considered as the most ambitious, referred to as the “busy” scenario (compared to alternatives “lazy” and “moderate”) includes emission reduction by 15% where car travel accounts for only 30% in 2030 and only 14% in 2040. The share of public transport should increase to 24% in 2030 and 30% in 2040 while active mobility, combined cycling and walking, should reach 40% by 2030 and 49% by 2040. Success in achieving this scenario is dependent on the ability to fully integrate the region’s public transport system including the city’s tram and bus rapid transit systems, building high-quality cycling infrastructure according to Tartu’s action plan, and imposing restrictions to car travel.

During the SUMBA project, the city focused largely on gathering data, through traffic counts and through participation of its inhabitants, to better understand what goals are feasible and for identifying measures to be included in their CMP. This included several surveys such as a travel habit survey for the city and adjacent area with the aim of identifying distribution of travel modes in the city and urban area and to find residents’ preferences for modal choice. Many travellers chose cycling as their preferred mode and this motivates the cycling-related investments and measures included in Tartu’s CMP. Traffic counts collected during the SUMBA project assist with prioritising measures, identifying locations and capacity requirements for mobility hubs. Traffic flows in the city were modelled with help of a GIS tool and with traffic counts collected during the SUMBA project as well as population and migration data. Results from the GIS model helped to determine which measures would be most effective. Among the measures outlined in Tartu’s action plan include:

- Open a bicycle library that provides a wide range of bicycles for residents to test. Bike types include cargo bikes and mountain bikes.
- Create a public transport monitoring system that provides real-time information system that will be introduced for public transport lines outside the city.
- Integrate multimodality transport hubs including installation of ten new bike-share stations (in addition to 69 existing) to better connect the city’s centers and important mobility points.
- Plan and build cycling networks to better connect the city centre with the railway station and other city districts.

PICTURES BY LILIAN LUKKA





At the regional level, additional public transport lines will be extended to new urban regions in the outskirts of the city and then integrated with the city's public transport network. In addition, the city will extend its city bike sharing network to include adjacent regions of the city that are currently lacking service. Tartu's CMP was part of developing its Sustainable Climate and Energy Action Plan for 2030. This has made the CMP a part of official City Council document and will have a significant impact on the future of Tartu.

Tips from Tartu's planners:

Tartu engaged with a wide range of stakeholders to assist with defining goals and measures in their CMP. The city's planners suggest finding the forerunners, the people and organisations that already are implementing the innovative mobility solutions, and give them a platform for sharing their ideas and lessons learned.

Adjusting the "unjustified privileges" of the car owners is a challenging task because it's a very active and influential minority in Tartu. Most of the traffic experts and administrators are dedicated car users themselves and the changing in the mindset

will not come easy. Our approach was to balance the interest of the car users with different voices in community during the engagement process.

Transport planning needs to be proactive rather than reactive and better connected to land-use and detail planning that steer development of cities and surrounding FUA. Urban sprawl and suburbanisation are on the rise in many areas and create many challenges and these need to be addressed early in the development process. New housing areas for example should not be built without meaningful considerations for and planning for sustainable mobility.

” **The SUMBA approach has been immensely useful to offer a methodological framework for the first modern transport policy in the city of Tartu that is combining the expertise of the professional transport planners with the diverse voices from the community. Provided methodology is addressing not only the specific challenges of mobility management (like the traffic flows and modal share) but also is asking the wider questions about the sustainability of the transport sector in terms of the energy usage and environmental/climate impact. It's crucial for any transport policy to implement this kind of integrated approach as it allows to build up the technical expertise and public acceptance for a transport policy to be part of the overall energy and climate planning of the city, as it has happened in Tartu.**”

A CYCLING CITY AND INTERMODAL MUNICIPALITY

VÄXJÖ
SWEDEN

The smallest city in the SUMBA partner constellation, Växjö has a population of 60 000 inhabitants in the city that is surrounded by smaller villages, and sparsely populated countryside among the forest and lakes in the greater municipality. Most commuting trips are within the city (circa 60%) the remaining are within the municipality including to the city (20%), in or out of the municipality (15%) or between villages or rural areas (5%). Växjö's challenge is it lacks congestion of bigger cities that would make car driving less attractive. This means many car trips are under 5 km, otherwise ideal distance for other means of transport such as cycling, walking or scooters for instance. Outside the city, public transport access becomes poorer as areas become sparsely populated and people are more dependent on the car for their daily travel. In the last 20 years, the municipality has converted nearly all its electricity and heating energy production to sustainable and fossil free sources. Transportation is therefore the leading contributor of carbon emission, contributing approximately 96%.



Applying the SUMBA-approach

Among the goals outlined in the municipality's sustainability plan for 2030 is to become fossil fuel free by 2030. Two alternative scenarios are suggested in Växjö's CMP aside from business as usual. The first involves developing Växjö into a cycling city with a modal share increase to 40% from 20% in the municipality compared to 2012. The second involves increasing focus on public transport with faster routes in the city and expanding service in the countryside, bringing public transport modal share to 18%. The combination of these scenarios would drop car modal share to 30%. And the car trips remaining are to be with vehicles using electricity or renewable fuel such as biogas or bio diesel (HVO).

Växjö's CMP acts as a supporting document to the revision of the municipality's transport plan, to be approved by city council in October 2021.

As part of the SUMBA project, Växjö city's transport model was updated with new forecasts for 2040 and 2050 as well as a new cycling model. Measures are planned to be tested in the model during the extension project, SUMBA+. In addition, outreach to residents was done using digital surveys on traffic safety, first with residents that revealed that 85% of those that answered the survey (500 people) felt that changes to the road design was necessary to improve safety and security. Second, a similar study involved school children identifying their route to school and problem points in the municipality with help of digital mapping tool. In addition, a commuting study was performed using statistics for workplace and residence locations (origin-destination matrix) and helped to better understand travel between different villages and neighbourhoods as well as access to one's workplace with bicycle, electric bike and public transport. A bicycle library was introduced during the SUMBA project and provided 24 bicycles of different kinds for residents to borrow for a three-week period. Bike types included electric, cargo, gravel, folding, electric scooter and child trailers. The popularity of the project showed there is a large interest in testing these types of bikes and many people felt they could replace car trips. The bicycle library will be developed further during the SUMBA+ extension stage project.

Despite investments and improvements to cycling infrastructure since the last travel habit study in 2012, Växjö's cycling modal share has not seen a significant improvement. The CMP will therefore have an increased focus on prioritising road space for active and public transport in the city. Outside the city, public transport will be combined with other services (mobility-related, package pickup etcetera) to make it more attractive. Measures in Växjö's CMP include:

- Implementation of a circulation plan or in Växjö city that prioritises walking, cycling and public transport by limiting car travel between neighbourhoods, directing it to "ring roads."
- Increased efforts to improve availability of share services should reduce the need for privately owned cars, such as carpool and bike pool.
- Establishing mobility hubs and combined services (package pickup/drop-off) at popular hubs as a way to consolidate trip purposes.
- Test of "summer streets" as a way to ease in road closures in a participatory way that is temporary during summer months.

PICTURES BY MARCUS ÅBERG AND MATS SAMUELSSON





Tips from Växjö planners

Being a relatively small city, Växjö does not have a large budget for cycling and walking infrastructure. A circulation plan uses existing road space and reallocates it to pedestrians, cyclists and public transport as a good, low-cost option for promoting increased traffic safety, but these types of solutions can be controversial and need to involve participation of affected actors. The summer streets method is a way to help people experience road closures to car

traffic so they can experience the difference (and positive change) that results. There is a possibility that these become permanent changes that combine to form a circulation plan for the city.

The bicycle library in Växjö inspired other cities to do similar including Tartu and Altona in the SUMBA consortium. Växjö's pilot involved a partnership with four local bike shops that were responsible for service and lending of the bikes. This was a good way to influence the sales of

different bikes (making them more accessible to consumers) and to help borrowers to connect with bike experts to find the right solution for their mobility needs. Transferring the concept to other cities depends on the local context, having good existing cycling infrastructure is important so that people feel safe to cycle in the city. In addition, a booking system can be an expensive investment for the bicycle library but saves time in administrative work for those operating the library.



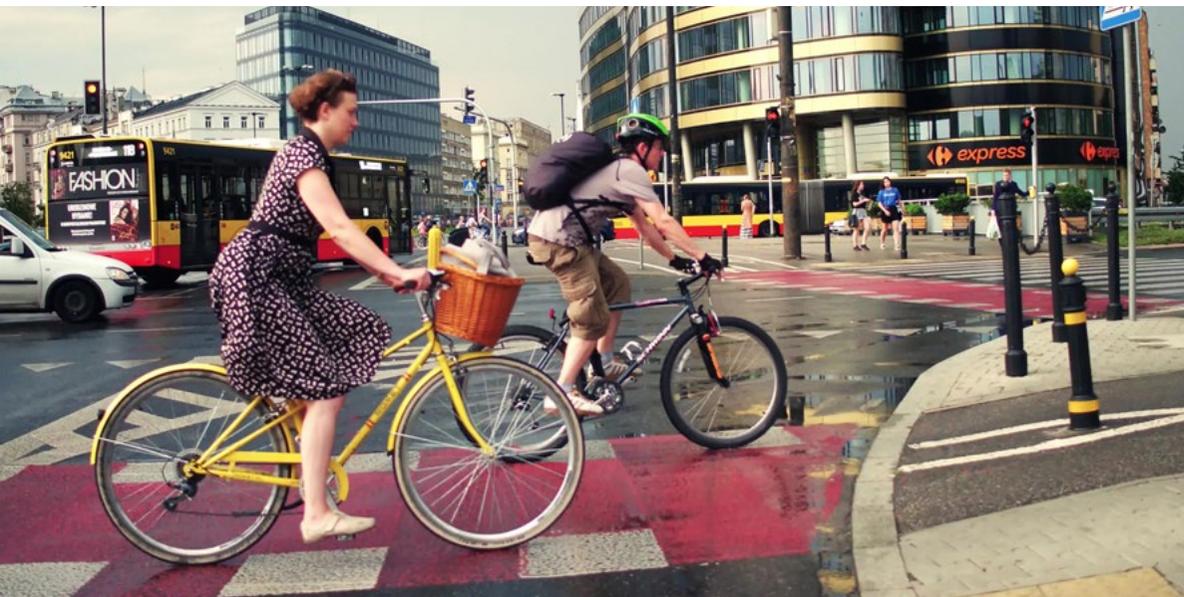
Very good service! I have cycled a lot and now am leasing an electric bike so I can continue; haven't thought about the car in a month. This experience definitely reduced the amount of time I spent in my car, especially with pick-up of children from preschool which is 5kms away from our home. – I hadn't really considered buying an electric bike before, but I was in the market for a "regular" bike. Now I have reconsidered and would like to try out a few more models to base a decision for a future purchase. Great initiative!"

Växjö residents on testing bicycle culture through the city's bicycle library

INTERMODALITY IN THE WARSAW DONUT

WARSAW POLAND

The CMP in the greater Warsaw area involves the cities surrounding Warsaw where many commuters travel from to their workplace in Warsaw city. Increased housing prices in Warsaw push more and more people to surrounding cities and even further beyond, contributing to high volumes of car traffic and near-constant traffic jams. In general, train connection to Warsaw is good for many of the surrounding cities but is currently underused. The city of Legionowo contains cycling infrastructure including park&ride and bike&ride facilities and can be a model for the other cities to follow if it wasn't for a lack of available land to build certain facilities.



Applying the SUMBA-approach

The common goals for the cities involved in the CMP include:

- Improved public transport, including connecting to Warsaw's system and fare zones where possible.
- Regulation of public transport outside the city limits
- Wherever possible building multi or bi-modal hubs especially allowing access to train lines
- Reduction in car traffic
- Introduction, development or re-introduction of public transport

Field surveys and discussions with city officials including the SWOT analysis, were performed to prepare the CMP document. Results from these revealed challenges related to land ownership and land use show how difficult it can be to make improvements. Three examples of measures in the CMP are listed below:

- Form a coalition among surrounding cities that can affect bigger transport plans (i.e. at the "voivodeship" level) and help boost the negotiations with Warsaw transport authorities
- Increase public transport stops in the surrounding villages and create improved routes and timetables for public transport.
- Cooperative multi-stakeholder dialogue on building infrastructure where land ownership is complicated



INTERMODALITY IN THE PORT CITY OF GDYNIA

GDYNIA POLAND

Gdynia is a port city bounded by the ocean and protected nature areas to the south and west. Limited space is available for housing outside central areas and high prices in the city mean many people move to surrounding areas. This translates to long commutes, many of which are done by car, 51,5% according to the latest travel habit survey from 2015.



PICTURE BY JANUSZ JAKUBOWSKI, FLICKR

The survey also showed a relatively high public transport use however at 35,5%, walking at 11% but cycling at a low 1,6%. Gdynia is becoming the busiest port in Poland and today about half the traffic through Gdynia is truck traffic. Traffic jams hinder motorists during morning and evening commutes, and this is expected to increase even more as an additional container terminal for the city is planned.

Goals for the city include:

- Increase modal share of public transport across the port and the nature reserve
- Work to ensure enlargement of the port does not create a larger traffic problem
- Increase train stops in the suburbs, with increased intermodality through mobility hubs, more accessible public transport for youth and mobility impaired.
- 10% fewer car trips

Applying the SUMBA-approach

During the SUMBA project, a study on goals and specific measures was conducted as well as dialog with several stakeholders including public transport operators and even real-estate agents involved with selling land in more remote areas outside the city. A transport model as well as SUMP for the city were available and used as a reference for the CMP by providing future traffic forecasts for the three cities: Gdynia, Sopot and Gdansk.

Measures in Gdynia's CMP for improving conditions for sustainable and intermodal transport include:

- Discussion with surrounding municipalities including planning public transport for new developments
- Create a dialog around land-use planning and sustainable communities that help to reduce private car use
- Introduce flexible and dedicated high occupancy vehicle (HOV) lanes for buses that increase capacity in direction of rush hour flow.
- Build a train line passing the bottleneck formed by the port and going to Oksywie and Obłuże
- Create joint ticketing system among the cooperative transport union through a multi-municipality transport agreement





LOOKING FORWARD: **SUMBA+**

While the SUMBA project focused on data-driven and participatory planning for intermodal and sustainable transport, the extension project SUMBA+ intends to take this work further. It is a short and intense nine-month project with a tighter consortium of five partner cities and regions that will take their CMPs and high-priority measures to the next step. This work is done with the support and expertise from partner organisations BEF in Estonia, Latvia and Germany as well as the Institute of Transport Research at the German Aerospace Center (DLR).

Växjö, as lead partner, will perform a feasibility study for a circulation plan in the city with help of its transport model. In addition, mobility hubs including park&ride, bike&ride facilities in the municipality will be analysed. Methods of integrating emissions with modelling tools will be examined by Växjö and Riga Planning Region for evaluating effects of measures on carbon emissions. Tartu will start a bicycle library and together with Växjö create a handbook for other cities interested in starting their own bicycle library. Lessons from Växjö's new lending platform to be creating in the extension project will be included. Tallinn, Riga Planning Region and Altona will produce further feasibility studies for mobility hubs in their respective areas. Tartu will continue working with GIS-based tools and develop a real-time modal share tool using traffic (bike, car) counts at various points in the city combined with public transport data.

Since many cities and regions face similar challenges there will be a twinning activity involving thorough study visits and good practice exchange between similar cities in the consortium. Lastly, the progress and development of the SUMBA approach including the CMP process will be reviewed. This and all other activities will be reported and updated on the SUMBA.eu website. Stay tuned.

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