TEACHING MATERIAL GUIDANCE

1. Title of the material

New Mobility Options and Urban Mobility Challenges and Opportunities for Transport Planning and Modelling

https://h2020-momentum.eu/wp-content/uploads/2020/01/MOMENTUM-D2.1-New-Mobility-Options-and-Urban-Mobility.pdf

2. Which section of the SUMP it is relevant to?

This document provides an overview of the concepts that have to be taken into account to interpret and implement the enhancements that policy-makers require from transport modelling and simulation techniques to actually consider emerging mobility solutions in urban mobility planning processes. This framework is built upon a combination of a literature review and a stakeholder consultation process articulated through a series of workshops and a Delphi poll. The review of the existing literature provides a deep description of recent disruptive changes experienced by urban transport and the related policy measures, as well as an updated state-of-the-art. of the transport planning tools and techniques which covers transport data sources, models and planning support tools. This, together with the consultation with transport practitioners, paves the way for an identification of the main challenges and opportunities for sustainable urban mobility planning that accompany emerging mobility options. Additionally, a set of alternative futures in relation to the evolution of these innovations are explored through a series of scenarios. The impacts of new mobility solutions on cities, and more precisely, on transport planning tools and techniques, are assessed in order to identify the range of all possible future requirements that transport models and decision support tools will be expected to satisfy. Finally, by analysing the role of these tools in current urban mobility planning cycles, we identify additional gaps that any enhancement effort has to take into account for making a meaningful contribution to sustainable mobility. This material can be used in Measure Planning 7.1-9.1 and Manage Implementation 10.1-10.2.

3. Problem approached and content overview

The objective of this document is to set up a **conceptual framework** for the research activities that are conducted in the MOMENTUM project. The main elements that are focused on in this document are:

• review of the recent disruptive changes in urban transport caused by new transport technologies and policy strategies;
• identification of the challenges and opportunities for sustainable urban mobility planning brought about by mobility innovations and policy measures;
• delivery of future scenarios relevant for mobility planning in Europe and the evolution of emerging mobility solutions;
• evaluation of the current capabilities and the applicability of transport planning tools and techniques for managing new transport options;

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• exploration of the role of transport planning tools and techniques in the urban policy cycle in relation to the requirements that emerging mobility options imply for such tools and techniques.

The issues raised are well documented with a very rich bibliography as well as with examples of specific cities that have introduced a solution within the SUMP in the past. Detailed examples indicate either the problems that arose during the operation of a solution, or describe how the introduction of new solutions into the transport system was sanctioned to avoid additional problems.

The report is a rich source of information on new and innovative transport services being introduced in cities. It explains the differences between common concepts and innovations. As a result, the material is a found of knowledge about possible measures under the SUMP. For example, the difference between Ridehailing, Carpooling, Carsharing and Taxi was explained.

Table 2 – Key differentiating aspects of ridehailing versus similar mobility solutions

Ridehailing	Carpooling	Carsharing	Taxi
A **chauffeur** drives its **own vehicle**.	A person demanding that trip drives their own vehicle.	The user drives the vehicle from the operator's fleet.	A chauffeur drives a registered taxi vehicle.
The trip is **only performed if requested on-demand** by a mobile application.	The trip is performed in any case by the driver, additional passengers can request in advance.	The trip is only performed if the user unlocks and uses a vehicle.	The trip is only performed if requested through taxi service procedures.

The potential and threats of this type of solution as well as further specific examples from various cities of the world were indicated.

The next part focused on the trends of changing legal measures, as before, starting from their characteristics, through opportunities to potential dangers, and ending with real examples.

Then Urban mobility futures are presented in the same way.

This Section provides a series of exploratory scenarios. This allows MOMENTUM to come up with the envelope of all plausible adaptations and improvements that transport planning tools and techniques will require in the following decades.

Two groups of scenarios were analyzed:

Exogeneous scenarios, which propose different alternative futures for a series of relevant exogenous variables (e.g. demographics, economics, etc.) to reflect upon the evolution of new mobility solutions in relation to those variables (e.g. for a given socio-demographic situation, what is the expected market penetration of vehicle automation?).

Mobility-related scenarios, which set up a range of different possible futures for emerging mobility solutions to reflect upon the impacts in transport planning tools and techniques depending on the level of implementation of such solutions (e.g. for a given modal share of the emerging mobility solutions, which improvements in transport models are needed?).

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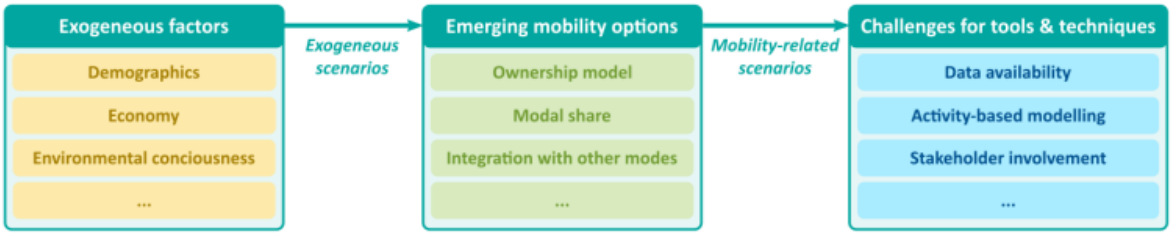
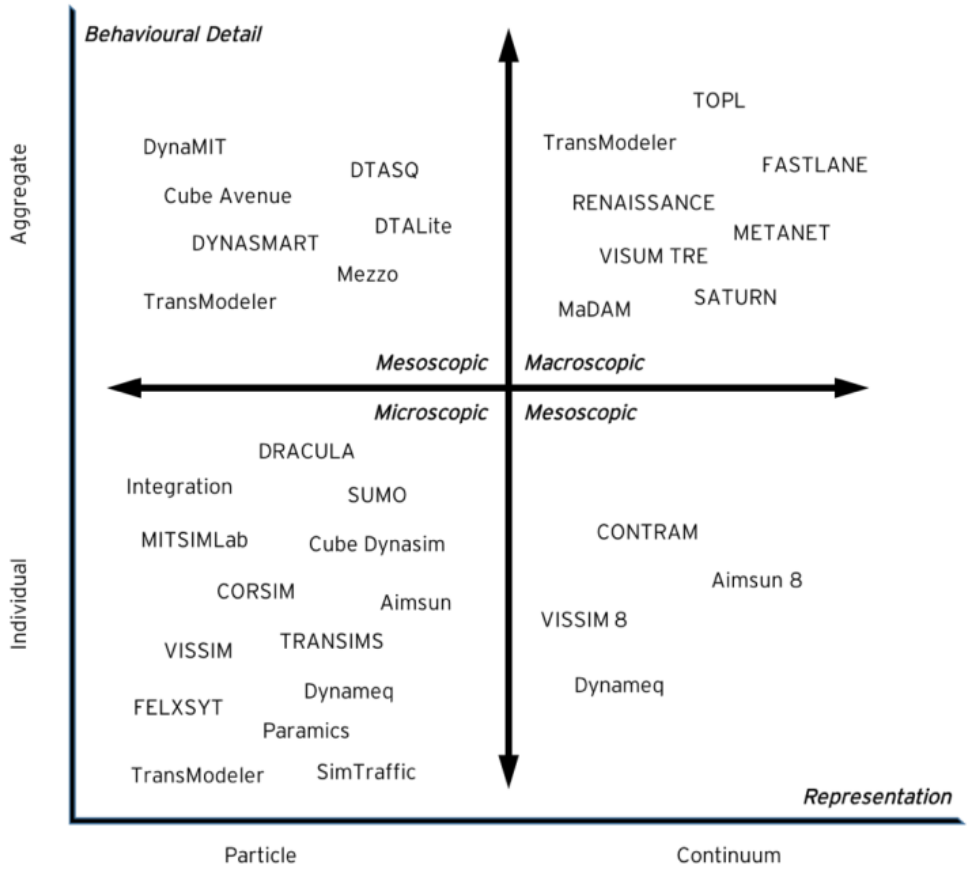


Each scenario is accurately described, analyzed and the expected results are graphically depicted, which makes it easy to draw constructive conclusions.

The fourth chapter focuses on present and future of transport data sources, focusing much attention on new technologies and their potential to be used in mobility management.

The fifth chapter, entitled "Present and future of transport modeling and decision support tools" describes the tools supporting transport management. An example is given below.



This chapter is rich in sources of knowledge on various approaches to transport modeling.

The last chapter focuses on "Integration of transport planning tools in the policy cycle"

This is another very content-rich chapter, which, among other things, presents the creation of a multi-level model of the transport system for the SUMP needs.

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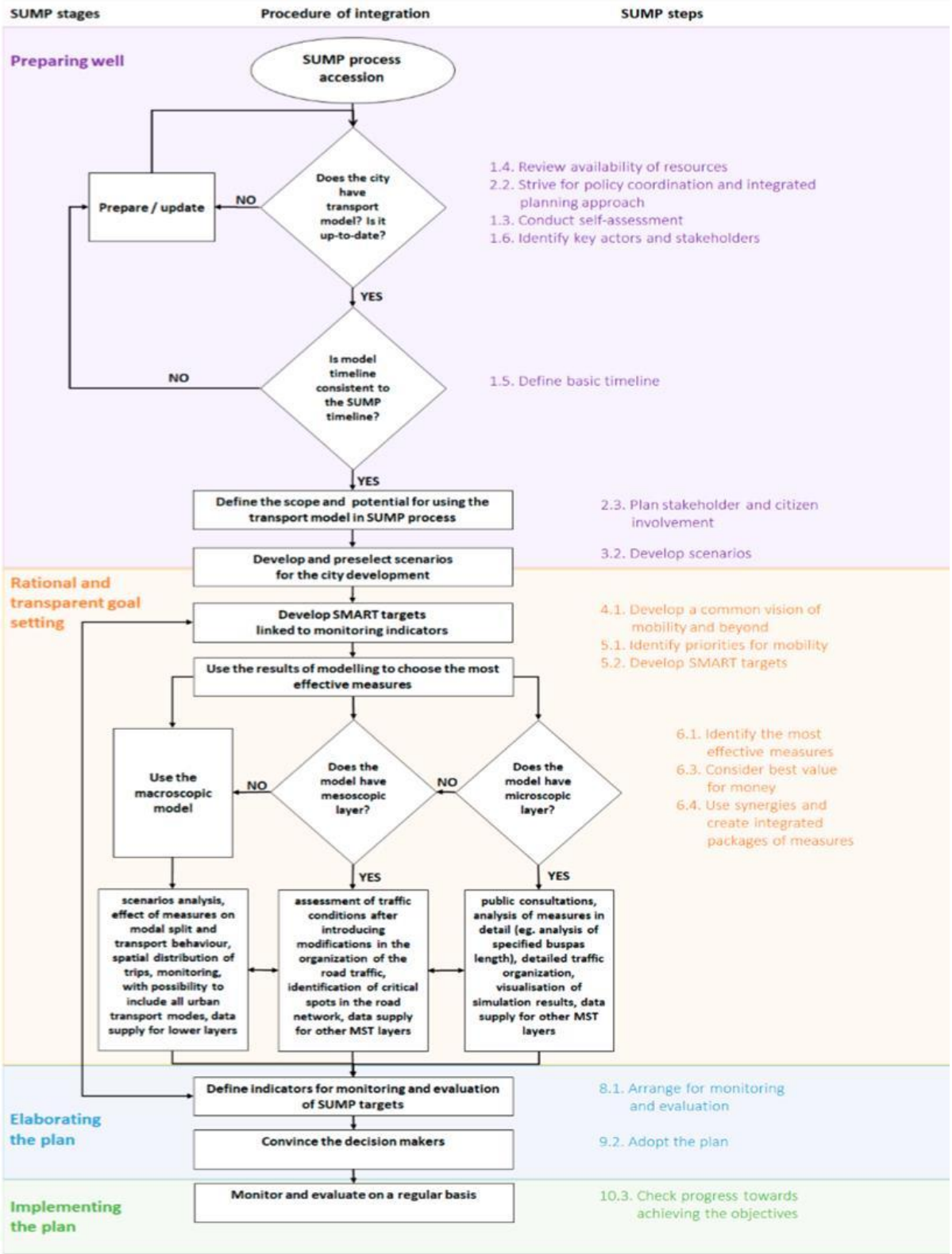

4. Who could be interested in this material?

Students and people creating SUMP for the city. The material is rich in examples and evaluation of existing solutions, taking into account their advantages and disadvantages. Many issues have been raised and the material is very valuable.

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5. What is worth mentioning as an innovative factor for the reader?

The report is rich in theoretical knowledge due to a very rich bibliography, as well as practical, due to examples from many cities. The material broadens the knowledge about new, not yet well-recognized technologies in transport and new management methods.

6. Limitations

It is difficult to point out any limitations as the material is very rich. Due to the length of 132 pages, it does not solve all issues, but it is very valuable.

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