



TOPIC GUIDE

SUSTAINABLE URBAN MOBILITY PLANNING IN METROPOLITAN REGIONS

Sustainable urban mobility planning and governance
models in EU metropolitan regions



Imprint

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Executive summary

In Europe, growing urbanisation has often led to the physical expansion of cities, where urban cores are now surrounded by commuter belts with which they share infrastructure, housing and workplaces, creating new functional urban areas that go beyond the traditional administrative boundaries.

Among the different types of functional urban areas, metropolitan regions emerge for their economic attractiveness, the huge commuter flows, their complex and multi-modal urban transport systems, and for typically being transport nodes of European and national importance.

Governance schemes and planning processes at metropolitan scale vary from one specific context to another making it impossible to have a one-size-fits-all solution. Nevertheless, common principles and lessons learned can still be drawn for the benefit of all metropolitan regions, while specific examples provide concrete support for all contexts alike.

This guide offers support for sustainable urban mobility planning at metropolitan scale by providing a common definition, examples and lessons learned and recommendations on different aspects and steps of the planning process, taking into account different institutional context conditions.

Guide to the reader

This document provides guidance on a specific topic related to Sustainable Urban Mobility Planning (SUMP). It is based on the concept of SUMP, as outlined by the European Commission's Urban Mobility Package¹ and described in detail in the European SUMP Guidelines (second edition)².

Sustainable Urban Mobility Planning is a strategic and integrated approach for dealing with the complexity of urban transport. Its core goal is to improve accessibility and quality of life by achieving a shift towards sustainable mobility. SUMP advocates for fact-based decision making guided by a long-term vision for sustainable mobility. As key components, this requires a thorough assessment of the current situation and future trends, a widely supported common vision with strategic objectives, and an integrated set of regulatory, promotional, financial, technical and infrastructure measures to deliver the objectives – whose implementation should be accompanied by reliable monitoring and evaluation. In contrast to traditional planning approaches, SUMP places particular emphasis on the involvement of citizens and stakeholders, the coordination of policies between sectors (transport, land use, environment, economic development, social policy, health, safety, energy, etc.), and a broad cooperation across different layers of government and with private actors.

This document is part of a compendium of guides and briefings that complement the newly updated second edition of the SUMP Guidelines. They elaborate difficult planning aspects in more detail, provide guidance for

specific contexts, or focus on important policy fields. Two types of documents exist: While 'Topic Guides' provide comprehensive planning recommendations on established topics, 'Practitioner Briefings' are less elaborate documents addressing emerging topics with a higher level of uncertainty.

Guides and briefings on how to address the following topics in a SUMP process are published together with the second edition of the SUMP Guidelines in 2019:

- **Planning process:** Participation; Monitoring and evaluation; Institutional cooperation; Measure selection; Action planning; Funding and financing; Procurement.
- **Contexts:** Metropolitan regions; Polycentric regions; Smaller cities; National support.
- **Policy fields:** Safety; Health; Energy (SECAPs); Logistics; Walking; Cycling; Parking; Shared mobility; Mobility as a Service; Intelligent Transport Systems; Electrification; Access regulation; Automation.

They are part of a growing knowledge base that will be regularly updated with new guidance. All the latest documents can always be found in the 'Mobility Plans' section of the European Commission's urban mobility portal *Eltis* (www.eltis.org).

¹ Annex 1 of COM(2013) 91

² Rupprecht Consult - Forschung & Beratung GmbH (editor), 2019 Guidelines for Developing and Implementing a Sustainable Urban Mobility Plan, Second Edition.

1. Introduction

In Europe, growing urbanisation has often led to the physical expansion of cities, where urban cores are now surrounded by commuter belts with which they share infrastructure, housing and workplaces, creating new functional urban areas that go beyond the traditional administrative boundaries.

Among the different types of functional urban areas, metropolitan regions emerge for their economic attractiveness, huge commuter flows, their complex and multi-modal urban transport systems and for typically being transport nodes of European and national importance.

As metropolitan regions have flourished in the past decades, they increasingly face new challenges of working across physical, sectoral and organisational boundaries.

Some of the complexity typical of metropolitan regions, compared to other functional urban areas, is the geographical variety (urban and rural) and high number of municipalities now comprised in their territories.

Moreover, metropolitan regions in Europe are diverse, with some having a more institutionalised set-up and others where the cooperation among different stakeholders happens on a voluntary basis.

Therefore, planning mobility at metropolitan scale requires specific guidance and concrete examples that can inspire metropolitan regions around Europe to overcome the specific governance, funding or cooperation related barriers they face.

Defining metropolitan regions is the first fundamental step in the identification of the challenges and barriers that they are confronted with. These guidelines will then look at how the SUMP principles and cycle relate to the specific context of metropolitan regions and will complement them with a wide range of examples providing guidance on specific aspects or steps of the SUMP process. The last chapter will present lessons learned and recommendations to develop a SUMP at metropolitan level. In conclusion, the full, in-depth version of the examples mentioned in this guide are gathered in the Annex to this guide.

1.1 Definition and characteristics of metropolitan regions

The OECD (2013), in collaboration with the EU, has developed a harmonized definition of urban areas which categorises functional urban areas of different sizes beyond the administrative boundaries. Eurostat (2018) endorsed and complemented this definition in light of the European context in the most recent 'Methodological manual on territorial typologies'.

The combined OECD/EU/Eurostat classification of urban areas uses population density as a starting point to identify urban cores, but it also considers commuter flows to identify the areas whose labour market is interconnected with the cores.

According to the methodology, an urban core consists of a population cluster with a density of at least 1,500 inhabitants per km². A municipality is part of the urban core if at least 50% of its population live in the cluster. The methodology then identifies the 'hinterland' as the 'worker catchment area' of the urban labour market, outside the densely inhabited core. All municipalities having at least 15% of their employed residents working in a certain urban core are defined to be part of that urban hinterland as well.

Based on those steps, Eurostat defines metropolitan regions as functional urban areas with a population of at least 250,000 inhabitants. Each metropolitan region is named after the principal functional urban area within its boundaries. Capital city metropolitan regions are those metropolitan regions that incorporate the capital of a given country.

This topic guide builds on the OECD/EU and Eurostat definitions of functional areas to target metropolitan regions classified as contiguous, high density and built-up urban areas with at least 250,000 inhabitants.

It is useful to underline that some urban areas, on the contrary, are developing in a polycentric way, with highly densely inhabited cores that are physically separated, but economically integrated. For guidance on how to address the specificities of polycentric regions, please refer also to the Poly-SUMP methodology guidelines. (Poly-SUMP, 2014)

A dedicated Topic guide for small and medium-sized cities will be available at the end of 2019 focussing on their specific needs and features relating to sustainable urban mobility planning.

<https://www.eltis.org/guidelines/second-edition-sump-guidelines>

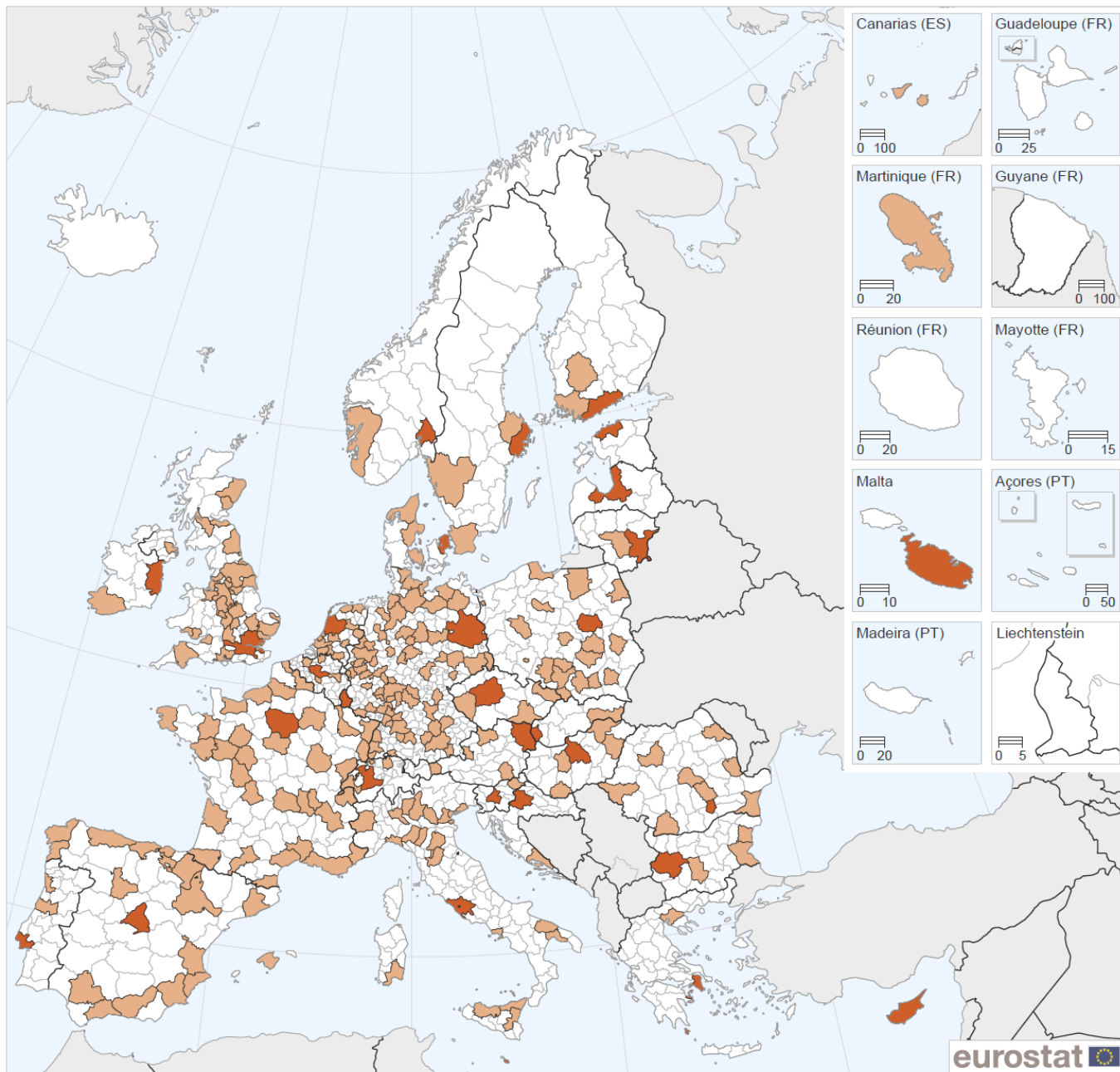
1.2 The challenges in metropolitan regions: governance, funding and cooperation

Based on the above-mentioned definition, there are 28 capital city metropolitan regions and an additional 249 other metropolitan regions in the EU-28. According to the European Commission (2014), the totality of European metropolitan regions accounts for 59% of the EU population, 62% of EU employment and 67% of EU GDP.

Therefore, daily commuter flows towards the metropolitan core are increasingly important: for instance, 150,000 people enter Prague (Czech Republic) every day while 370,000 vehicles enter the city of Lisbon (Portugal) every day.

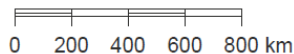
Metropolitan regions are also typically transport nodes of European and national importance and they often have a complex, multi-modal urban transport system consisting of regional rail services; trams and/or metros; buses; cycling and walking as well as individual motorised transport infrastructure (Catch-MR, 2012).

Responsibilities for transport and mobility in metropolitan regions are shared and distributed between national, regional, local and sub-local (district) governments (and between different departments at each level). Effective multi-level governance and partnership approaches are therefore particularly important in metropolitan regions where the needs for regional and local mobility must be reconciled with the needs for effective long-distance mobility.



- Capital city metropolitan regions
- Other metropolitan regions
- Non-metropolitan regions

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat - GISCO, 09/2018



Note: based on population grid from 2011 and NUTS 2016.
Figure 1: EU-28 Metropolitan regions. Source: Eurostat

1.2.1 Governance

In Europe, metropolitan regions are not typically single political entities, but functional areas going across regional and local administrative boundaries. Those metropolitan regions often comprise a high number of administrative entities (55 in the case of Bologna, Italy, 18 in the case of Lisbon) with both rural and urban ecosystems, thus with specific features and needs.

According to the OECD (2015), there are four non-rigid and non-exclusive typologies of metropolitan governance:

- the informal/soft coordination;
- the inter-municipal structures;
- the supra-municipal authorities;
- the special status metropolitan cities.



informal/soft coordination

In the **informal and soft types of coordination**, all municipalities have the same importance and share support in an informal way.

This is the case, for example, of the Region of Central Macedonia in Greece (see Box 1) or Prague in the Czech Republic.

Since 2015, the Prague Sustainable Mobility Plan has been under development for the city and its metropolitan region, which embraces Prague’s neighbouring municipalities in Central Bohemia. The SUMP process required setting-up close strategic cooperation between Prague and the Central Bohemian region, representing the needs of the municipalities in the commuting area around Prague. The working process is led by an external project manager who coordinates the collaboration of the city organisations and companies involved in the process.

The working group consists of representatives from the Prague Institute of Planning and Development (IPR Prague), an organisation funded by Prague that represents the city in spatial, strategical and infrastructure planning matters; Prague Municipality; Prague’s integrated transport organiser; the technical roads administration of the City of Prague; Prague’s public transit company; Prague’s ICT infrastructure Operator; and members of the Central-Bohemian region

Box 1: Soft cooperation scheme for SUMP development at metropolitan level³

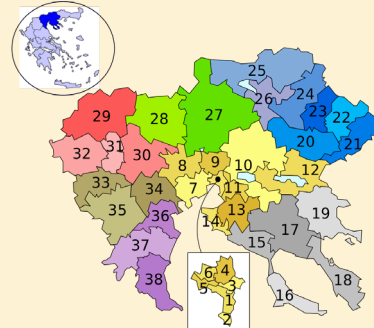


Figure 2: Region of Central Macedonia. Source: CERTH - HIT

The Region of Central Macedonia (RCM) as well as the Metropolitan Unit of Thessaloniki, which is a dedicated institution of the RCM, do not have a mandate to coordinate or supervise local SUMP, nor to implement a metropolitan one. However, the municipalities belonging to the metropolitan region of Thessaloniki are currently developing local SUMP and are now facing several difficulties. In order to support them, RCM set-up a soft coordination structure in the form of a Competence Centre and an Observatory for Sustainable Mobility. The Competence Centre provides technical support concerning SUMP development, implementation and monitoring, and acts as a communication channel between the stakeholders for exchanging experiences and good practices. The aim of the Observatory is to ensure the complementarity of the local plans, to collect and analyse data that are being gathered at local level, and to develop accessible and up-to-date databases, including monitoring indicators, in order to support the implementation of the metropolitan mobility planning as well as the regional strategy for sustainable mobility. The independent Directorate for Innovation and Entrepreneurship Support of RCM coordinates both structures in close cooperation with the Hellenic Institute of Transport.

with the Central Bohemian integrated transport organiser.

The Central Bohemian region and the Central Bohemian integrated transport organiser act on the Central Bohemian region and the Central Bohemian integrated transport organiser act on behalf of the municipalities in the work catchment area around Prague from which they

³ For the in-depth good practice example, please consult the Good practice collection Annex.

collect strategic inputs and specific needs, especially concerning the commuter flows to and from Prague.⁴



inter-municipal structures

The **inter-municipal governance structures** are official entities where the participating municipalities, and sometimes other levels of government and sectoral organisations, share costs and responsibilities.

This is the case, for instance, of the Ljubljana urban region (Slovenia), the Oslo metropolitan region (Norway) and the metropolitan area of Lisbon.

The metropolitan area of Lisbon (AML) is based on an inter-municipal governance system that comprises 18 municipalities and almost 3 million inhabitants. According to regulation no. 75/2013, the metropolitan areas in Portugal participate in the preparation of plans and programmes at metropolitan scale; ensure the coherence of the actions between the municipalities and the services of the central administration in the area of territorial planning, mobility and transport; exercise the competencies transferred by the central administration and the joint exercise of the powers delegated by the municipalities of which these metropolitan areas are made up. Since 2015⁵, the Metropolitan Area of Lisbon is also in charge of the definition of the strategic objectives of the mobility system, the planning, organisation, operation, allocation, supervision, investment, financing, dissemination and development of transport by road, river, rail and others.

The above mentioned tasks are carried out through defined organs: the metropolitan council, the deliberative body constituted by the mayors of the 18 municipalities and presided over by the mayor of Lisbon; the executive commission, the executive body consisting of a first secretary and four metropolitan secretaries designated by the municipal assemblies at the proposal of the council; and the strategic council for metropolitan development, a body that supports the decision-making process of the other organs of the metropolitan area and is consulted before the SUMP approval. It is made up of representatives of institutions, entities and organisations with relevance and participation in the field of metropolitan interests (AML, 2019). Thematic working groups were also created by the metropolitan council and the executive commission as non-formal organs to support the work on specific areas. Those are, for example, the mobility and transport working group, the land use planning working group, the financial funds

working group, which are composed of the councillors from the 18 municipalities in the relevant thematic area. They usually meet once a month.

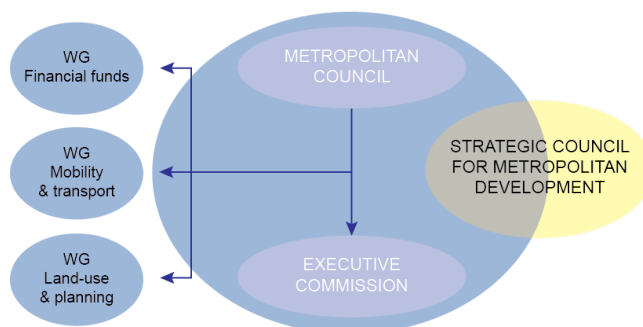


Figure 3: Metropolitan governance system in Lisbon. Source: EUROCI-TIES



supra-municipal authorities

The **supra-municipal authorities** are ad-hoc structures above municipalities expressly created for the purpose of addressing transport, territorial planning or other challenges at the most relevant and effective scale.

They can have the status of metropolitan governments with either directly or indirectly elected organs, or metropolitan agencies that have competence for managing or planning one sole service, for example public transport. (Tomas, 2015)

The Verband Region Stuttgart in Germany and the Greater London Authority in the UK are two examples of directly elected metropolitan authorities in Europe: in the first case 86 members of the assembly are elected every five years, whereas in the case of London voters elect the mayor and 25 councillors every four years. (Tomas, 2015)

Where direct elections exist, the metropolitan authority gains in terms of visibility, as the candidates put forward electoral programmes and campaigns at metropolitan level that raise awareness about the institution and its role. Also, when this formula exists, the mandate is entirely linked to the performance in the metropolitan institution. Direct elections are often the case in newly created metropolitan authorities.

⁴ Further representation of the agglomeration around Prague was ensured through dedicated workshops with representatives from the 13 bigger districts in the Central Bohemian region, which also acted on behalf of the smaller municipalities in their districts.

⁵ Law no. 52/2015 of 9 June

INTRODUCTION

However, direct elections in Stuttgart and London have shown a declining trend in participation rates over the years, with Stuttgart’s rate hovering around a 50% turnout, and only 40% in the case of London (Tomas, 2015).

Nevertheless, the indirect election of the metropolitan authority is certainly the most frequent type of

supra-municipal governance in Europe, where metropolitan entities are not directly elected by citizens, but composed of representatives from the different administrative bodies that form them and linked to the municipal mandate.

The Greater Manchester Combined Authority in the UK (see Box 2) is a hybrid case of direct and indirect election.

Box 2: Creation of a transport authority to support transport delivery across the metropolitan region⁶



Figure 4: Traffic for Greater Manchester. Source: TfGM

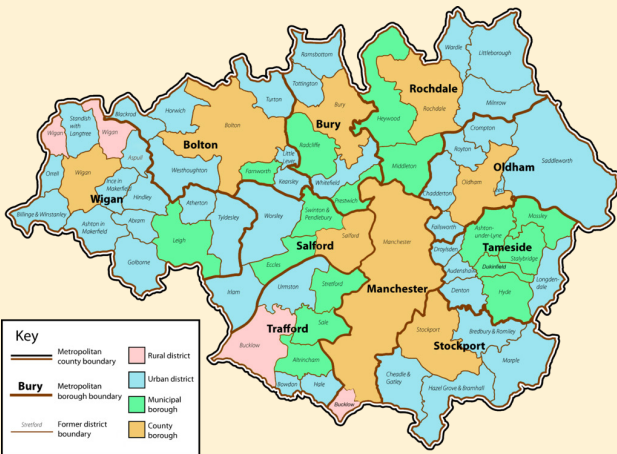


Figure 5: Greater Manchester metropolitan region. Source: Wikimedia commons

The Greater Manchester Combined Authority (GMCA) is the governing body of Greater Manchester, which consists of ten indirectly elected members (councillors from the constituent metropolitan districts of Greater Manchester) plus a directly elected mayor of Greater Manchester. Transport for Greater Manchester (TfGM) is a not-for-profit organisation that delivers the GMCA transport policies. It co-ordinates transport networks across the region, decides where to invest transport funding, and owns and runs the Metrolink tram service. It also manages walking and cycling infrastructure investment and promotion, the ownership of the Metrolink network, and the strategic planning for the key route network. Moreover, it subsidises the socially necessary bus routes and it coordinates the city region requirements to secure national funding for investment. In 2011, a reformation of local government arrangements in Greater Manchester granted the city region more powers and enabled a rebranding and reallocation of responsibilities, unifying governance over transport policy in the ten districts under one body. Alongside TfGM, the TfGM Committee comprising representatives from the GMCA and the ten local districts in Greater Manchester was established, which consists of 33 councillors. The Committee is responsible for advising the GMCA on transport policy, recommending how much money should be spent on supporting public transport and monitoring the quality and performance of transport services. TfGM carries out the decisions of the GMCA and the committee. The formation of TfGM played a vital role in contributing to the development of a SUMP at metropolitan level and allowed the implementation of a collaborative platform where representatives from the ten district councils meet on a monthly basis to discuss any issues.

The French metropolitan authorities, Grand Nancy Metropole and the European Metropolis of Lille (MEL), for instance, or the metropolitan city of Bologna in Italy are examples of supra-municipal authorities with indirect election systems.

In Italy, the status of metropolitan city was only been introduced in 2014 by a national law⁷ that identified 10 metropolitan cities whose organs are: the metropolitan mayor, who represents the institution, convenes and presides over the metropolitan council and the metropolitan conference and oversees the execution of the acts; the metropolitan council, which is the governing

and control body, proposes the statutes and amendments to the conference, approves regulations, plans and programs; approves and adopts any other act submitted to it by the metropolitan mayor.

Finally, the metropolitan conference is the collegial body composed of all the mayors of the municipalities included in the metropolitan city, with proposing,

⁶ For the in-depth good practice example, please consult the 'Good practice collection Annex'.

⁷ Law n.56/2014

consultative and deliberative powers. Since 2018, the Italian ministry of infrastructures requires that a SUMP covers the whole metropolitan region.

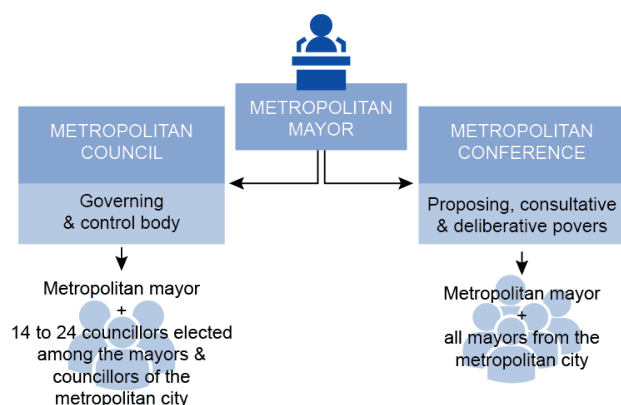


Figure 6: Example of metropolitan governance structure in Bologna.
Source: EUROCITIES



special status
metropolitan cities

Finally, **the special status of metropolitan cities** is given to international megalopolises with big populations that are compared to the next upper level of government and thus have broader competencies. This specific type of metropolitan governance will not be dealt in this document as,

according to the literature (Pirlone et al., 2017), examples of this kind do not exist in Europe.

1.2.2 Funding

According to the OECD (2015), only a minority of metropolitan regions has regulatory power and has limited levies and its own taxes to count on. Those either come as bottom-up and/or top-down transfers from other levels of government. As a matter of fact, funding is almost never raised or allocated at metropolitan level, but rather at the level of local authorities or regional bodies. When funding exists, it is often in the form of allocation from the central government, which limits the autonomy of the metropolitan level. (EMA, 2015).


1.2.3 Cooperation


In a broader sense, increasing responsibilities at metropolitan scale might meet the resistance of other governance levels (municipalities, provinces, regions or the central government) that are reluctant to transfer part of their responsibilities and competencies to another entity. Political acceptance from the higher levels of government is crucial as those are the ones determining the regulatory framework in which metropolitan regions can operate. For example, metropolitan areas might be given limited powers (of management, implementation and planning), and in very specific fields.

Thus, the different metropolitan structures might be confronted with a lack of political influence and leadership towards other institutions, lacking recognition of regional geographical scope. In addition, the diverse political backgrounds of the entities operating in a given metropolitan region can translate into resistance to cooperate for the realisation of coordinated plans, including the realisation or integration of mobility measures.

1.3 Comparison of metropolitan governance models in the development of SUMP

Based on the above classification of metropolitan governance models, this chapter explores the strengths, weaknesses, roles and needs for improvement of the different types of governance in relation to SUMP development.

	Informal and soft coordination
Advantages	<p>Encourages communication and exchange on common challenges. It provides a platform for mutual exchange of information, accessible to smaller municipalities as well that can benefit from higher expertise and know-how. It is a useful instrument to coordinate initiatives coming from the local level. There are low barriers to implementation, because it involves no binding commitments, no transfer of responsibilities, competencies or budget.</p>
Institutional weaknesses and barriers for SUMP development	<p>Fragmentation of responsibilities among the bodies responsible for the planning and the implementation of the policies: responsibilities are scattered across the departments of the various administrative levels (local, regional and national). The lack of a single planning authority implies a lack of mandatory influence and binding decisions. Reaching an agreement requires time as it might entail competition among different municipalities.</p>
Role in SUMP development	<p>The leading authority offers primarily coordination and a platform for cooperation and technical assistance to the local (municipal) SUMP, to ensure complementarity between them and also their consistency with the metropolitan or regional strategy. The formal authority for SUMP development is retained by the municipalities, the leading authority uses the local outputs to develop a metropolitan SUMP.</p>
Needs for enhancing SUMP development	<ul style="list-style-type: none"> • Building trust among concerned actors; • Funding mechanisms to further encourage cooperative projects; • Methodologies/tools for achieving effective stakeholder engagement; • Knowledge on how to integrate local planning in a metropolitan SUMP; • Common set of indicators for monitoring urban mobility at metropolitan level; • Creation of an internal body, responsible for the metropolitan SUMP.

	Inter-municipal structures
Advantages	<p>It functions as a common committee for cooperation and communication which translates the interests of different municipalities into one single external voice. The strong cooperation and the common voice help the municipalities have a better connection with the higher levels of government. Because different departments from different organisations are involved, integrated approaches are easier.</p>
Institutional weaknesses and barriers for SUMP development	<p>Responsibilities for the planning and the implementation of the policies are more clearly allocated, but continuous consensus is required to ensure cooperation. There are no legal instruments to force municipalities to align. The planning process is more likely to be subject to external influence.</p>
Role in SUMP development	<p>The SUMP process is steered by a delegated entity, which has competence for SUMP development. There is a clear structure for discussion and planning and a clear mandate for decision making. Inputs come from the municipalities first and then are integrated into a common metropolitan strategy. The inter-municipal structure does not have powers to force the implementation of the planned measures in the participating municipalities.</p>
Needs for enhancing SUMP development	<ul style="list-style-type: none"> • Ensuring cooperation and open dialogue among the participating members; • High degree of negotiation among the different parties involved to get to common, shared positions; • Tools to force/encourage implementation of the agreed measures; • Cooperation for the collection, harmonisation and analysis of data coming from different sources.

	Supra-municipal authorities
Advantages	<p>There is one single planning authority. The legal framework and transparent mandate allow for clear goals, closer control over implementation and compliance with the overall objectives. This approach ensures a close integration of land-use, transport and development strategies across the area in the long term and easier financial leverage.</p>
Institutional weaknesses and barriers for SUMP development	<p>Fostering the joint development (by the metropolitan authority and all the municipalities/districts) of the SUMP in order to ensure that it will meet the local needs might be a challenge. This top-down approach might result in a low identification with the metropolitan region and thus additional attention should be paid to communicating and involving the lower levels of government, especially smaller settlements.</p>
Role in SUMP development	<p>The metropolitan planning authority is responsible for developing the SUMP in close cooperation with the municipalities or districts of the region. It sets the rules and targets for all the concerned municipalities and districts.</p>
Needs for enhancing SUMP development	<ul style="list-style-type: none"> • Close cooperation and consultation with the local stakeholders at all stages of the process; • Continuous communication and exchange with the concerned municipalities/districts.

2. The 8 SUMP principles in the context of metropolitan regions

2.1 Aim of sustainable mobility for the 'functional urban area'

With the growth of the urban population and the consequent geographical expansion of cities, urban areas are confronted with social and economic flows that extend from the urban cores to the suburbs and beyond. Metropolitan regions are confronted with high commuter flows entering the centre every day and are often nodes of long-distance transport and of national importance. A SUMP with a spatial approach that covers the metropolitan functional area can address the needs and expectations of the urban core and its commuter flows, as well as adopt a strategic, long-term and integrated approach on transport and spatial planning for the whole area that would not be possible by developing individual, municipal level SUMPs. Planning for the metropolitan region allows better coordination of the needs of all the administrative units involved and a better collaboration in the implementation of major projects. It ensures a more strategic vision on the needs and development potential of the metropolitan territory. All the examples contained in this guide reflect this principle at metropolitan scale.

2.2 Assessment of current and future performance

A metropolitan SUMP should build on a thorough assessment of the current and future performance of the transport system and land use patterns in the whole metropolitan region. A comprehensive review of the current situation of the urban core and its commuter belt is fundamental to drawing the baseline against which results can be measured. For this purpose, cooperation among all the relevant actors in the metropolitan region should be set up in order to collect valuable data for the whole area (see also section 2.7). Also, suitable indicators should be set in a way to ensure adequate representativeness for the whole metropolitan region. Specific, measurable performance objectives should reflect the reality of the current situation and the ambition of the overall plan and might differ in degree of ambition from the urban core and the towns and villages in the commuting area. The measurable targets that the

plan wants to achieve should be based on realistic assessment of the current scenario.

Common sets of performance indicators, the development of Information and Communication Technologies (ICT) and data observatories under close cooperation between metropolitan and all other relevant authorities can provide all the traffic data needed throughout the SUMP development process, including for the analysis of the mobility situation, the target setting and the progress monitoring.

2.3 Long-term vision as well as a clear implementation plan

The metropolitan SUMP should be based on a long-term strategy for the integrated development of the whole functional area, in terms of mobility and transport, but also in synergy with spatial planning, environmental protection and other metropolitan-wide strategies.

The long-term vision can be translated into intermediate objectives, with intermediate targets, that will help prioritise the different interventions across the whole metropolitan region over a long period of time. The implementation plans for the different time horizons are subordinated to the SUMP and specify clear allocation of responsibilities, resources and a time plan.

2.4 Development of all transport modes in an integrated manner

One of the most important advantages of developing a metropolitan SUMP is the integrated planning of the trips between the different municipalities or districts that belong to the same metropolitan region and exchange thousands or millions of journeys every day. Metropolitan regions are poles of attraction where multiple urban transport systems (regional rail services; trams, metros; buses; cycling and walking; individual motorised transport) come together. The planning of the public transport system, the taxi fare policies, depots and infrastructure, and the regulation and fare policy for the on and off-street parking are some of the issues that should be analysed and examined considering the metropolitan dimension.

2.5 Cooperation across institutional boundaries

Planning for sustainable urban mobility at metropolitan level entails close cooperation among the many entities operating in the metropolitan region, whether there is a formal governing body or not. In the specific context of sustainable urban mobility planning for metropolitan regions, cooperating across institutional boundaries means coordinating the SUMP activities with all the relevant authorities at other levels of government, including the district and municipality levels, where, for example, the measures are implemented, but also with the regional and national levels, with whom the metropolitan region shares ports, train or route systems, for instance. When it comes to a metropolitan SUMP, cooperation across institutional boundaries is crucial throughout all steps of the SUMP cycle, especially in the allocation of actions and responsibilities as well as in the analysis of the funding and financing needs and the corresponding study of the local, regional and national financial frameworks that can facilitate those needed resources.

Cooperating across institutional boundaries also means planning and implementing sustainability in an integrated way, thus with a single guiding development strategy for the whole metropolitan region where all aspects and areas are coordinated in a balanced way (land-use and spatial planning, economic development, social affairs, environment, health, energy, etc.). This approach is reflected in complementary policies and strong cooperation among sectoral department and agencies, as will be explained in the next sections.

2.6 Involvement of citizens and relevant stakeholders

The participatory approach remains a central feature of a Sustainable Urban Mobility Plan at metropolitan level, where a high level of involvement should be sought throughout the metropolitan territory. As the following chapters will show, in order to meet the basic needs of people and businesses, a metropolitan SUMP should follow a transparent and participatory approach that brings citizens and stakeholders on board reflecting the diversity of the transport users and stakeholders across the whole metropolitan region from the outset throughout the development and implementation of the plan. Public involvement can take many forms depending on the needs and different phases of the SUMP cycle,

from informing to engaging and even empowering the participants. The adequate involvement of citizens and relevant stakeholders helps address problems from a metropolitan perspective and build mutual trust among the different actors involved. Moreover, the early involvement of stakeholders and citizens can foster ownership and thus minimize risks of non-acceptance.

2.7 Arrangements for monitoring and evaluation

The success of a Sustainable Urban Mobility Plan at metropolitan level is rooted in a comprehensive pool of mobility data that covers the whole territory and is shared among all the relevant actors operating in the area. Depending on the existing governance structure, and especially where data is not centralised, building cooperation schemes with data owners from the whole area is crucial to analyse the mobility situation (see also section 2.2) and for the following monitoring phase, as will be explained in further detail in the next chapters. As a matter of fact, progress towards the objectives of the plan shall be assessed regularly and shall be based on a common indicator framework that ensures the standardisation of the mobility data collected throughout the territory. Regular data collection and monitoring helps enhance metropolitan planning and prioritise the infrastructure, measures and policies that should be funded. The ongoing monitoring of the implementation of the SUMP measures then informs the adaptation of the actions and targets, when needed, and allows those involved to learn from experience. Data collected can be communicated to citizens and stakeholders and it can ultimately be used to increase the relevance of the SUMP measures for targeted audiences.

2.8 Quality assurance

The elaboration of a single SUMP at metropolitan level ensures a harmonised approach across the whole area. A set of minimal qualitative requirements can be set and assessed by the different stakeholders involved in the process or can be delegated to external reviewers. In some countries this role is facilitated by higher levels of government, i.e. regions or national ministries. For example, all municipalities in the metropolitan area of Barcelona, Spain, with over 20,000 inhabitants, are required to develop a SUMP. Quality assurance and approval of SUMPs is the responsibility of the ATM (Management authority for the Barcelona metropolitan region) [SUMPs-Up, 2018].

3. Sustainable urban mobility planning steps in metropolitan regions



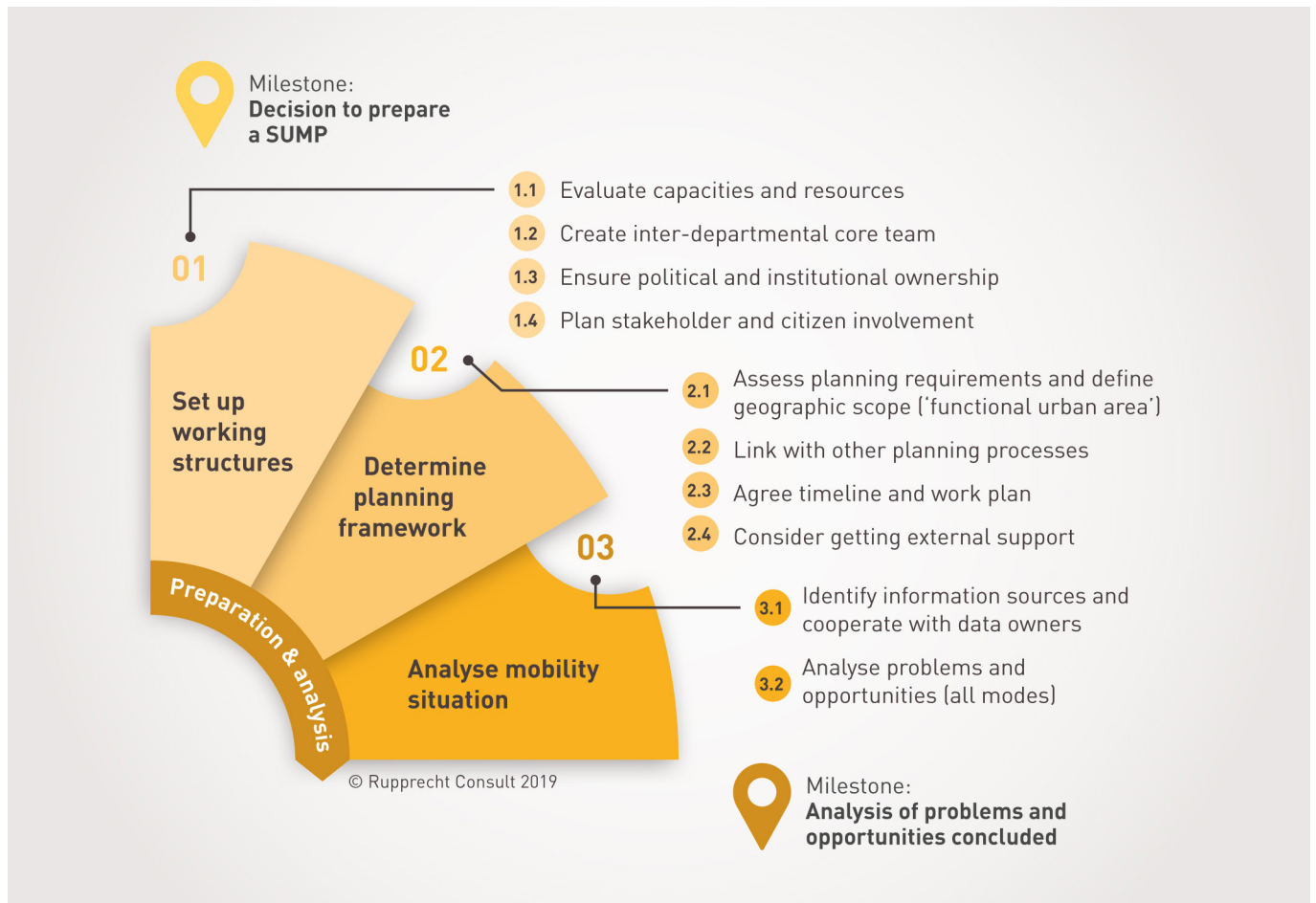
Figure 7: 12 steps of Sustainable Urban Mobility Planning (SUMP 2.0). Source: Rupprecht Consult

The Sustainable Urban Mobility Plan cycle summarises the steps that a local planning authority can follow to develop a SUMP at metropolitan level. The steps and process do not differ from the ones taken by planning authorities at different geographical scale, however when planning at metropolitan level, there might be the need to pay special attention to some steps and to get inspired by concrete examples from other metropolitan regions across Europe.

As a matter of fact, experience shows that the SUMP cycle is a simplified representation of the planning process that must be adjusted to local contexts, where some steps might be partially excluded, executed in parallel or adapted to the specific needs.

3.1 Preparation and analysis

The preparation and analysis phase is the starting point of the SUMP and it is particularly important for metropolitan regions.



3.1.1 Step 1 - Set up working structures

As discussed above, metropolitan regions in Europe vary a lot in terms of governance structures. When a supra-municipal structure does not exist, the relevant actors should start reflection and discussion to explore whether specific cooperation schemes are needed to address transport challenges or the development of a metropolitan SUMP.

In the case of Greater Manchester, for instance, the decision to create Transport for Greater Manchester (see Box 2 in chapter 2.2.1) was based, on one hand, on the opportunity offered by the various national reforms of local governments, but also on the increasing need to address transport problems, such as the introduction of congestion charging in the mid-2000s in a coordinated way.

In the cases of metropolitan authorities with no clear mandate to supervise local mobility planning, the creation of territorial agencies or authorities in charge of planning mobility over the metropolitan region is an effective tool for the alignment of policy strategies, the construction of a unitary SUMP and thus for the implementation of measures across the whole area. In this case, the focus of the policies should be the creation of efficient bodies (authorities, territorial bodies) with enough technical skills for the development of SUMP. These bodies typically possess a sufficient degree of authority to involve all the interested municipalities or districts, cooperate with regional and national levels and other stakeholders (including non-governmental organisations, citizens and business associations, etc..) and ultimately represent their needs. Typical examples

gave funding to municipalities for the development of SUMP. Since a formal metropolitan authority with the right to supervise and execute the local mobility planning for its area does not exist, the Region of Central Macedonia is guiding its municipalities through the creation of a Competence Centre (see Box 1 in Chapter 1.2.1), in order to plan in an integrated and complementary way.

In this phase, it is important to ensure that the metropolitan SUMP is integrated with other planning tools, such as spatial planning, sustainable development plans, environmental plans, etc., as effective sustainable mobility can only be achieved by pairing it with control over urban sprawl and in accordance with the sustainable strategy for the territory and in the respect of the environment.

Grand Nancy, for instance, is engaged in the elaboration of a metropolitan urban mobility plan (PLUi-HD), which will integrate several sectorial plans into a single one. By pooling resources and skills at the agglomeration level, this unique document aims at harmonizing public policies on urban planning, housing, mobility, economic and commercial development and the environment to enable the emergence of a shared, coherent and united territorial project. Such approach is not mandatory in France and is based on the political decision of the Grand Nancy metropolitan council. In practical terms, the elaboration of the PLUi-HD is carried out by a transdisciplinary technical team gathering staff from the urban planning, housing, economic development, sustainable development and mobility departments of the Grand Nancy metropolitan authority and supported by the regional agency for development and urban planning. The different steps of the elaboration process

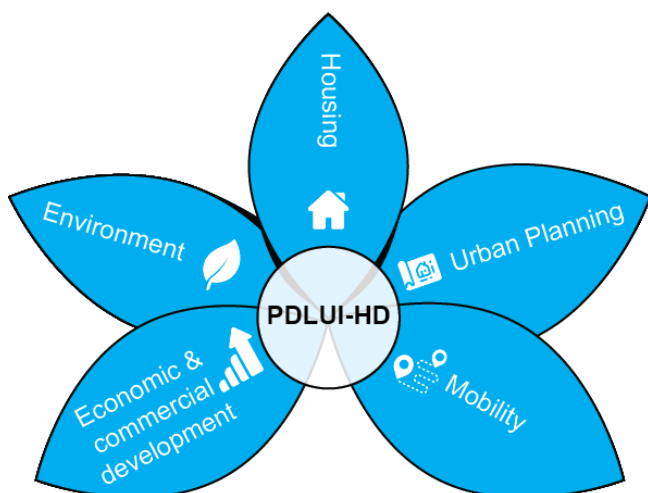


Figure 9: Grand Nancy comprehensive SUMP approach. Source: EUROCIITIES

Box 4: Creation of a SUMP scientific committee⁹

In the framework of its SUMP board, the metropolitan city of Bologna appointed a scientific committee, which is an external, independent and scientific body that oversees and provides guidance throughout the whole SUMP process. In the case of Bologna, it is composed of five eminent professionals with mobility, environment, urban planning and socio-economic backgrounds respectively, thus bringing about a diverse and transversal perspective. The scientific committee was not appointed with the task of drafting or elaborating selected parts of the SUMP, but instead to provide valuable advice to the technical staff and the political representatives and to keep a general oversight of the SUMP as a whole. The scientific committee members were chosen among dedicated and motivated representatives of the scientific community. Four out of five members were not linked to Bologna to make sure that the process could be influenced by experiences and views from other cities and countries. To ensure neutrality and a critical friend review, the scientific committee members did not receive a professional fee, but a reimbursement for their expenses. The scientific committee performed its task through a combination of online and offline exchanges with the Bologna SUMP office. Five physical meetings took place throughout the SUMP elaboration process, jointly gathering the political representatives and the technical staff in charge of the SUMP development. Supporting material was shared ahead of the meetings to better prepare the discussion. The scientific committee helped pursue ambitious policies and objectives in the SUMP, engage politicians and bring scientific substance and authority to the measures contained in the plan.

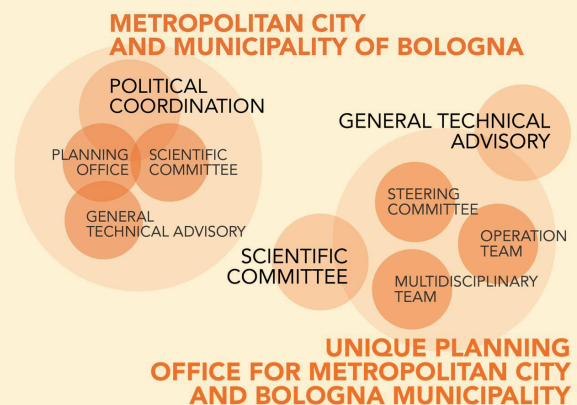


Figure 10: Planning board. Source: Metropolitan City of Bologna

⁹ For the in-depth good practice example, please consult the 'Good practice collection Annex'.

are first discussed by the metropolitan technical team, which then coordinates with the technical staff from the different municipalities covered by the PLUi-HD. This phase is followed by discussion with the political representatives at both metropolitan and municipal level.

The Greater Manchester experience shows that the integration of the metropolitan SUMP with spatial and other sustainable development plans requires significant cooperation between the different entities involved, especially if the competency over the development of those plans is spread across different levels of governance or there are conflicting priorities. However, early engagement and the closest possible collaboration among the concerned entities throughout the process will enable the most desirable outcomes to be achieved.

This is also the phase where the timeline and the scope of the planning must be agreed among the different actors involved. Metropolitan regions might consider getting external support for some of the phases of the SUMP elaboration or to provide external advice to the process, such as in the case of Bologna (see Box 4).

3.1.3 Step 3 - Analyse mobility situation

The analysis of the mobility situation mainly refers to the identification, collection and analysis of data to gain important knowledge of the current problems and opportunities. The main challenge in the case of a metropolitan SUMP is the collection and integration of data, which is a major problem especially in the case of informal/soft forms of coordination.

In most of these cases, there are different data sources, concerning each of the municipalities (data coming from local SUMP surveys, ICT infrastructure, local transport authorities, etc.) but there is no cooperation mechanism and/or technical solution, to integrate all this data and thus feed it into the metropolitan mobility planning process.

The mobility monitoring centre of Thessaloniki, for instance, has been implemented by the Hellenic Institute of Transport of the Centre for Research and Technology Hellas (CERTH/HIT) with the support of and the cooperation agreements with the Region of Central Macedonia, the capital municipality of the region (Thessaloniki), other municipalities of the region, the Thessaloniki public transport authority and the Taxiway association. The mobility monitoring centre is operated at the premises of CERTH/HIT and collects, processes and disseminates data related to the mobility system of

Steps for the development of a mobility monitoring centre in a metropolitan region

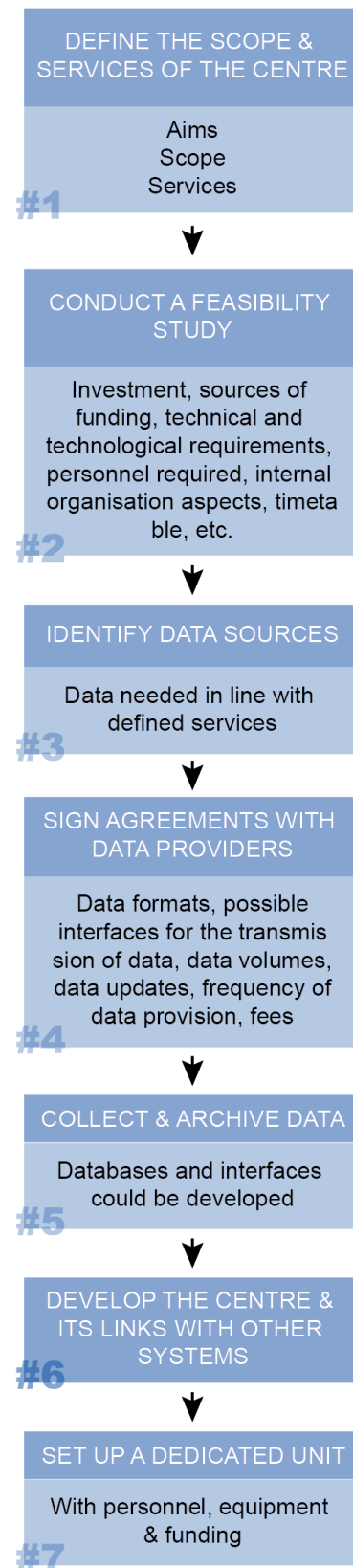


Figure 11: Steps for the development of a mobility monitoring centre in a metropolitan region. Source: EUROCITIES

Thessaloniki. According to this approach, the implementation of a mobility monitoring centre in a metropolitan region should follow seven steps (see Figure 11).¹⁰

The mobility monitoring centre is currently using Information and Communication Technology (ICT) solutions for collecting data at local, metropolitan and regional level. The tools and sensors have been installed by the Region of Central Macedonia (radars and traffic counting sensors), municipalities installed Bluetooth signal counters, whereas taxi associations and the public

transport bus equipped themselves with GPS systems. The cooperation of these local authorities with the data administrator (Hellenic Institute of Transport) made this large amount of data easily available, drafting a shared picture of the state of mobility for the metropolitan area.

For its SUMP, the Ljubljana Urban Region (LUR) also collected data on regional bus and train passengers, on commuter flows, public transport speed, frequency and timetables to complement the analysis and have a clear understanding of how the public transport service could be improved.

3.2 Strategy development



3.2.1 Step 4 - Build and jointly assess scenarios

The strategy development phase aims at agreeing on a common vision for the development of the metropolitan region, even beyond mobility, with citizens and stakeholders.

It is based on a holistic approach of multi-sectoral (horizontal), multi-level (vertical) and cross territorial cooperation. Besides linking the SUMP development to other

¹⁰ For the in-depth good practice example, please consult the Good practice collection Annex.

planning processes in the preparation and analysis phase, this complementarity should be pursued and achieved in the definition of a common vision and shared objectives. The biggest challenge to achieving horizontal and vertical integration of sustainable transport in metropolitan regions is the complementarity with local, regional or national environmental, land use and socioeconomic development plans. For this reason, the vision and objectives, as well as the future strategy and scenarios' implementation, should always consider these cross-sectorial challenges.

As far as the multi-level integration is concerned, the most common case is the integration of goods and passengers' mobility (Sustainable Urban Logistic Plan - SULP - and Sustainable Urban Mobility Plan) in one single planning tool.

The metropolitan city of Bologna, for example, developed the two plans simultaneously and fully integrated the SULP in the SUMP strategy as a way to better achieve the overall objectives and vision for the metropolitan region while maximising the synergies.

On the other hand, cross territorial cooperation for the metropolitan SUMPs is usually achieved through close cooperation between the metropolitan authority and the local areas, as well as the metropolitan authority and the region, in order to co-develop common and/or complementary visions and objectives. The Prague' SUMP, for instance (see Box 5), is a case of soft cooperation where the city leads on the process and cooperates with the neighbouring municipalities and the Central Bohemian Region on specific steps, including the development of a common vision and the measure selection. By organising targeted workshops and

Box 5: Scenario selection through participatory approach¹¹

A half day workshop was organized with 57 stakeholders from the city and the Central Bohemia Region to agree on a common scenario for Prague and its agglomeration. Three different scenarios were prepared ahead of the workshop: Prague effective, which sees the future of mobility in a high-quality, interconnected and accessible network of integrated public transport, especially electric trains, trams and metro; Prague rational, a city of shorter distances based on sustainable and effective modes of transport such as on-street public transport or cycling, upgrading existing infrastructure with little focus on the interconnection with the Central Bohemian region; Prague liberal where the development of the road network will go hand in hand with the strong economic regulation of automobile traffic in the city centre and strong cycling and electric car investments. The 57 experts worked in six smaller groups to agree on a mobility vision for Prague and its surrounding areas, the workshop consisted of four steps:

1. Mobility scenarios vs. problems (30 min): to understand the prepared scenarios' definitions and connect them with the main pre-identified problematic areas (interconnection between Prague and its metropolitan region; capacity and reliability of the public transport system; inaccessibility and barriers for pedestrians and cyclists; overload and vulnerability of the road network; traffic impact on environment and public areas; ineffective processes and city administration);
2. Benefits and risks of mobility scenarios (60 min): to discuss the solution methods (different for each scenario) for each of the problematic areas, assess the benefits and risks for execution;

3. Discussion and selection of the preferred mobility scenario (60 min): to assess the mobility scenarios, select one and complement it to mitigate its risks, moving from the problematic issues to the assessment of all the mobility scenarios.
4. Common mobility vision (60 min): to report the results of the work of each group to the others and potentially have the groups confront each other.

Surprisingly, every round table voted for the 'Prague effective' scenario and some of them recommended to add some improvements from other scenarios, such as the upgrade of existing infrastructure and development of the outer freeway city ring.



Figure 12: Workshop's discussion. Source: IPR

^{11,12} For the in-depth good practice example, please consult the 'Good practice collection Annex'.

Carefully selecting the participating actors, the city of Prague made sure that all different positions and needs were represented and could contribute to the definition of a shared vision for the Prague’s agglomeration.

Building and jointly assessing scenarios together with a wide and balanced range of stakeholders so as to represent the reality and needs of the whole metropolitan region is thus a fundamental step.

3.2.2 Step 5 - Develop vision and strategy with stakeholders

Platforms for regular exchange or ad-hoc meetings and events should be considered to commonly develop a mobility vision and its corresponding objectives. Stakeholders can be involved through dedicated and carefully planned workshops, online surveys and targeted communication tools to contribute to the development of a common vision and strategy for all mobility modes in accordance with the possible future scenarios.

In the development of a City Centre Transport Strategy for example, which will be a sub strategy to the Greater Manchester 2040 SUMP, TfGM conducted an online conversation asking members of the public how they currently travel into and around the city centre and how

they would like to see mobility in the city centre improved in the future. The online survey was completed by 3,715 respondents and the information used in the further development of the vision for the City Centre Transport Strategy.

Also, in June 2017, the Region of Central Macedonia published the ‘Strategic Plan of Sustainable Urban Development of the Metropolitan region of Thessaloniki for 2014-2020’ (SPSUD), an ambitious strategy aiming to create a new roadmap for the ongoing development of the metropolitan area. The main vision of the strategic plan concerned the ‘renaissance of the city and the formation of a sustainable living and working environment for the inhabitants’.

Box 6: Monitoring Committee of the Urban Development Strategy of Thessaloniki Metropolitan Unit¹²

The Monitoring Committee was an intermediate level scheme, between the technicians, who implemented the strategy/action plan, and the Metropolitan Committee, who eventually approved it. The Monitoring Committee was attended by the mayors of the municipalities of the implementation area, the Governor of the Metropolitan Unit, who also acted as rapporteur to the Metropolitan Committee, and three additional representatives of the Thessaloniki Metropolitan Unit. The organisational structure for the implementation of the Urban Development Strategy is presented below.

Figure 13: Guide for the implementation and submission of the Urban Development Strategy. Source: CERTH-HIT



The key element of innovation in the elaboration of this 2014-2020 strategy was putting forward a participatory process with the citizens and the various actors of the city at a metropolitan level via the Monitoring Committee of the Urban Development Strategy of the Thessaloniki

Metropolitan Unit (see Box 6). The approach was based on the active participation of more than 1,200 citizens and the collaboration with more than 37 organisations across the region, with a special focus on disadvantaged groups.

3.2.3 Step 6 - Set targets and indicators

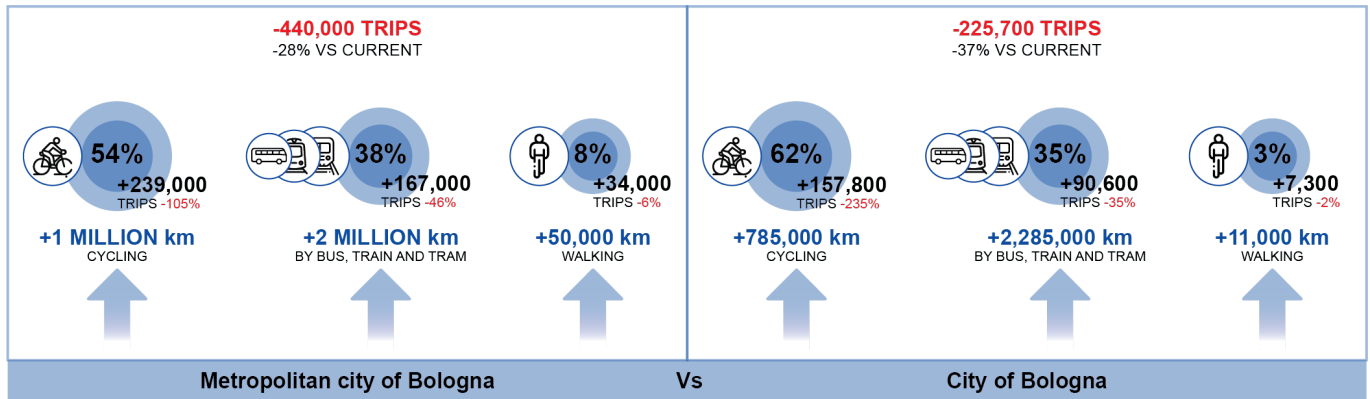


Figure 14: SUMP targets: City of Bologna Vs metropolitan city of Bologna. Source: EUROCIETIES

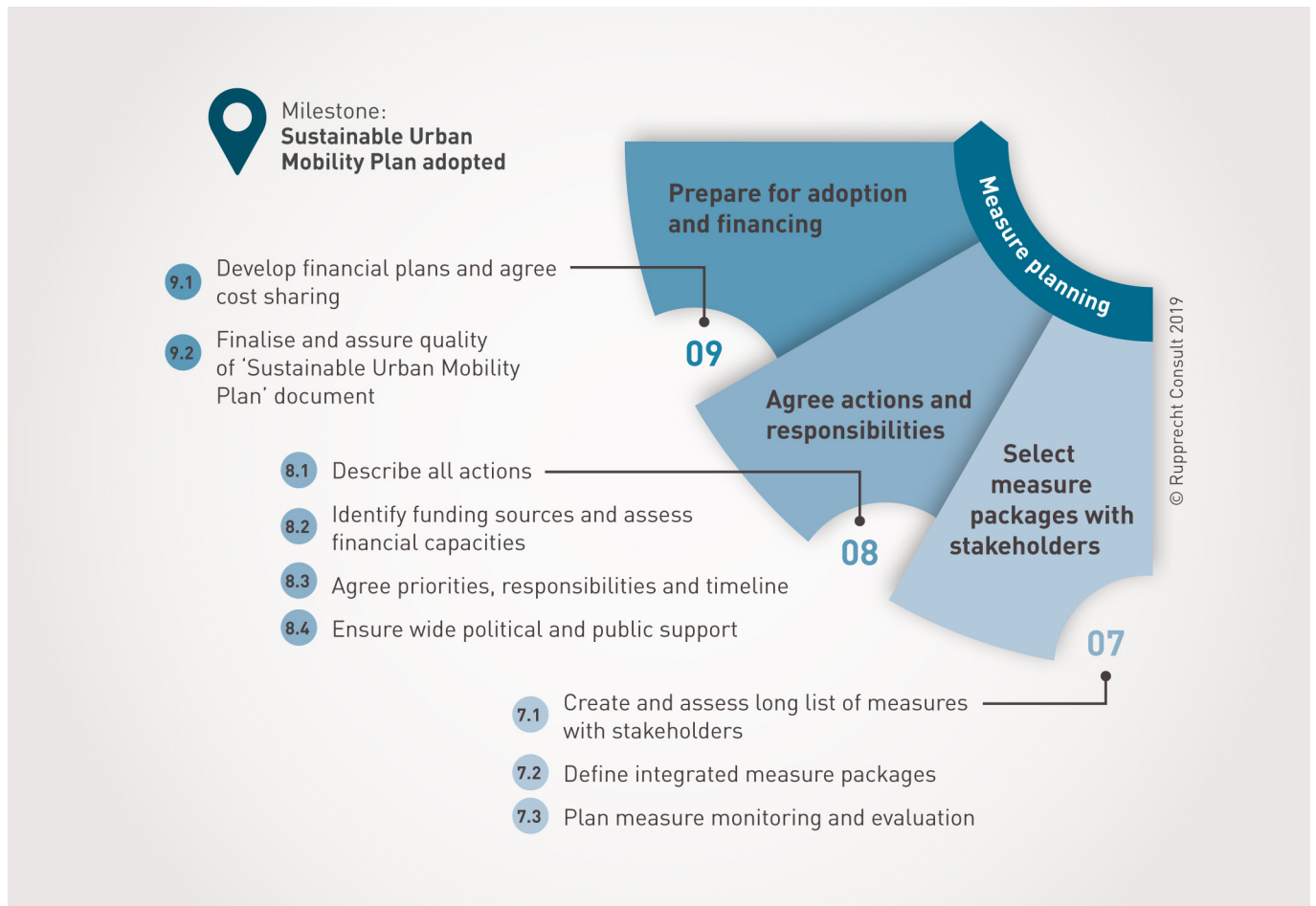
Based on that, the metropolitan SUMP sets targets and indicators at metropolitan level, distinguishing, where needed, the individual contribution of each municipality to the overall targets. Each municipality or district in the metropolitan region has its own economic strengths, distinctive geographical features and diversity of place and related travel patterns. The targets and indicators chosen should reflect this diversity.

The SUMP for the metropolitan city of Bologna, for example, aims at transferring 440,000 motorised trips to other more sustainable transport means in the whole metropolitan region by 2030; i.e. 28% less compared to the current situation. The municipality of Bologna alone

is supposed to contribute by shifting 255,700 motorised trips to sustainable modes by 2030 (a reduction of 37% compared to the current situation) (see figure 14). The targets are further broken down into smaller targets for each of the 7 Unions of Municipalities (groups of municipalities belonging to the metropolitan region of Bologna).

Targets of a metropolitan SUMP should be SMART (specific, measurable, achievable, realistic, time-bound) and refer to the agreed objectives as they are the basis for the monitoring and evaluation activities that will follow.

3.3 Measure planning



3.3.1 Step 7 - Select measure packages with stakeholders

Once the strategy and targets are agreed, it is time to translate them into concrete actions. In the case of metropolitan SUMP, the long list of measures is usually built considering the synergies with other sectoral plans and in cooperation with the concerned stakeholders to ensure ownership and avoid reluctance in the implementation phase. If on the one hand the SUMP is metropolitan-wide, on the other hand some of the measures are implemented locally and thus must be agreed with the concerned municipalities, districts and neighbourhoods, besides stakeholders and citizens.

The city of Prague, for example, carried out two additional workshops for the selection of measures specifically together with all the relevant stakeholders from the metropolitan region: experts from most of Prague's districts, specialists from the towns in the Central Bohemian region, expert organisations, academia, non-governmental organisations and associations as well as

the SUMP steering group. The first workshop, involving a wider group of stakeholders, was designed to develop a measure selection methodology, whereas the second one only involved stakeholders from Prague municipality, city expert organisations and companies, as well as Central Bohemian region representatives to select measures according to the agreed methodology and score them accordingly.

In the framework of the development of its metropolitan SUMP, Bologna organised dedicated thematic tables for the discussion of the metropolitan public transport measures. The stakeholders involved in the thematic tables were asked to discuss the proposal for the configuration of the public transport support network, preceded by a general discussion on tariff integration. The discussion was structured around three meetings that involved almost 40 stakeholders including: network and transport service managers, subsidiaries,

institutional bodies; mobility for disabled people associations, research and schools, environmental associations, commuter associations, mobility managers, research and health institutes, trade associations and trade unions.

The consultation with stakeholders and interest' groups for the selection of measure packages is crucial to bring additional ideas and increase acceptance. Measures should be selected carefully to make sure benefits are maximised. For example, road user charging through tolls can attain multiple goals, both in terms of funding and of discouraging car use. If paired with metropolitan-wide public transport investments, this package of measures can play a significant role in changing travel behaviour towards more sustainable modes.

3.3.2 Step 8 - Agree actions and responsibilities

This is the moment to clearly estimate costs and identify funding sources for the implementation of SUMP measures. This task is ideally rooted in a comprehensive analysis of the local, regional, national and international funding and financial frameworks since the early stages of the process. Moreover, early political involvement will ensure that there is a strong political commitment and effort to fund the selected measures.

Financial schemes for SUMP measures are typically based on a mix of different sources, from local revenues, to regional and national programmes, up to European or international instruments.

The bigger the geographical scope of the SUMP, the more important it is to clearly agree on actions, responsibilities, priorities and timelines. The presence of a single coordinating authority or of an appointed supporting body at metropolitan level ensures higher synergy and effectiveness of the package of measures, as well as a meaningful allocation of responsibilities among the different actors. In the allocation of costs, it is essential to coordinate with all stakeholders involved in a transparent way and allocate responsibilities according to the most relevant administrative level, such as in the case of Lille's micro-SUMPs (see Box 7).

In this phase it is also important to ensure political and public support of the chosen actions throughout the metropolitan region, which is essential for the following preparation for adoption and financing step. In the case of the Ljubljana Urban Region (LUR) SUMP, the key measures, which were selected through a wide



Figure 15: Thematic table with stakeholders. Source: PUMS Bologna Metropolitana

Further guidance on funding and financing schemes available for SUMP development and implementation can be found in the Topic guide Funding and financing options for sustainable urban mobility

<https://www.eltis.org/guidelines/second-edition-sump-guidelines>

participatory approach, were transformed into an action plan that was once again verified at a workshop with the technical representatives of the municipalities, and final interviews with key stakeholders in the region. At the end of the process, the proposed draft action plan was adapted, and the final version approved by the regional council.

3.3.3 Step 9 - Prepare for adoption and financing

In this phase, the financial plans are developed, and the allocation of costs is agreed among all the relevant actors. In the specific case of metropolitan regions, for example in the provision of a metropolitan public transport service, the financing of measures often requires agreements on cost-sharing and compensation mechanisms among the different municipalities in the region. The existence of a single metropolitan authority facilitates the integration of various financing sources, the cooperation among different actors and therefore the implementation of the measures.

As mentioned above, a thorough analysis of the funding and financing frameworks at local, regional, national and international level, as well as a certain degree of political endorsement beginning at the early steps of the process

Box 7: Using micro SUMP's to tackle issues at the best geographical scale¹³

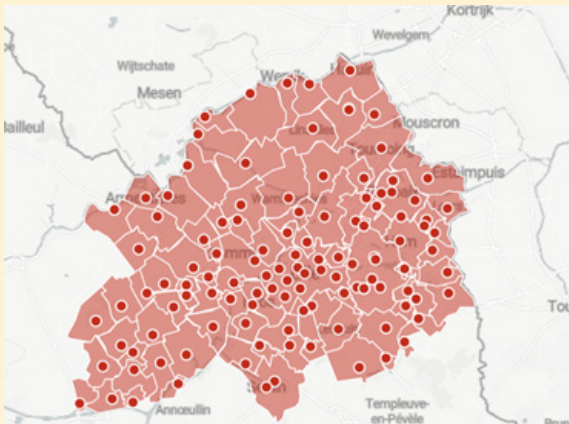


Figure 16: 90 municipalities of the MEL. Source: MEL

To best tackle mobility issues at the most relevant scale, the European Metropolis of Lille (MEL), in France, has introduced the concept of subsidiarity in its SUMP, via micro-SUMP's, covering specific areas that do not follow the lines of the traditional administrative boundaries. Decisions are then taken at the lowest possible level, or closest to where they will have their effect. This kind of approach can be relevant for different types of planning authorities to both improve the measure selection and the implementation process. The SUMP of MEL includes the implementation of 10 micro-SUMP's to deal with different types of issues, including:

- Geographic micro-SUMP's to better act at local level for issues that are common to the whole urban area;
- Area micro-SUMP's to better act at the local level for issues that are specific for certain areas;
- Infrastructure micro-SUMP's to better act at the local level for issues that are specifically related to a piece of infrastructure (road equipment, public transport infrastructure, etc.);
- Economic/Urban development micro-SUMP's: to better accompany the development of an economic/urban project with mobility measures.

The micro-SUMP's are supervised by an elected representative of MEL and the mayors of the municipalities/districts covered by the micro-SUMP's. The mayors of the territorial unit on which the micro-SUMP's are implemented sign a micro-SUMP charter (charte micro-PDU) with MEL. Their teams take part in the definition and the implementation of the micro-SUMP's. Of course, the micro-SUMP's complement and are aligned with the metropolitan scale SUMP. The approach of the micro-SUMP, as such, is unique in France and in Europe.

will ease the financial plan preparation. As a matter of fact, in that early phase it is important to already include a realistic and detailed budget calculation for each proposed measure or policy and infrastructure and their correlation with the relevant funding schemes.

Depending on the availability of resources and the required length of the implementation, the measures can be financially planned in consecutive intermediate phases and should be packaged in a way to increase synergies and effectiveness. For example, big infrastructure investments at metropolitan level - that have high costs and longer implementation periods - can be complemented by softer measures that require smaller investments or have shorter-term effects. Those include, for example, the optimisation of the metropolitan transport system, the integration of transport modes and ticketing systems, the harmonisation of fares and timetables, or the coordination of demand management measures metropolis-wide, just to mention a few (SMART MR, 2019).

The transport fare system for the metropolitan area of Lisbon¹⁴, for example, was extensively simplified into two main and cheaper options in April 2019: one covering all transport operators in the whole metropolitan area (€40 per month) and the other covering all transport operators in a single municipality (€30 per month). Specific fares were also introduced for the elderly, children and families.

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Figure 17: New tariff system in the metropolitan area of Lisbon. Source: AML

With the support of a national funding programme, the metropolitan area of Lisbon together with its 18 municipalities put forward a financial plan to support this

^{13,14} For the in-depth good practice example, please consult the 'Good practice collection Annex'.

Box 8: Long-term funding strategy for transport investments¹⁵

The Oslo metropolitan region contains the core city of Oslo and the County of Akershus. Although politically independent from each other, Oslo and Akershus have worked jointly in an established cooperation and legal framework on mobility since the 80s. The collaboration between the City of Oslo and Akershus County is based on the following strategic agreements:

- The Oslo Packages, three long-term programmes for funding transport in the whole region supported by the income generated over a ring of automatic toll-stations around the city, known as the Toll-Ring;
- A joint venture public transport organisation, which has the strategic, financial and operating capacity to serve the whole of Oslo and Akershus County;
- A joint regional plan for transport and land-use (2015) which provides strong, binding commitments for all 23 municipalities. This is the first plan to be developed for the metropolitan area in 40 years.

Oslo package	Public transport	Regional plan
- Toll Ring	- Joint venture	- Land use and transport
- Investment programme	- All public transport	- Legality

Figure 18: Three pillars of collaboration. Source: City of Oslo

The toll ring was established in 1990 to provide local financing for the first phase of the Oslo Package based on a cross-party political agreement between Oslo, Akershus, and the national government to raise money to finance long-term transport investments across the area. This was extended to two periods (Oslo Package 1 from 1990 to 2002, and Oslo Package 2 from 2002 to 2008), and the revenue was used to complement national government funding for roads and public transport infrastructure. Since 2008 (Oslo Package 3), and with the increase of fees, part of the operating costs of public transportation have also been funded by the toll ring, as well as cycling paths. In the period 2008–2012, about 50% of the toll charges were allocated to public transport in Oslo and Akershus. In May 2012, the list of prioritised projects was revised based on the transversal input of political parties to better respond to the challenges ahead. In June 2016, the Oslo Package 3 agreement was extended until 2036 with additional features. A higher congestion toll was introduced, toll charges were differentiated according to the fuel (with electric and hydrogen cars exempted), and new toll cordon stations in the city are now in place, so that 76% of all traffic now has to pay – and not only those who cross the original ring. The overall budget in the agreement period (2017-2036) amounts to €13-14 billion, which is financed mostly through the toll charges (approximately €8-9 billion), in addition to central and local government funding. The Toll-Ring collects €300 million annually. The key to success lies in the cross-party agreement between Oslo and Akershus politicians, ensuring that there is something in it for all, with clearly defined objectives and strictly earmarked funds.

measure. The national government agreed to contribute with €70 million and the 18 municipalities with an additional €10 million to compensate, at the beginning of the new process, the deficit created by the new fare system. It is estimated that the deficit will progressively decrease due to the new passengers acquired thanks to a more efficient network. This measure, as part of the Sustainable Urban Mobility Action Plan of the Lisbon Metropolitan Area (PAMUS) approved in February 2016, was prioritised for its great short-term potential to encourage public transport use over private motorised modes and therefore as a strong base for other SUMP measures. As a matter of fact, preliminary results have shown that 625,000 new passes were bought only in the month of May 2019, 65% of them for the whole metropolitan area, and that passengers in the network increased by 14% compared to May 2018. Even more interestingly, more passengers are using public transport outside commuting hours, mainly on late hours, weekends and during holidays, indicating a change in people’s behaviour compared to the past.

Similarly, demand management policies, such as the Toll-Ring system in Oslo (see Box 8), are effective ways to both discourage the use of private cars and generate revenues that can be reinvested in sustainable urban mobility measures. However, those measures need to be coordinated at metropolitan level and be strongly integrated with spatial planning to ensure that traffic is not diverted to another area and that competition is not triggered among municipalities to attract customers.

Finally, when developing the financial plan at metropolitan level, it is important to pursue long-term realistic goals and to not let the plan be influenced by day-to-day issues. The case of Oslo is in this sense very inspiring, where the transport funding strategy for the whole region is based on a long-term funding programme, a joint venture public transport organisation

¹⁵ For the in-depth good practice example, please consult the Good practice collection Annex.

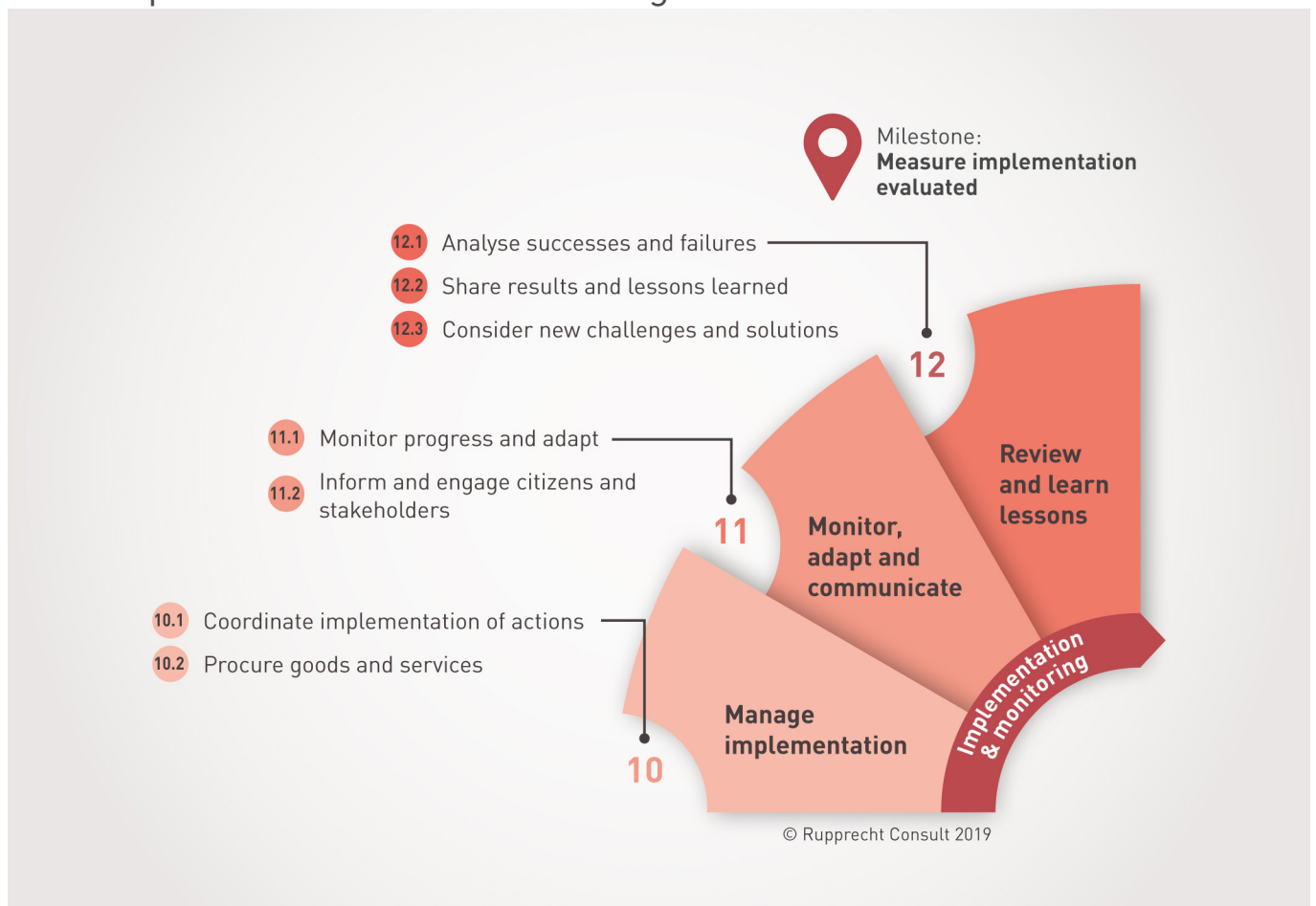
and a joint regional plan for transport and land-use (see Box 8).

The use of a single SUMP at metropolitan level ensures a harmonised development approach for the whole area and strong integration with all other relevant sectorial plans. In some countries, when a formal metropolitan authority does not exist, the quality assurance role might be facilitated by higher levels of government, i.e. regions or even national ministries. In the case of the Region of Central Macedonia for example, the sustainable urban mobility observatory was set-up to monitor and

coordinate the SUMP of the municipalities of the Thessaloniki metropolitan unit and thus ensure the complementarity of the local plans and compliance with the regional strategy.

This phase is then concluded with the drafting and adoption of the SUMP document by the competent authority, which will be different depending on the governance structure in place: i.e. the metropolitan council in the case of supra-municipal and inter-municipal structures, or the single municipal councils in case of informal/soft cooperation governance models.

3.4 Implementation and monitoring



3.4.1 Step 10 - Manage implementation

At this point, the process leads to the management of the implementation of the measures contained in the plan and the coordination of the whole process at metropolitan scale.

In some cases, in Europe, existing national or regional legal frameworks for SUMP define the stakeholders that must be involved in the implementation phase.

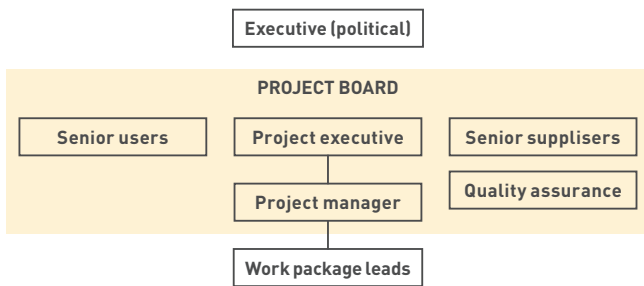
This is the case in the Flemish region of Belgium, and in the United Kingdom.¹⁶

¹⁶ A detailed overview of existing SUMP legal frameworks in the EU Member States can be consulted here: The status of SUMP in the EU Member States (2018): http://sumps-up.eu/fileadmin/user_upload/Tools_and_Resources/Reports/SUMPs-Up___PROSPERITY-SUMP-Status-in-EU-Report.pdf

Proper implementation must identify and involve the prescribed stakeholders in the implementation of measures. In doing so, the project management at metropolitan level must ensure cooperation and regular exchange throughout the entire implementation, including with participating municipalities, districts and neighbourhoods impacted by the measures.

The West Yorkshire Combined Authority (WYCA) is the local transport authority in charge of developing and implementing the SUMP for the West Yorkshire metropolitan region, which comprises the five district councils of Bradford, Calderdale, Kirklees, Leeds and Wakefield. The WYCA uses an ambitious project governance system based on the commercial PRINCE2 tool for project management where a clear and hierarchical structure ensures smooth decision making for SUMP implementation (CH4LLENGE, 2016) (see Figure 19).

Figure 19: Diagram of WYCA project governance. Source: CH4LLENGE – Institutional Cooperation



To ensure effective delivery it might be necessary to procure certain goods and services and to introduce some of the least accepted measures as trials and demonstrations. As part of this phase, it is also crucial to undertake regular monitoring of the progress.

Further guidance on procurement of goods and services for your SUMP can be found in the Topic guide Public procurement of sustainable urban mobility measures

<https://www.eltis.org/guidelines/second-edition-sump-guidelines>

3.4.2 Step 11 - Monitor, adapt and communicate

If cooperation schemes for the collection and integration of data have been established in the preparation and analysis phase, it will be possible to regularly monitor the implementation of the measures and adapt them accordingly (see chapter 3.1.3).

The data collected can also be used to promote results and to communicate, with a strong evidence base, to the different interest groups. Awareness raising and marketing campaigns should accompany the implementation process and be organised in the different parts of the metropolitan region, both at the core and at its periphery in order to capture different target audiences. Communication tools should also reflect the diversity of the audience across the whole territory.



Figure 20: Leaflet for the theatre representation “Nature without cars”. Source: Metropolitan city of Bologna

The metropolitan city of Bologna carried out a tour in four different railway stations across the metropolitan territory to present the SUMP and its measures to citizens. The chosen format was a theatre play ‘Nature without cars’ summarising the measures of the SUMP, followed by a concert, with parallel workshops for children. SUMP technical experts remained at the disposal of the public during the whole event with illustrative material and to respond to questions.

3.4.3 Step 12 - Review and learn lessons

Finally, the outcomes of the monitoring phase should be reviewed to draw lessons learned that will inform the future implementation and the future processes. The

evidence base used in Greater Manchester is crucial to identify gaps and the next challenges and thus is the first point of call for making informed decisions (see Box 9).

Box 9: Evidence base to consider new challenges and solutions¹⁷

The first Greater Manchester SUMP is the 'Transport Strategy 2040,' which has been in the implementation phase since 2017. The transport strategy is supported by a comprehensive evidence base structured around six drivers of transport demand (economy and employment, society and community, urban development, environment and resources, and technology and innovation).

The evidence base is being continually updated and provided online in order to identify the next challenges and include the latest available data (see <http://bit.ly/GMTstrategy>). Since the evidence base is the first point of call for making informed decisions, it is important to regularly update it. In this way, the new evidence and its analysis undertaken by TfGM and incorporated into the document aims to ensure the support for the Vision for 2040. In other words, it ensures that the intentions and aspirations featured within it are grounded in trends and data that are locally and time relevant.

It is important for a city to have enough resources to ensure the lasting significance of the evidence gathered, through a process of forward planning to deliver regular, systematic updates of the information. Permanently updating the evidence base enhances the cross-checking of information that comes from multiple sources. It also depicts the existing situation, and, in this way, it increases SUMP reliability and promotes the development of reliable scenarios. Moreover, the continuous update helps policymakers understand what information is already known and identify the gaps that need to be filled; also new trends can be foreseen, and new future implications can be anticipated. As a prerequisite of this understanding, the maintenance of a detailed record of the gathered information

is essential in order to easily facilitate the planned updates to the evidence base. Data collection, analysis and elaboration is particularly resource intensive and requires a significant amount of effort in the mobility planning process.

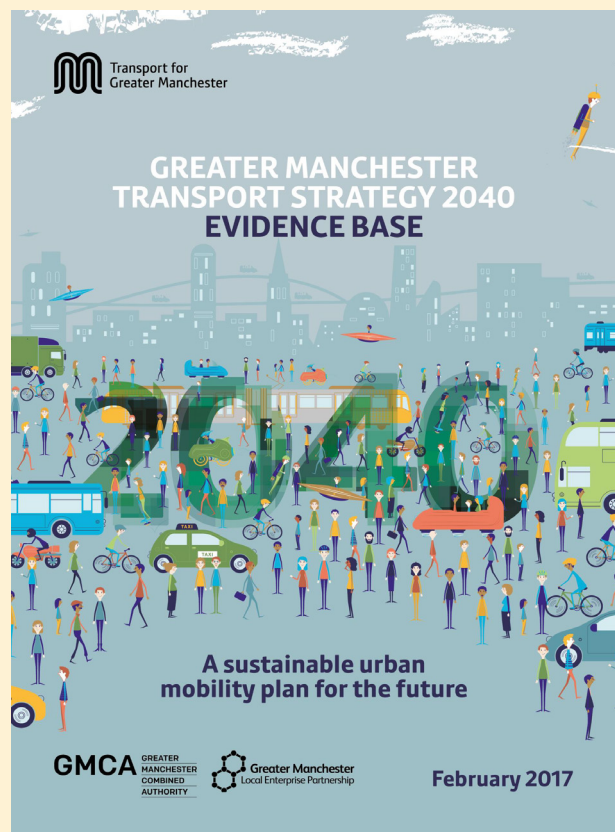


Figure 21: Greater Manchester evidence base. Source: TfGM

¹⁷ For the in-depth good practice example, please consult the 'Good practice collection Annex'.

4. Lessons learned and recommendations to develop a SUMP at metropolitan level

4.1 Governance and working structures

LESSONS LEARNED

- The metropolitan functional urban area is the critical level of action to overcome institutional, administrative, planning and operational barriers and thus trigger a sustainable mobility change. Member states should establish a clear and well-structured (not necessarily mandatory) regulatory framework to encourage SUMP uptake at metropolitan scale;
- Institutionalising the role of metropolitan regions is the potentially most effective way of achieving integrated planning, funding, implementation and monitoring;
- The legal and governance dimensions of the national framework for urban mobility should be developed or reinforced in order to recognise this metropolitan role and improve integration between administrative levels;
- When there is a supra-municipal governance structure in place, which has the authority to develop a SUMP at metropolitan level, it is important that this is carried out in close cooperation with the local administrations;
- The creation of a SUMP steering group with representatives from all the relevant local authorities and other stakeholders that meets regularly will foster the crucial working relationships needed to build consensus between the different levels of governance;
- When a metropolitan governance structure does not exist or does not have the authority to develop a metropolitan SUMP, specific cooperation schemes are needed, at least to guide the local SUMPs' development and integrate them into the wider metropolitan strategy;
- In the case of municipal or intermunicipal SUMP, implemented under the supervision and guidance of the appointed authority (who will form a dedicated SUMP monitoring committee), the supervision and guidance could have the form of a competence centre for the local administrations, a sustainable mobility data observatory for providing specific data, etc.

The metropolitan functional urban area is the critical level of action to overcome institutional, administrative, planning and operational barriers and thus tackle mobility issues and provide the most effective response.

Metropolitan regions in Europe differ in governance structure, national legal frameworks and territorial and geographical features. In order to achieve integrated planning, funding, implementation and monitoring, the potentially most effective option is to institutionalise the role of the metropolitan regions, particularly where this role is missing or downgraded, or where early attempts to formalise collaborative arrangements have been unsuccessful. This requires the creation of the necessary conditions for policy change and modification of the legal framework, always in coordination and collaboration with the competent ministries and the local municipalities. The latter should see in this the opportunity to have a high-level monitoring and facilitating body, and any hesitance should be lifted in continuous dialogue that clarifies roles, responsibilities and jurisdictions.

When there is a supra-municipal governance structure in place, which has the authority to develop a SUMP at metropolitan level, then the SUMP can be developed by the existing metropolitan department for mobility planning, but special attention should be paid to closely cooperate with the local administrations to ensure their endorsement.

The creation of a SUMP steering group, with representatives from all the relevant local authorities and other stakeholders, that meets regularly will foster the crucial working relationships needed to build consensus between the different levels of governance. As well as helping to develop a shared vision and strategy, such a group can address day to day management issues, act as a forum for discussion and help to ensure joint ownership of the SUMP. Finally, the implementation of measures and policies can also be coordinated through the SUMP steering group (TfGM, 2019).

On the other hand, when a metropolitan governance structure does not exist or does not have authority to develop a metropolitan SUMP, specific cooperation schemes are needed, at least to guide the local SUMP development and integrate it into the wider metropolitan strategy. In this case, municipal or intermunicipal SUMPs are implemented under the supervision and guidance of the appointed authority, who will form a dedicated SUMP monitoring committee.

Appointed authorities should have enhanced capacities, in terms of human resources, know-how and tools, to be able to evaluate and provide guidance to the local SUMPs to ensure their comprehensiveness, validity and overall success in the planning and implementation phases. Useful tools to move in this direction include the operation of metropolitan competence centres for SUMP development, the organisation of training and seminars on SUMP development and implementation, the development of metropolitan SUMP guidance and specification, as well as consulting existing guidance and material, thus creating a SUMP knowledge-library.

To conclude, the SUMP scope should be further encouraged to cover functional areas (starting from the metropolitan), which is still not always the case in planning reality.

Metropolitan regions have a crucial role to play to trigger a sustainable mobility change and in SUMP development, even if this role is often underestimated. Member states should establish a clear and well-structured (not necessarily mandatory) regulatory framework to encourage SUMP uptake at metropolitan scale. The legal and governance dimensions of the national framework for urban mobility should be developed or reinforced, in order to improve integration between the local, metropolitan, regional and national administrative levels.

4.2 Integrated and participatory strategy development

LESSONS LEARNED

- Integration with other sectorial strategies is a prerequisite for an impactful and long-term sustainable mobility strategy at metropolitan level, to gather relevant investments and to bridge the gap between rural and urban areas;
- A shared vision for the integrated and sustainable development of the metropolitan functional area beyond mobility is a central and strategic driver and is the real added value a metropolitan SUMP approach can create;
- Building and sharing a broad vision of how the metropolitan region will look in the future among all the municipalities and stakeholders involved will depend on the ability of the governing bodies to create consensus, harmonise interests and reach an agreement;
- It is important to plan participatory activities carefully, select participants in a balanced way and make sure that the format responds to the needs of the process to fosters acceptance of the SUMP process and create a shared vision for the metropolitan region;
- The earliest possible engagement with stakeholders and closest possible collaboration throughout the process will enable the most desirable outcomes to be achieved;
- It is best to translate the strategy into different measures and policies for specific sub-areas composing the metropolitan region (urban, rural, municipalities or even micro-areas).

Integrating transport and spatial planning through a metropolis-wide planning instrument is essential to stop urban sprawl and make transport sustainable and efficient across the area. Integrating transport and spatial planning also allows shortening work-home trips besides improving the modal shift in a sustainable way. Planning future developments near transport nodes and along public transport axes makes the operation of a metropolis-wide public transport network more convenient whilst providing access to all parts of the metropolitan territory. Long-term integrated transport and land-use planning strategies at metropolitan level might be able to use tax incentives and subsidised

schemes to steer developments in a sustainable direction.

In addition, setting integrated development strategies at metropolitan level helps better align and gather investments over the long term and fosters better consideration of social needs and bridges the gap between rural and urban areas.

A shared vision for the integrated and sustainable development of the metropolitan functional area beyond mobility is a central and strategic driver and is the real added value a metropolitan SUMP approach can create.

Political views, especially where a single metropolitan authority does not exist, might vary a lot from one municipality to the next. To ensure political buy-in, it is important to start building and sharing a broad vision of how the metropolitan region will look in the future among all the municipalities and stakeholders involved and to avoid discussing divisive details at the beginning of the process.

Cooperation among all the concerned stakeholders is essential to achieve sustainable urban mobility planning for the metropolitan region, however there is no one approach that fits all. Both informal cooperation and a formalised supra-municipal structure can be successful depending on the specific features of a given metropolitan functional area. In both cases, the success factor resides on the ability of the governing bodies to create consensus, harmonise interests and reach an agreement. (Catch-MR, 2012)

Participatory processes for strategy development at metropolitan scale involve a high number of stakeholders at different administrative levels. To make participatory activities impactful, it is important to plan them carefully, select participants in a balanced way and make sure that the format responds to the needs of the process. Involving informed and professional moderators proves helpful.

Building and keeping constant engagement and collaboration with stakeholders operating in the metropolitan region is crucial from the very beginning and throughout the whole process to ensure that priorities are not conflicting. It requires extra time, but it will enable the most desirable outcomes to be achieved in the long run.

Involving interested stakeholders and actors in setting the vision, as well as designing targeted measures for

specific sub-areas, will ensure that the SUMP corresponds as much as possible to the needs of all involved stakeholders and specific geographic areas. Measures should be tailored and adapted to the specific needs and features of the different sub-areas composing the metropolitan region. For example, low density or rural areas will necessarily need different measures than more highly dense and urban ones.

Visions, strategies and measures should be communicated widely with the public. Especially in the metropolitan context, as the needs and expectations might vary a lot from one area to the other, communication tools should be tailored to the different interests, needs and features of different targeted audiences.

4.3 Assessment of current and future performance

LESSONS LEARNED

- Common sets of performance indicators, the development of Information and Communication Technologies (ICT) and data observatories under close cooperation between metropolitan and all the other relevant authorities will provide all the traffic data needed throughout the SUMP development process, including for the analysis of the mobility situation, the target setting and progress monitoring;
- It is important to set aside a proper budget to analyse the mobility situation and have a solid evidence base that goes beyond the SUMP;
- It is advisable to set common targets and break them down into specific sub-targets for the needs and features of each spatial dimension (urban, rural, neighbourhood, etc.).

Ensuring effective assessment and monitoring of the future planning activities, using a common set of performance indicators, is a success factor for a metropolitan SUMP. Collecting, managing and properly using local or metropolitan data with the exploitation of Information and Communication Technologies (ICT), the development of data repositories and the implementation of metropolitan models for simulating and evaluating proposed planning activities and policies are some of the tools for analysing the mobility situation, setting realistic targets, as well as monitoring and evaluating the progress of a metropolitan SUMP.

Also, in order to set realistic and specific objectives, it is important to set aside a proper budget to analyse the mobility situation and have a solid evidence base that goes beyond the SUMP and can be used for multiple scopes.

When planning at metropolitan level, it is important to set common targets and to then break them down into specific sub-targets for the needs and features of each spatial dimension (core, rural area, neighbourhood, city to city, wide area, etc.).

The SUMP process does not have to be perfect from the beginning, there is room for improvement and adjustments that will emerge from the practice and from the lessons learned and results of the monitoring process.

4.4 Implementation of measures

LESSONS LEARNED

- Develop formal or informal cooperation schemes under the coordination of a metropolitan authority for a harmonised management of the SUMP implementation;
- Package measures smartly, combine soft and hard measures and ensure complementarity with spatial planning strategies to meet objectives more effectively;
- Public transport should be the backbone of the transport system at metropolitan level. Metropolitan authorities have the opportunity to locate stations and other mobility hubs strategically;
- Ensure long-term and cross-party funding schemes for the implementation of sustainable transport infrastructure across the metropolitan region;
- Ensure a realistic and detailed budget calculation for each proposed measure or policy and infrastructure and their correlation with the national, regional and local funding schemes to help prioritise and effectively implement the planned measures.

Developing formal or informal cooperation schemes under the coordination of a metropolitan authority will ensure a more harmonised management of the SUMP implementation, with a preference for more institutionalised settings that have higher authority to enforce measures' implementation.

Mobility measures at metropolitan level might entail big infrastructural investments and long implementation periods. It is useful to combine those bigger measures with softer ones that have shorter-term results and tangible benefits for the public and stakeholders. Examples are intermodal integration of the fare and ticketing system and harmonisation of timetables, to mention a few.

Mobility management measures are very helpful ways to achieve more sustainable home-school or home-work trips. Establishing a network of mobility managers at metropolitan level would help increase the impact even further. In addition, such a network of mobility managers represents a valid interlocutor and source of information in the metropolitan transport system.

Public transport should be the backbone of the transport system at metropolitan level. Metropolitan authorities have the opportunity to locate stations and other mobility hubs strategically and to encourage, through incentives and smart taxation, the location of housing and companies close to them.

Long-term and cross-party funding schemes for the implementation of public transport, together with clearly defined objectives and strictly earmarked funds will ensure a sustainable and efficient metropolitan public transport system over time.

Finally, it is important to ensure a realistic and detailed budget calculation for each proposed measure or policy and infrastructure and their correlation with the national, regional and local funding schemes to help prioritise and effectively implement the planned measures. This will be more successful if rooted on a thorough analysis of the funding and financing frameworks and a certain degree of political endorsement from the early steps of the process.

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