UMAM Roadmap Report 2020 – Helsinki

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List of abbreviations

UMAM	Urban Mobility Assessment Model
GHG	Greenhouse Gas
SUMP	Sustainable Urban Mobility Plan
MaaS	Mobility as a Service
LEZ	Low Emission Zone

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1. City Context

Helsinki is the capital city of Finland. It has 650,000 inhabitants and covers an area of 217 square kilometres. The Helsinki region public transport system is made up of many different modes of transport. The system relies on a combination of rail and buses whilst feeder buses serving rail lines.

Public transport customers in Helsinki particularly appreciate the reliability of the service. Public transport services are organised to ensuring good coverage of the region, realistic timetables and easy connections[1].

The Helsinki Urban Environment Division is in charge of planning public transport for new development, which enhances the consideration of land use and transport planning at the same time. The Helsinki Regional Transport Authority is the inter-municipal authority that maintains the public transportation network of the nine municipalities of Greater Helsinki.

Transport infrastructure planning is derived from the city plan and partial city plans. Transport and traffic plans define how streets are divided among different transport modes, lanes and parking. The plans are developed by the Urban Environment Division and are approved by the City Council. Citizen engagement is very important in Helsinki, citizens can participate by giving feedback through the city feedback system and initiatives are sent to the City Registry Office[2].

The City has its 2017-2021 strategy, which includes the Central Pedestrian Zone and Underground Distributor Street project. With most of the trips generated in Helsinki being made by foot, the project means a significant expansion of the central pedestrian zona, making the city centre even more attractive, with the underground distributor aiming to reduce traffic in the surface and distribute better the heavy traffic to and from harbours[3].

[1] Public transport planning | City of Helsinki
[2] Planning and construction | City of Helsinki
[3] Central Pedestrian Zone and Underground Distributor Street Project | City of Helsinki

2. UMAM Scoring

2.1. Policy and Innovation

The objective of this dimension is to analyse how city authorities manage urban mobility and their policy making process. This is done by analysing public policies, actions and protocols that are developed to think about the mobility of the future, today. The importance of this indicator is to be the first approximation of the strategies of cities, as a regulatory body and manager of urban mobility.

The analysis model is divided into three dimensions: mobility of people, mobility of goods and innovation.

Mobility plan

Mobility plan and policy making is analysed in the dimensions of network city integration, public transport service, reduced mobility, touristic plan and resilience and sustainability in terms of policy development and implementation. Each of the five dimensions is analysed using a scale of 1 to 5[4] depending on its level of implementation in public policies defined according to:

- Analysis of problems and opportunities concluded: working structures set up, planning framework defined, analysis of mobility city environment- 1
- Vision, objectives and targets agreed: build and assess scenarios, vision and strategy developed with stakeholders, indicators and targets are set- 2
- Policy adopted: measures/actions/projects are bundled and run through stakeholders, agree actions and governance for implementation agreed, develop implementation plan and finance - 3
- Measure implementation evaluated: actions and projects start implementation, outcomes are monitored, change management implemented, communication strategy deployed, plan reviewed - 4
- Process has iterated and it counts at least with 2 policy cycles - 5

Cities with values between 1 and 2 will be those with greatest room for improvement, while those with 4 or 5 already have a more consolidated position. This is due to the

[4] A letter N is shown where data was not submitted or is not available.

progressive character of the policy making process based on the stages of the Sustainable Urban Mobility Plans.

Freight mobility plan

Freight mobility plan dimension is analysed based on the sub-dimensions of last-mile policies, delivery timings, virtual loading bays, digital management and resilience, and sustainability. Each of the five dimensions is analysed using a scale of 1 to 5 levels depending on its level of implementation in the public policies as defined above.

Innovation

The last dimension of the analysis is innovation. This is key to understand how the capacity and willingness of each administration is to seek and implement new mobility proposals in the city. The analysis is done by considering its innovation objectives, as well as the practice through the example of pilots already carried out. The ratio between total euros and number of pilots is also calculated, to understand an average value per pilot and the importance of each pilot project.

2.2. Transport Supply

This dimension analyses the infrastructure provision within the city and how well it supports a transition towards sustainable mobility. It analyses the availability of different modes within the city and how some infrastructure has been introduced. It is important in that it assesses the current situation and enables more detailed analysis with respect to criteria in other dimensions (e.g. modal split within transport demand). It further helps determine what kind of policies might be most beneficial in terms of infrastructure investment, improving accessibility and what the focus for provision of transport should be when considering availability of sustainable options for individuals.

Each one of the transport modes can be assessed both separately and as part of the total provision in the city. Each mode is scored separately using threshold values and allocating a score from 1 to 5 for each threshold. Additionally, UMAM assessed car ownership, number of charging stations, service reliability, and the number of consolidation centres (to show availability of last mile infrastructure).

2.3. Transport Demand

The transport demand section explores how the city is performing in terms of number of trips conducted by different modes of transport and the annual congestion levels which

represent the additional travel time drivers experience compared to a free flow traffic situation with no congestion. Transport demand indicators provide an overview on how well the transport system of a city is performing, which can lead to insights regarding the improvement of traffic conditions and the modes of transport that are better suited to support sustainable mobility.

Within the modal split category, the aim for cities should be to achieve higher modal share for sustainable modes (i.e. active modes, public transport, sharing mobility) as opposed to private vehicles. The thresholds of scores for the different modes (1-5 based on the index) show whether the score for each mode is positive or whether there should be additional work and targeted intervention for this in particular. The criteria measured within Transport Demand is modal split and traffic flow and efficiency.

2.4. Data

The goal of this dimension is to analyse how city authorities divulge urban mobility data. The importance of this indicator lies on how best to benefit from the huge data flowing in our cities and determine recommendations to strengthen urban mobility. UMAM focuses on certain data types: travel behaviour, real time disruption, air quality, socioeconomic data, active travel, motorised traffic, public transport and road and street congestion. Each of these types is then assessed according to the actions taken in regard to their collection and availability: data collected, public authorities management, data availability to third parties, open data and data availability for application development. Each of one of these actions correspond to a point in a 1 to 5 overall score for each type of data.

2.5. Environmental Aspects

The goal of this section is to consider the environmental impacts of urban mobility systems on a local level. Currently, the transport sector emits 27 % of the European GHG emission[5]. But, decreasing local emissions does not only contribute to the current main political targets of the European Union (e.g. Green Deal) to reduce the global emissions but also to the quality of life of citizens.

[5] https://www.eea.europa.eu/data-and-maps/indicators/transport-emissions-of-greenhouse-gases/transport-emissions-of-greenhouse-gases-12

The indicator considers four sub indicators: the presence of low emission zones, data on the European Air Quality Index, Green House Gas Emissions, and noise. The data cities input for these sub indicators are matches to a threshold and scored from 1 to 5.

2.6. Social Aspects

The objective of this dimension is to analyse how well urban mobility systems meet the needs of end-users from a social perspective. This is done by taking into account how people live and interact with mobility systems and infrastructure in their city, including socioeconomic and physical considerations.

The importance of this indicator is to be the first approximation of how closely aligned a city's mobility system is to the needs and desires of its users from a social perspective.

The analysis model is divided into four dimensions for assessment according to its objective in order to provide a holistic understanding of how well the system is meeting social needs: pricing of public transport, accessibility, traffic calming and traffic safety. The data is allocated to thresholds, which are link to a score from 1 to 5.

2.7. Roadmaps

After data is submitted, the UMAM score is generated. A brief literature review is completed to capture basic information of the city. With the information provided through the UMAM tool and the literature review, a roadmap is produced for each city. The roadmap follows a Avoid/Reduce, Shift/Maintain, and Improve approach.

The approach, known as A-S-I (from Avoid/ Reduce, Shift/Maintain, Improve), seeks to

- achieve significant GHG and air pollutants emission reductions,
- reduced energy consumption,
- less congestion,
- while increasing the levels of physical activity through walking and cycling as a daily mode of transport,
- more efficient use of public space,
- better accessibility, with the final objective to create more liveable cities.

Avoid/Reduce: Activities that are considered for this column are aimed to improve the efficiency of the transport system through integrated land-use planning and transport demand management, to reduce the need to travel and the trip

length. There is a negative correlation between the activity and the objective, for instance: reduce car dependency in transport supply or demand to improve the city scoring.

Shift/Maintain Activities are aimed to improve trip efficiency, while encouraging modal shift from the most energy consuming urban transport mode (i.e. individual motorised transport) towards more environmentally friendly modes. There is a positive correlation between the action and the indicator, for example: Maintain and continue gathering Environmental data to keep the city score high.

Improve Activities focus on vehicle and fuel efficiency as well as on the optimisation and innovation of transport infrastructure and network. There is a beneficial correlation between the action and the scoring, for instance: improve stakeholder engagement practices for the city to achieve a higher score.

Additionally, each action is professionally assessed in terms of timeline and complexity. As regards timeline, the options are short, medium or long term, which can roughly be interpreted as 0-1, 1-3 and +3 years. Complexity is assessed at a high level according to the resources needed to implement such measures.

The analysis has been conducted on the basis of the data provided by the city of Helsinki using the UMAM online platform. The City of Helsinki scored 3.8 in UMAM.

Figure 1: UMAM scoring for the city of Helsinki

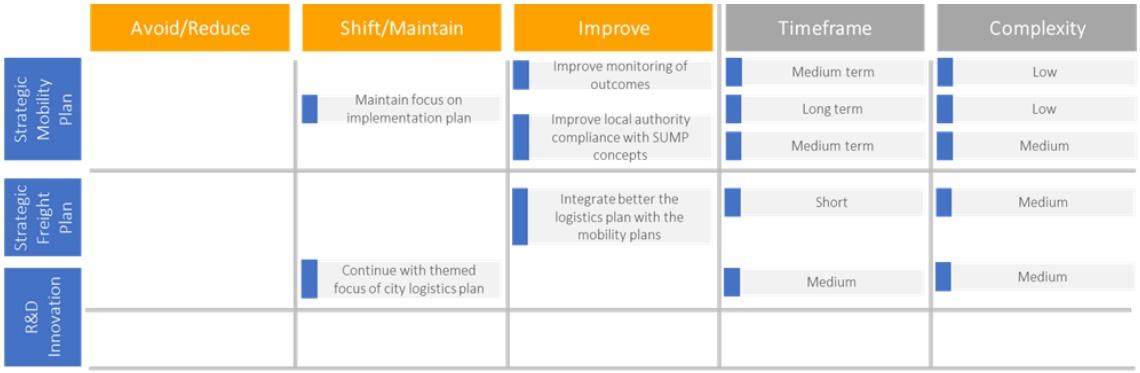
3. UMAM Roadmaps

3.1. Policy and innovation

The transport planning tools in Finland differ somehow from the SUMP. The Finnish counterparts of Sustainable Urban Mobility Plans (SUMPs) at regional level are Transport System Plans. In the Helsinki Region, a law requires that a Transport System Plan be drafted every four years[6]. Conscious of the difference of approach, the Finnish Transport Agency has compared both processes[7]. Environmental considerations for transport can be found in the Environmental Transport Strategy, National Energy and Climate Strategy, Programme of the promotion of walking and cycling, and the medium-term Climate Change Plan. As for the innovation section, Helsinki is funding 43 pilots with 20 million euros with 100 direct partners.

Recommended actions

Figure 2: Policy & Innovation: Recommended interventions



Following the assessment of the Finnish Transport Authority, the focus for the strategic mobility plans should be less on the content and more on compliance with the policy making process and increasing the monitoring and implementation of projects to ensure the objectives defined are met. It would also be good to integrate the different plans and strategies into a single main document or provide a clear policy structure to avoid confusion of which policy is higher in rank.

[6] https://www.eltis.org/mobility-plans/member-state/finland
[7] http://www.ubc-sustainable.net/sites/www.ubc-environment.net/files/events/files/presentations/sumps_in_finland.pdf

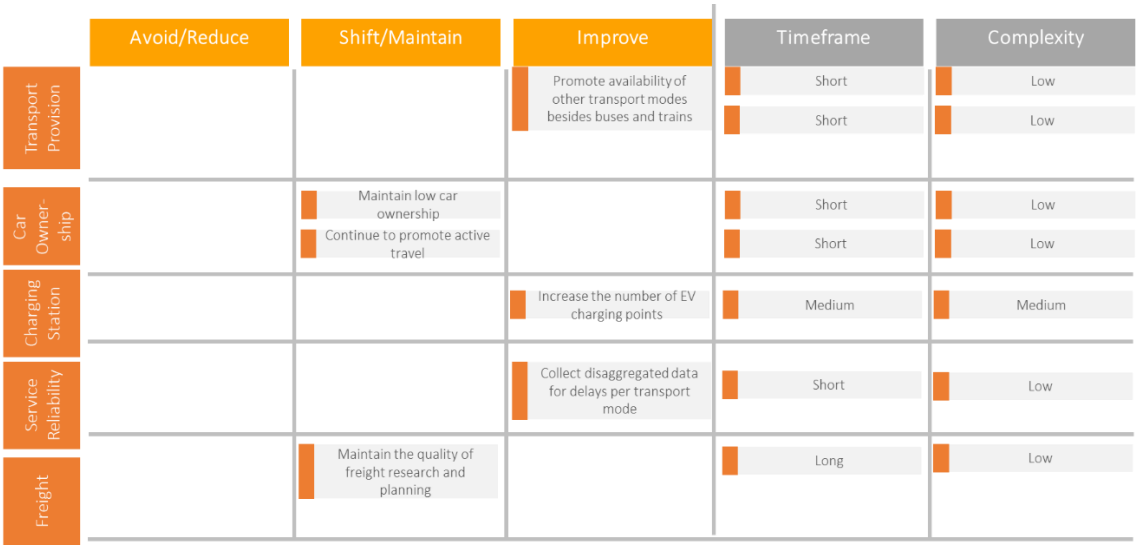
Regarding logistics and freight, the updated City Logistics Plan and its themed content are most welcomed due to the length of its contents: delivery infrastructure, it-systems, cooperation, experiments and underground delivery. Helsinki promotes night-time delivery due to lesser traffic and allows car deliveries only from 05:00 to 11:00 in pedestrian zones. In addition, Helsinki is promoting the use of bicycles in deliveries, allowing only trucks under 12 meters length to enter to the city centre.

3.2. Transport supply

Most transport modes can be found in the City of Helsinki. The City has 19 metro stations and 15 rail stations that serve the metropolitan area. It also has a big network of bus stops (5050). Transport provision includes ride hailing, bike sharing, car sharing and micro mobility options. Car ownership is of 27%, which is lower than the European average. The public transport provision is also timely and reliable, with only 0.6% of services delayed. The city has 367 consolidation centres in Helsinki.

Recommended actions

Figure 3: Transport supply: Recommended interventions



The main recommendations for Helsinki in the transport supply area are to maintain the low levels of car ownership and the high levels of walking and cycling. The city is on track to improve active travel with projects such as the pedestrianisation of the city centre. It is also encouraged that the city maintains the level of research, planning and

implementation of freight actions, such as the high number of consolidations centres. The Underground Distributor Street project, an underground street project, will also help logistics flow from the harbours through the city centre without the need to disrupt active travel (in the surface) and improve traffic flows.

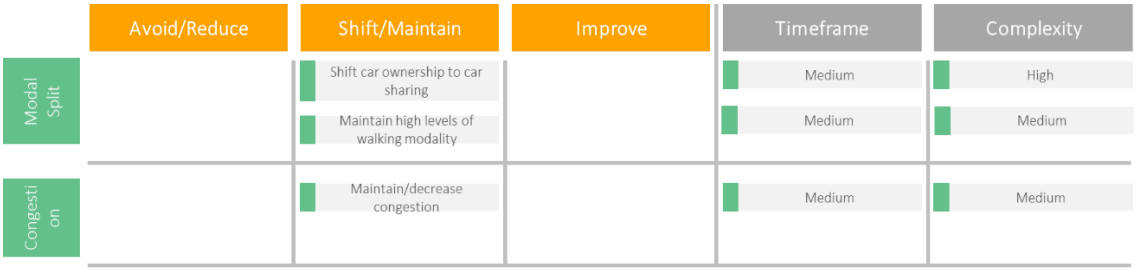
Some aspects to improve are: the promotion of availability of other transport modes. Helsinki is globally known for being an early implementer of MaaS solutions. To incorporate new mobility modes or at least look into the feasibility of it might improve the competitiveness in the market. Adding more EV charging points is key to improve provision but also reduce the environmental impacts of transport. Finally, a more holistic approach to data gathering to include other modes of transport than the common ones might benefit the uptake of sustainable modes and further reduce the use of private cars.

3.3. Transport demand

Modal split in Helsinki is quite good overall, with 39% of trips done by foot, followed by own cars (22%), metro (13%), bus (12%) and bicycle (9%). Rail trips account for only 3% of all trips and taxi trips for only 1%. Congestion is 19% annually. This represents a decrease of 1% from 2018 (20%). As in other cities, the inner city has a higher rate of congestion (21%) than in highways (14%). Annually, Helsinkians spend an extra 82 hours driving in rush hour.

Recommended actions

Figure 4: Transport demand: Recommended interventions



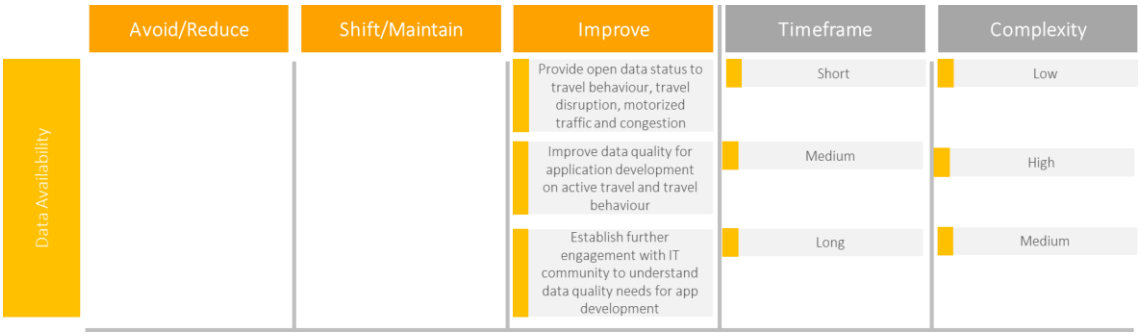
The city scored 4 in each section, coming very close to the threshold to get maximum points. Therefore the recommendations around this indicator as minimum and encourage the city to continue with their approach of reducing congestion and keep reducing car trips, which for the projects seen in the literature review it seems the city is on track to keep improving the transport demand.

3.4. Data

Helsinki provides open data for most of the areas assessed in UMAM. This is one of the reasons why Helsinki is usually considered the capital of MaaS, which relies heavily on data availability. However, the data environment of the city could benefit from readily available data for applications to become open data. This might prevent for smaller mobility actors to come to play in the market.

Recommended actions

Figure 5: Data: Recommended interventions



In order to improve the UMAM Data score, the city could improve the availability of open data for travel behaviour for transport insights, real time disruption, congestion and motorised traffic (will help mobility users to plan better their journeys and reduce congestion),

Regarding the provision of data for application development, while data on travel behaviour and socioeconomics could improve the overall quality of data, the provision of data on active travel should be prioritised, specially considering the high percentage of trips by these means.

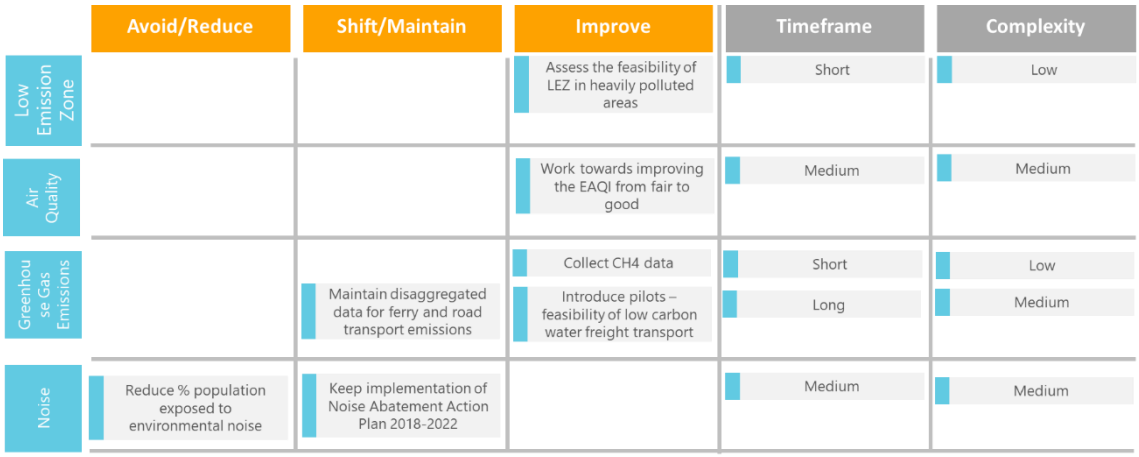
Engagement with mobility stakeholders could also be improved to improve the data score. The effort could be put into engaging with the transport and mobility actors to improve data collection frequency and understand the application needs in order to improve data supply quality. The forward looking mobility environment in Helsinki could be used for multi stakeholder consultation and engagement on this topic.

3.5. Environmental aspects

The city of Helsinki has no Low Emissions Zones and therefore the city scored low in this dimension. However, following a literature review of the city programmes[8], it is clear that the city is achieving a good level of environment protection for its population including climate action, air protection, noise prevention, water protection, nature conservation and procurement and materials efficiency programmes[9].

Recommended actions

Figure 6: Environmental aspects: Recommended interventions



The recommendation on the feasibility of LEZ should also assess whether the current projects and actions plans are enough for the city, if they can achieve the same outcomes and have a good value for money. It might be the case that Helsinki's reality and actions is a new paradigm to tackle pollution in city centres.

It is also recommended to improve the European Air Quality Index, to collect NO2 data and introduce pilots for low emission ferry's (that cause around half of the NO2 emissions). The introduction of the Noise Abatement Action Plan goes into the right direction to tackle noise issues and reducing the percentage of population affected by noise.

[8] https://www.hel.fi/kaupunkiymparisto/en/publications-and-materials/
[9] https://www.hel.fi/helsinki/en/housing/environmental/programmes/air/

3.6. Social aspects

A single bus ticket in Helsinki costs 2.8 euros and a monthly pass around 140 euros for the most expensive type of pass available [10]. Considering the average income [11], Helsinkians spend less than 5% of their income in transport, this goes up to 11% when considering the minimum salary. The city reports that all public transport stations offer assistance equipment and accessibility features for people with disabilities and road mortality is super low at 0.9% per year.

The city has not reported the percentage of streets covered by traffic calming zones. However, the literature review found that the city has implemented traffic calming measures[12]. In 50 years the city has reduced speed limits by 20 km/h.

Recommended actions

Figure 7: Social aspects: Recommended interventions

It is recommended to recollect and document traffic calming measures available in the city. This could include the assessment of needs for communication to citizens. These recommendations could prove beneficial as they can include the monitoring of such measures and understand whether they are being effective. It is also recommended to maintain traffic safety measures and continue with the good job the city has been doing in keeping accidents low.

[10] https://www.hsl.fi/en/tickets-and-fares
[11] https://www.averagesalarysurvey.com/helsinki-finland
[12] https://www.hel.fi/helsinki/en/maps-and-transport/streets-traffic/safety/