EuroMed RRU TransportProject

Workshop on

“How to develop a Sustainable Urban Mobility Plan”

Martin Stucki

EuroMed RRU Urban Transport Expert

Goals for today's workshop

- Present **urban mobility key concepts** : mobility, accessibility, supply and demand for travel, modes of transport, multimodality, etc.
- Get to know the **main levers and tools to manage mobility** & understand key issues for sustainable urban mobility
- Introduce the "**EASI concept**" & corresponding **EASI policy recommendations**
- Present the European Union's **Guidelines for developing and implementing a Sustainable Urban Mobility Plan** - SUMP
- Understand the main **barriers when developing and implementing a SUMP**
- Understand the direct link between **mobility planning & climate change**, and get to know the « **SUMP-NAMA** » & « **Mobili**seYourCi**ty** » Initiatives

Our program (1/2)

9:00-9:15 Introduction

9:15-10:30 **URBAN MOBILITY : KEY CONCEPTS & PLANNING CHALLENGES**

***Martin Stucki**, Urban Transport Expert, EuroMed RRU Project*

10:30-11:00 Coffee break

11:00-12:00 **EU GUIDELINES ON ELABORATING AND IMPLEMENTING SUSTAINABLE URBAN MOBILITY PLANS – SUMP**

***Lorenza Tomasoni**, Urban Transport Expert, EuroMed RRU Project*

12:00-13:00 Light lunch

Our program (2/2)

13:00-14:30 **DEVELOPING AND IMPLEMENTING SUMP's**

***Benjamin Fouchard**, Head of the prospective analysis and mobility planning departement, CEREMA*

14:30-15:00 Coffee break

15:00-15:30 **URBAN TRANSPORT PLANNING AT NATIONAL AND LOCAL LEVEL : MOBILISE YOUR CITY INITIATIVE FOR CLIMATE CHANGE MITIGATION**

***Julien Allaire**, Executive Manager, CODATU*

15:30-16:00 **KEY MESSAGES TO TAKE AWAY**

***Martin Stucki**, Urban Transport Expert, EuroMed RRU Project*

Session 1

Urban mobility : key concepts & planning challenges

Session 1 : structure of the presentation

Key concepts and main levers and tools to manage urban mobility

brief overview of the key issues of urban mobility and barriers

introducing the EASI policy

time to discuss

Key concepts and main levers and tools to manage urban mobility

Urban mobility : what is it ?

- **Mobility is a right** (the first or maybe the only one a prisoner is deprived!)
- **Mobility is a need** (access to food, education, job, health care, etc.)
- **Mobility is the ability to physically access different places and activities** (ex. home > study > work > purchase > ...)

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Nota bene :

- *Mobility encompasses both the transport demand of people and goods*
- *Mobility needs may be satisfied... or not!*

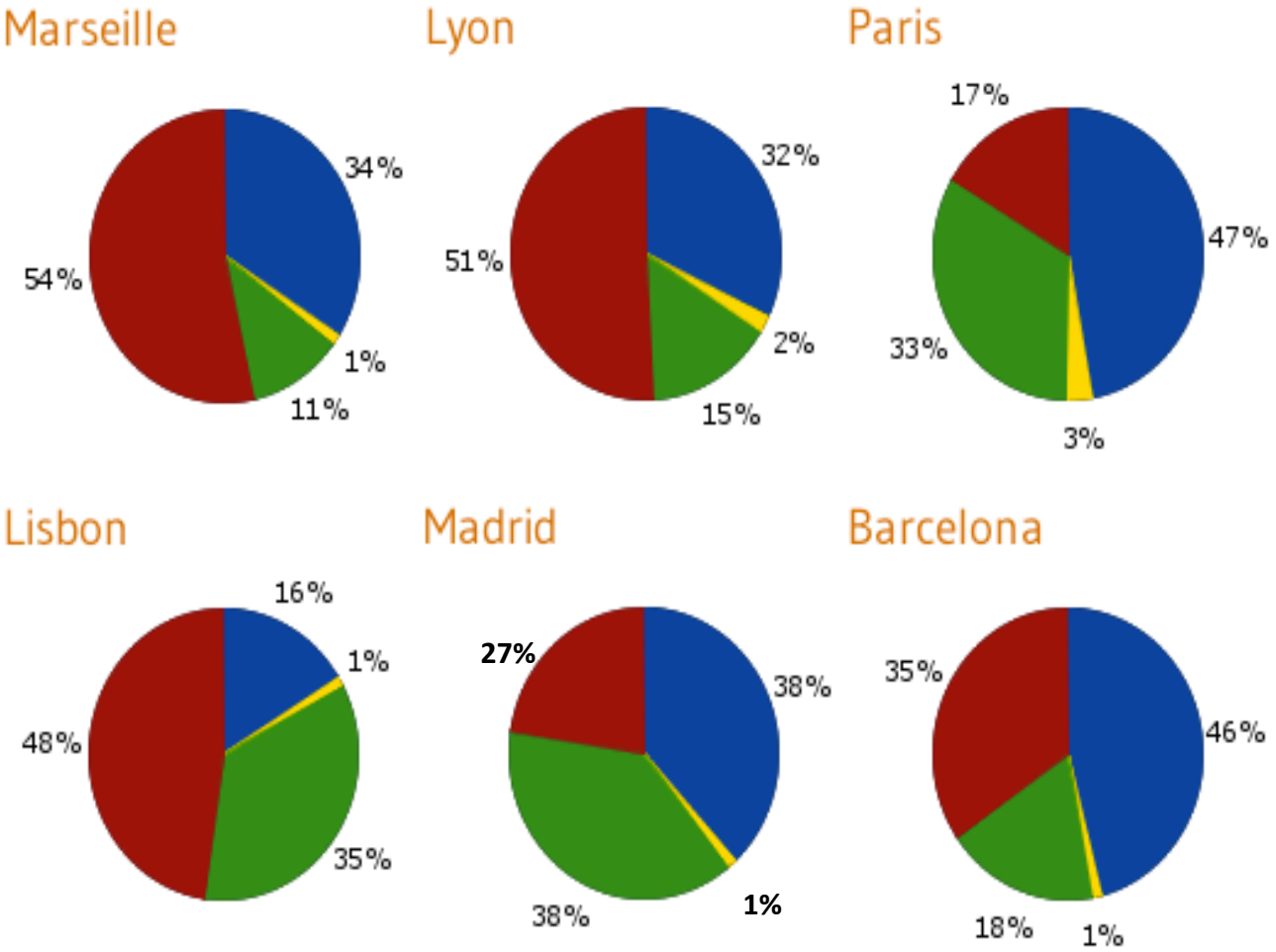
Urban mobility : modal preference at individual level

- **For each user, before each trip, the question of the transport mode arises…**

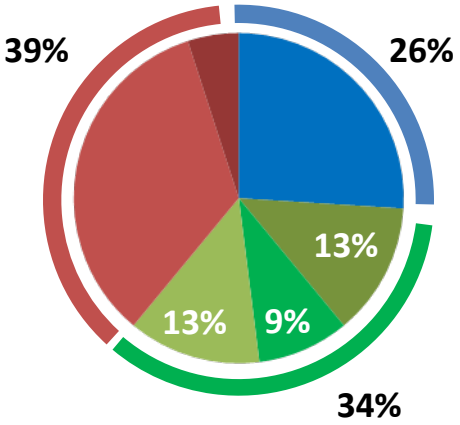
<u>Survey 1</u> : On an average day, how do you go to work from your home ?

So what is our average modal split « Home ➔ Workplace » = ?

Modal split in Amman vs European cities



Amman



Walking	26%
Bicycle	0%
Public transport	13%
Yellow taxi	9%
School bus	13%
Private car	34%
Other	5%

Urban mobility : modal preference at individual level (…)

- **For each user, before each trip, the question of the transport mode arises…**

Survey 2 : What are the main factors that influence or dictate your modal choice?

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Travel Distance	Load to be transported	Physical fitness
Travel time	Transportation costs	Level of comfort / security
Ownership / access to a transport mode	Social status	Etc.

Urban mobility : modal preference at individual level (…)

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2nd observation : **Satisfaction of mobility needs highly depends on the availability of one or more transport modes… In other words, satisfied demand depends on available supply…**

Motorized vehicle ownership (motorization rate/level)

<u>Survey 3</u> : Who owns or disposes of a personal vehicle/car ?
Who maybe even has more than one vehicle in his/her household ?

Motorisation rate of people in this room = ?

Motorized vehicle ownership (motorization rate/level)

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Who maybe even has more than one vehicle in his/her household ?

Motorisation rate of people in this room = ?

Subsidiary question :

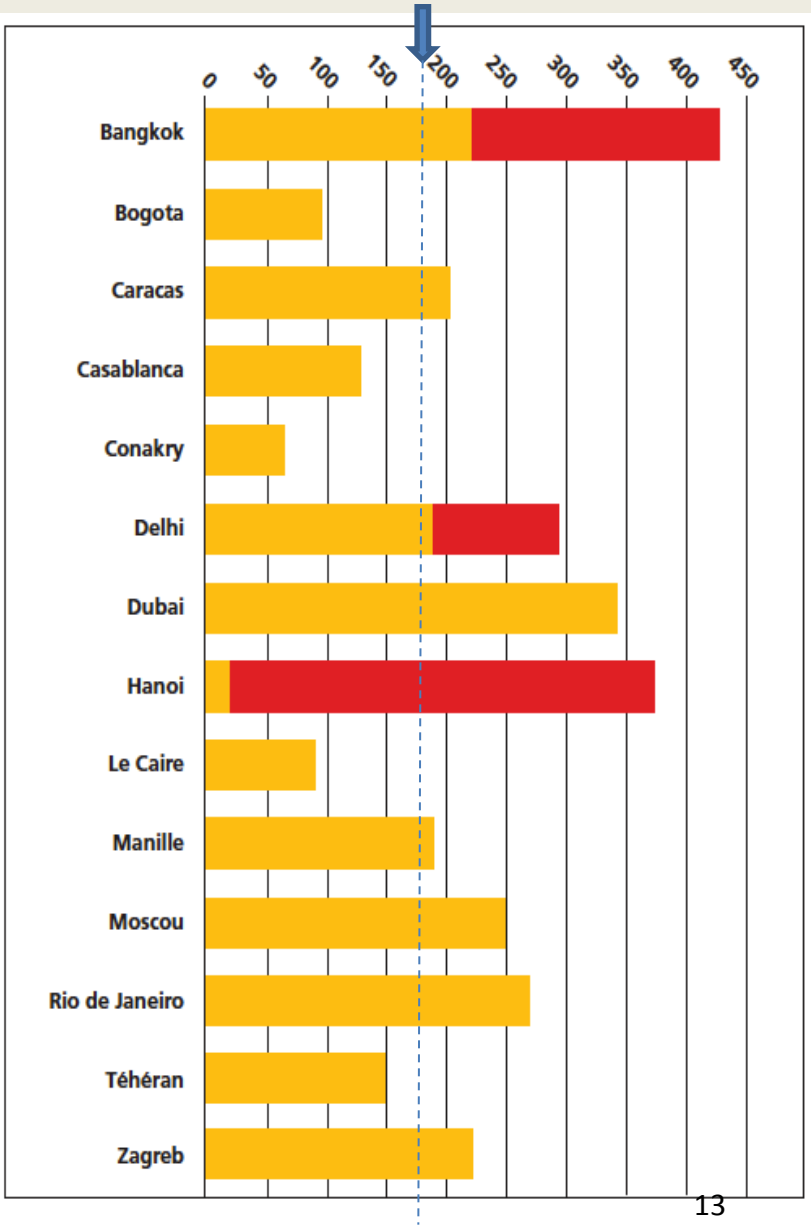
Is the audience present in this room representative of the urban population living and working in the city you're living in ?

Motorisation rate in the world

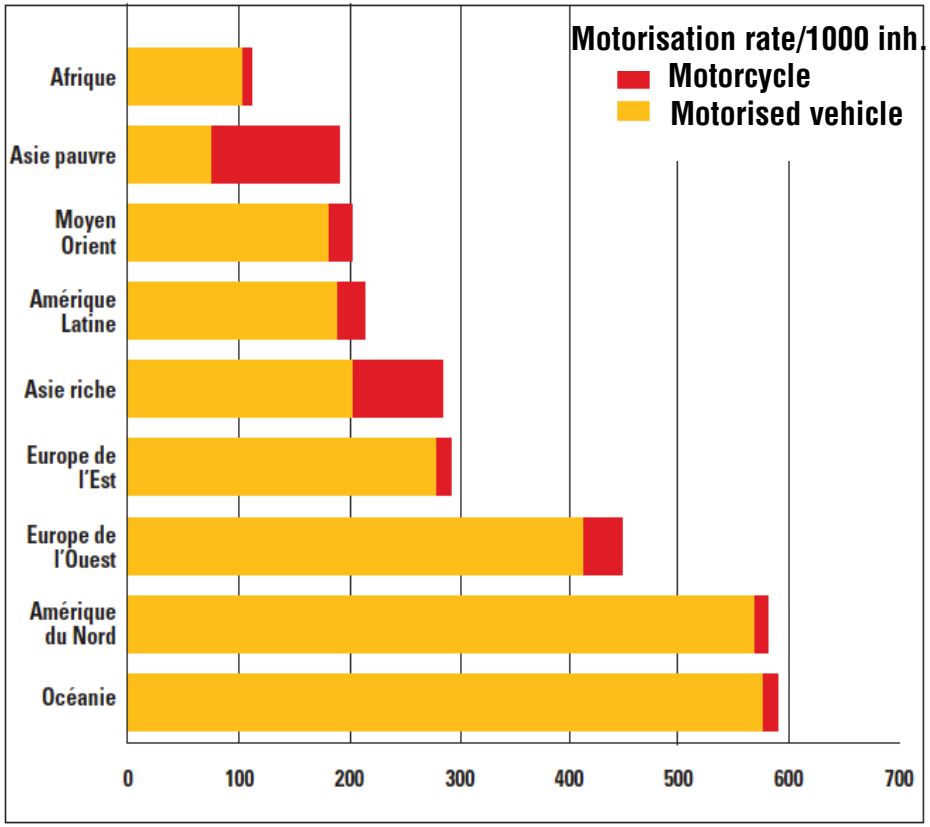
In Amman: ~180/1000 inh. (*)

Unit : vehicles per 1'000 inhabitants

Selected cities:



Per region:



Source : UITP Millenium Cities Database. 2001

(*) Source: Transport and mobility Master Plan for Amman, 2010

Urban mobility : modal preference at individual level

- **We have established that the individual choice for a transport mode largely depends on its availability.**

Survey 4 : At the end of this workshop, if the following transport modes would be available to go back to your place, which one would you chose? And why?

1- Walking
2- Cycling
3- Metro or tramway/LRT
4- Bus or BRT
5- Public minibus / collective taxi
6- Individual taxi
7- Motorcycle
8- Private car

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3rd observation : **Generally, the attractiveness of individual motorized modes is strong.** (So all transport modes are not equal with regards to a user's modal choice.)

Urban mobility : modal preference at individual level

Survey 5 : For the same trip at the end of this workshop, what would be the necessary conditions to convince you to choose another transport mode?

1- Walking
2- Cycling
3- Metro / LRT
4- Bus or BRT
5- Minibus-taxi

Urban mobility : modal preference at individual level

Survey 5 : For the same trip at the end of this workshop, what would be the necessary conditions to convince you to choose another transport mode?

1- Walking : comfortable sidewalks, safe crosswalks, street light, etc.
2- Cycling : moderate and safe traffic, cycle lanes and paths, safe parking, etc.
3- Metro / LRT
4- Bus or BRT : accessible and comfortable vehicles, good territorial coverage,
5- Minibus-taxi frequent and reliable service, moderate price, integrated fare, etc.

Urban mobility : modal preference at individual level

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5- Minibus-taxi

4th observation : **More than a type of vehicle, each mode of transport is a (sub) system composed of vehicles, infrastructures** (dedicated or mixed use), **services**, **access conditions, which must be designed and managed appropriately to ensure the desired service level** (=> planning, development, operation, regulation, financing, pricing, maintenance, monitoring, etc.).

Urban mobility vs urban transport

- Mobility is a right, a need and an ability to physically access different places and successive activity.
- Mobility is a part of everyday life for (almost) all individual.
- Mobility is primarily a demand-oriented concept.

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- Transport primarily refers to supply.
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- Transport supply structures and qualifies the territory, its economic competitiveness, social equity and environmental quality.

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5th observation : **The purpose of mobility is to access a place / service, so a mode of transport is only a tool serving that need of access.**

Urban transport : modal preference at community level

- For each urban area, the question of which transport mode(s) to promote or to invest in arises (similar as for at individual level). Identifying the optimal solution (i.e. that best responds to the general interest) requires careful consideration of the characteristics, advantages and drawbacks of the specific main possible modes :

  - Space consumption (veh. / territory)
  - Social equity (e.g. motorization rate)
  - Road safety (hazard caused / suffered)
  - Environmental quality / public health (public space, air pollution / noise, obesity!)
  - Mobilization of public funds (investment vs operation, direct vs indirect)
  - Energy efficiency (consum. / dependency)

  1- Walking
  2- Cycling
  3- Metro/LRT
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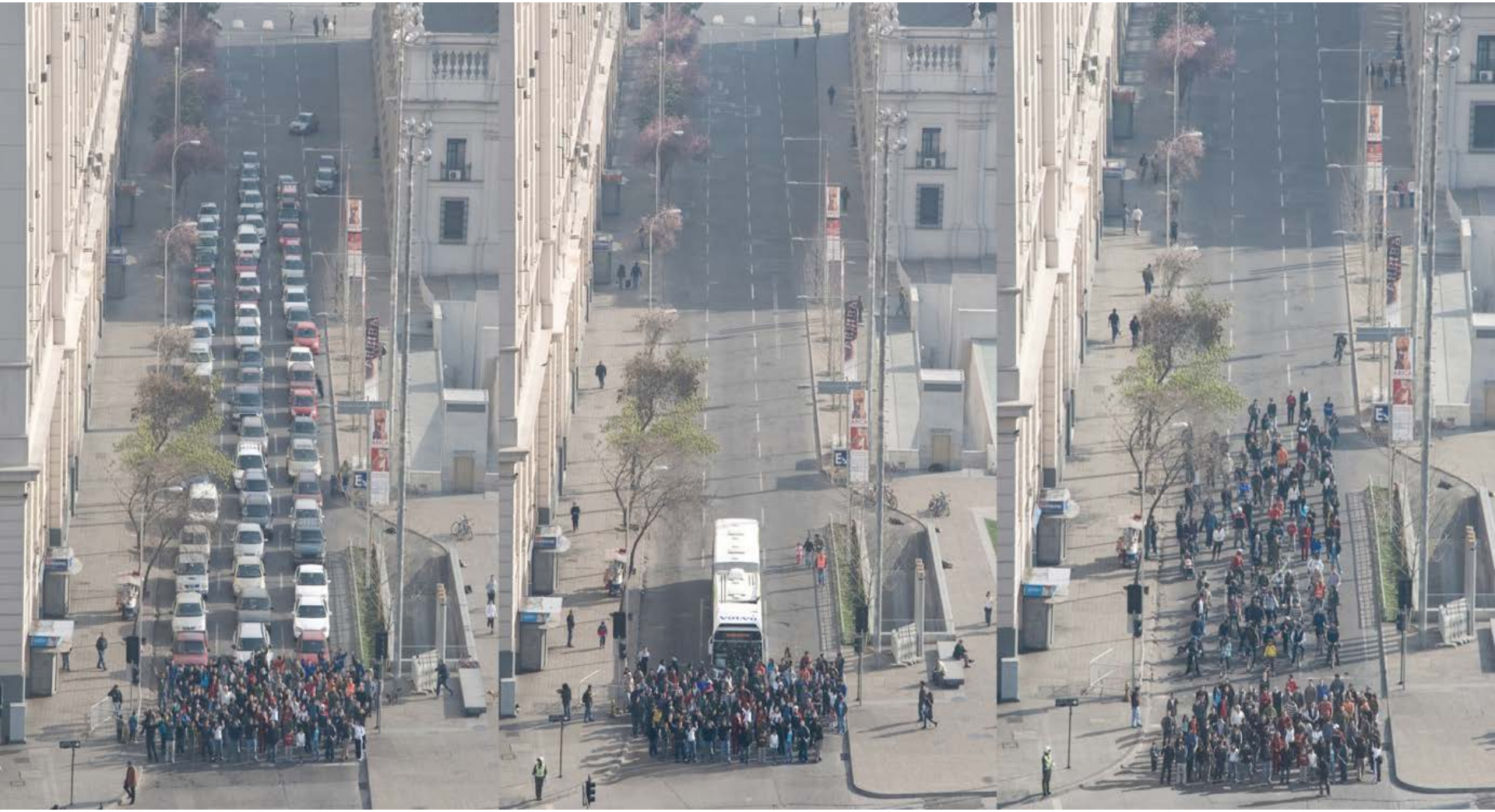
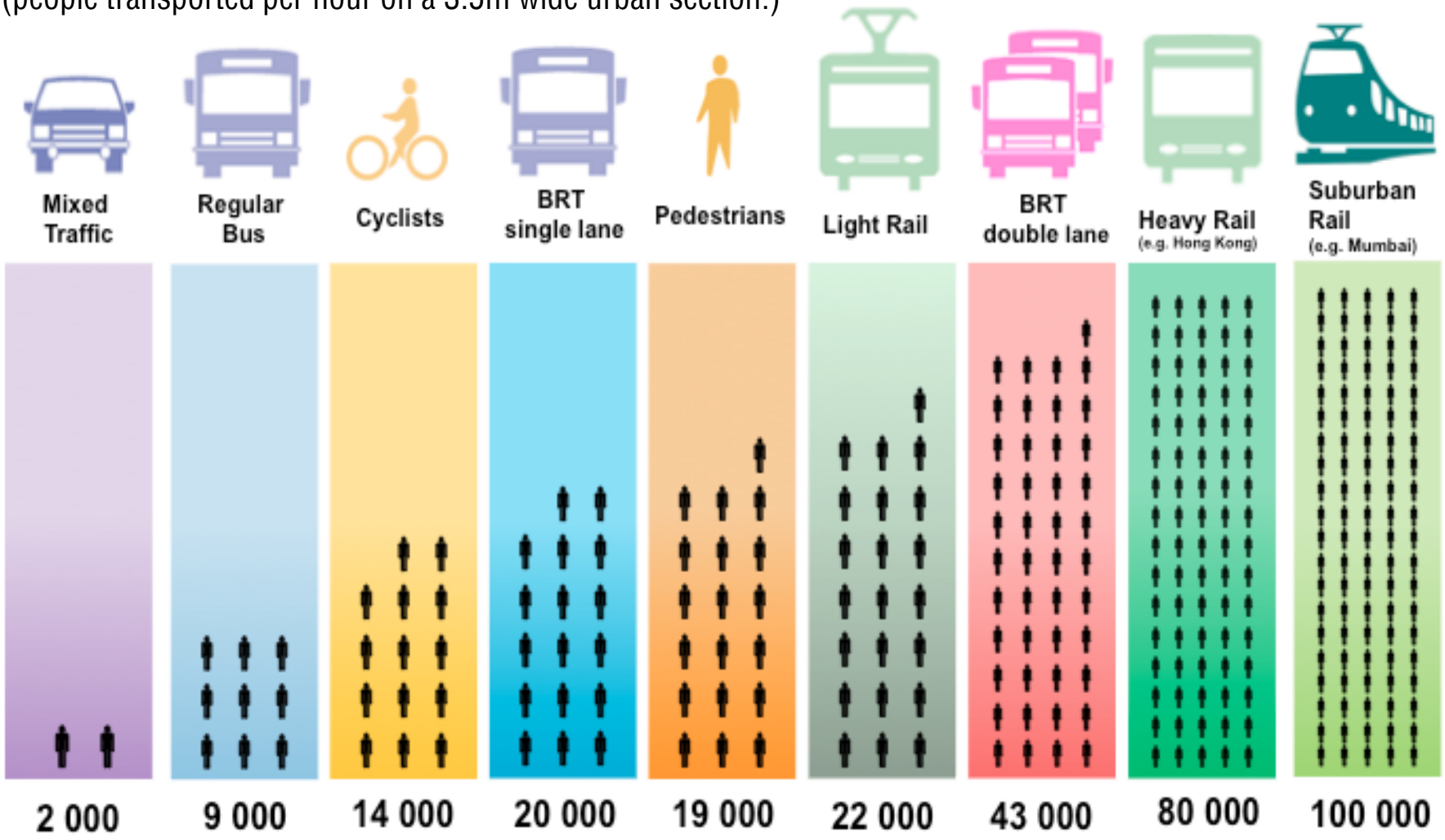
Public space consumption



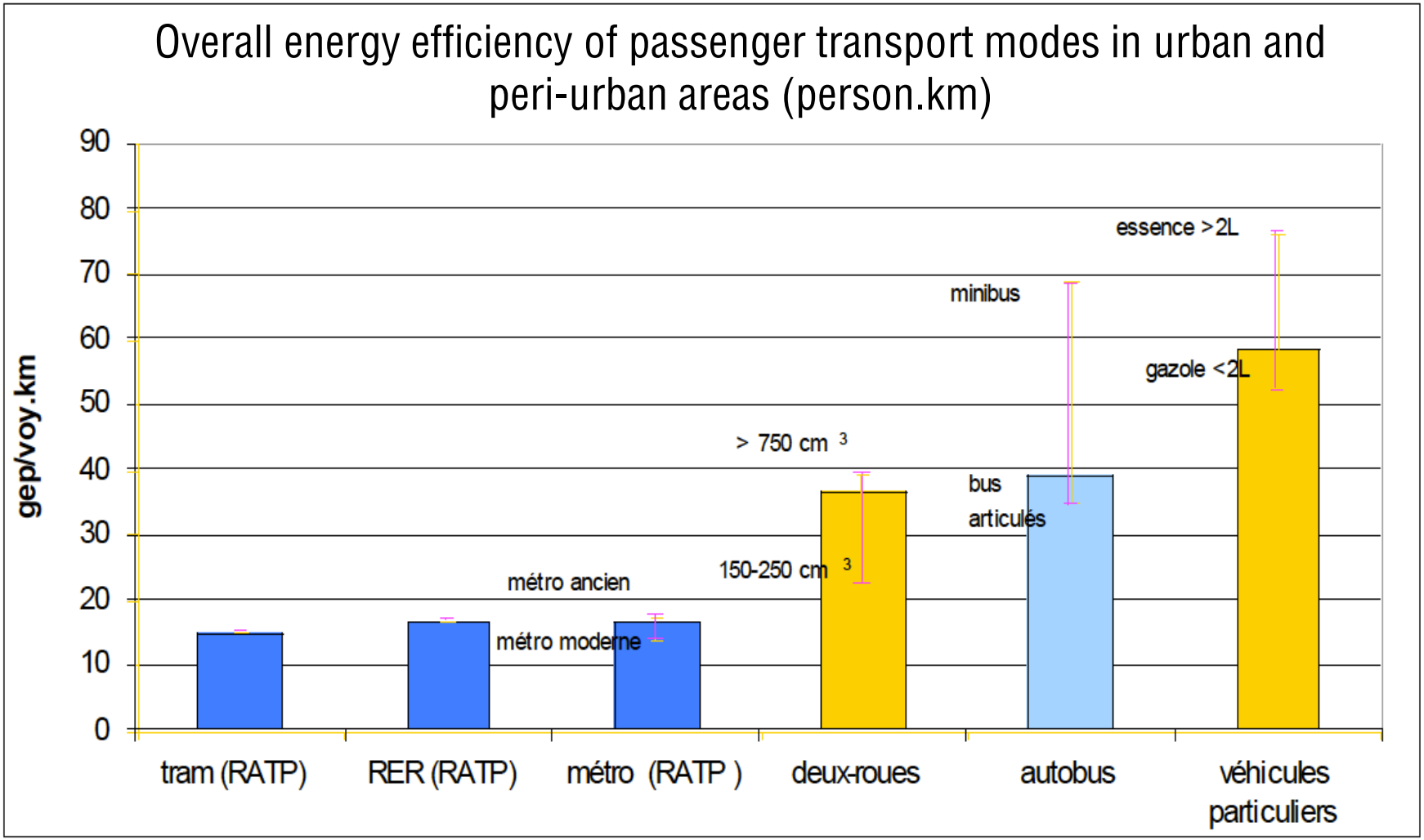
Theoretical capacity of a 3.5m lane/corridor

(people transported per hour on a 3.5m wide urban section.)



Source: Botma & Papendrecht, TU Delft 1991 and own figures

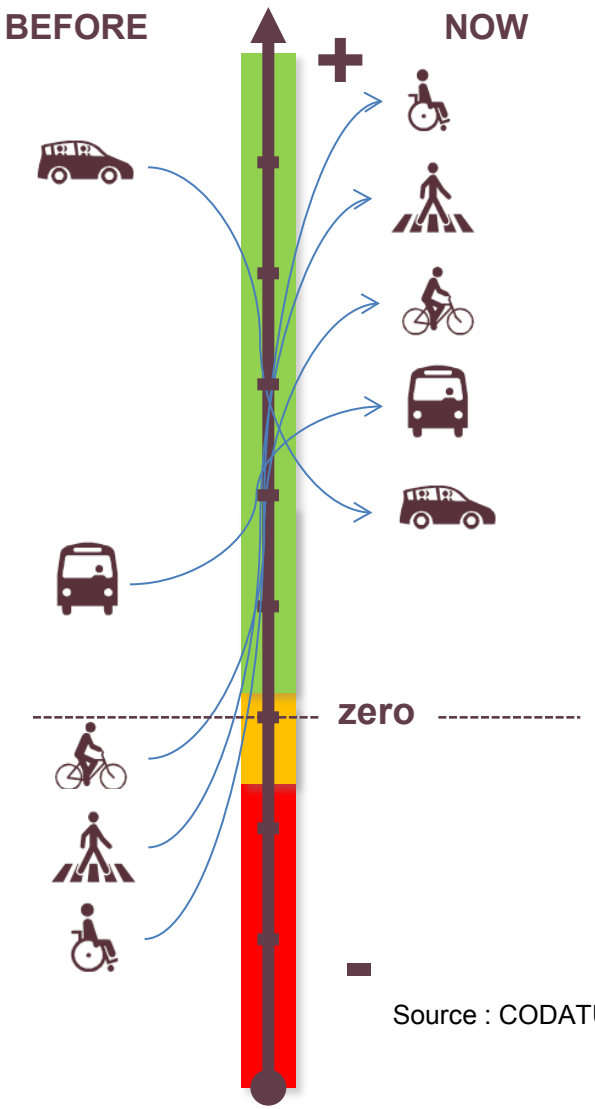
Overall energy efficiency of different transport modes



Urban transport: the general interest and the scale of values

Until now, the priority is often given to:
- the faster,
- the heavier
- the more expensive / rich
- the more pollutant

Now, it's time to prioritize:
- the more fragile
- the slower
- the least expensive
- the least polluting



Source : CODATU

Change the scale of values for the decision makers and the population
=
Change the order of priorities for what concerns public space

⇒ Change the value scale… at all scales!

Urban transport: the general interest and the scale of values

6th observation : **The general interest is not the sum of individual interests!**

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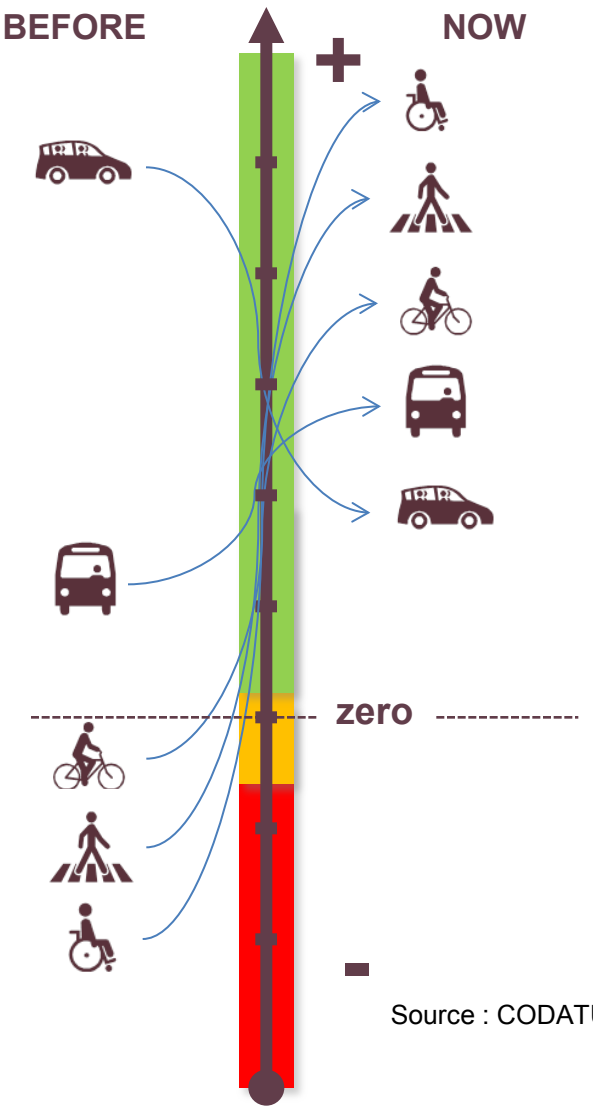

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Need to manage urban transport … In a multimodal way!

7th observation : Since an urban transport system consists of several different modes, **it is the system as a whole that needs to be organized, planned and operated, in order to optimize access to all of the territory and to enhance public space, seeking to minimize the negative externalities.** This calls for balance, choices and sometimes difficult decisions...

This is the very definition of MULTIMODAL approach!

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In essence, to manage urban mobility and to organize urban transport are missions pertaining to the public hand/authority :

- transport infrastructure and services are accessible to all
- high financing needs overall, exceeding individual means
- need for decision between diverging interests
- need to control urban territorial development in the public interest, etc.

What levers to properly manage urban mobility and transport?

Five major levers :

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- Build and operate **transport infrastructure** : roads, sidewalks, railways, bus stations, parking, interfaces (in general), etc.
- Implement & regulate **transport services** and operator(s), network (s), schedules, pricing, etc.
- Regulate & control the vehicles in circulation, at private and public hand
- Inform, educate or train all stakeholders involved

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  => This is the most cost-effective lever for action!
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Plan Program Build Operate Exploit Maintain Regulate Control Observe
Measure Adjust Inform Consult Coordinate Adapter Arbitrate Finance ...

Urban mobility planning and management tools?

- **Sustainable Urban Mobility Plan**, to be integrated with urban development scheme or master plan
- **Traffic and parking plans & public transport restructuring plan or operational plans**, to be established in an integrated way with the urban development plan (or land use plans)
- **Accessibility studies and impacts' assessment,** for large projects and urban facilities**, upstream permissions for parcelling and/or building**
- **Road space functional design** (sharing of public space, urban renewal, road redevelopment, traffic calming, etc.)
- **Network operations, traffic management, traffic light control**, etc.
- **Regulation** through **regulatory and fiscal measures**, etc.

Urban mobility : who is or should be in charge of what ?

	territory, land,town planning housing ….	Infrastructure / transport equipment: Traffic and parking	Infrastructure / transport equipment: Interfaces, stations ...	Public transp services. & freight	Users Vehicles owners
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State, Ministries					
Local Government					
Private, public operators					
Citizens					

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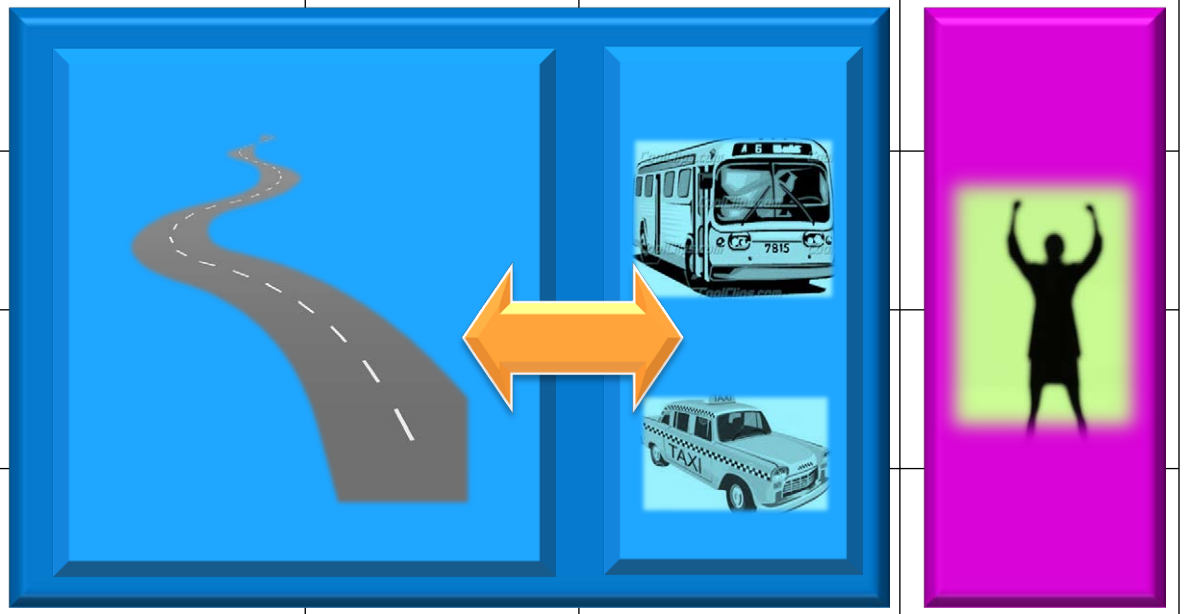

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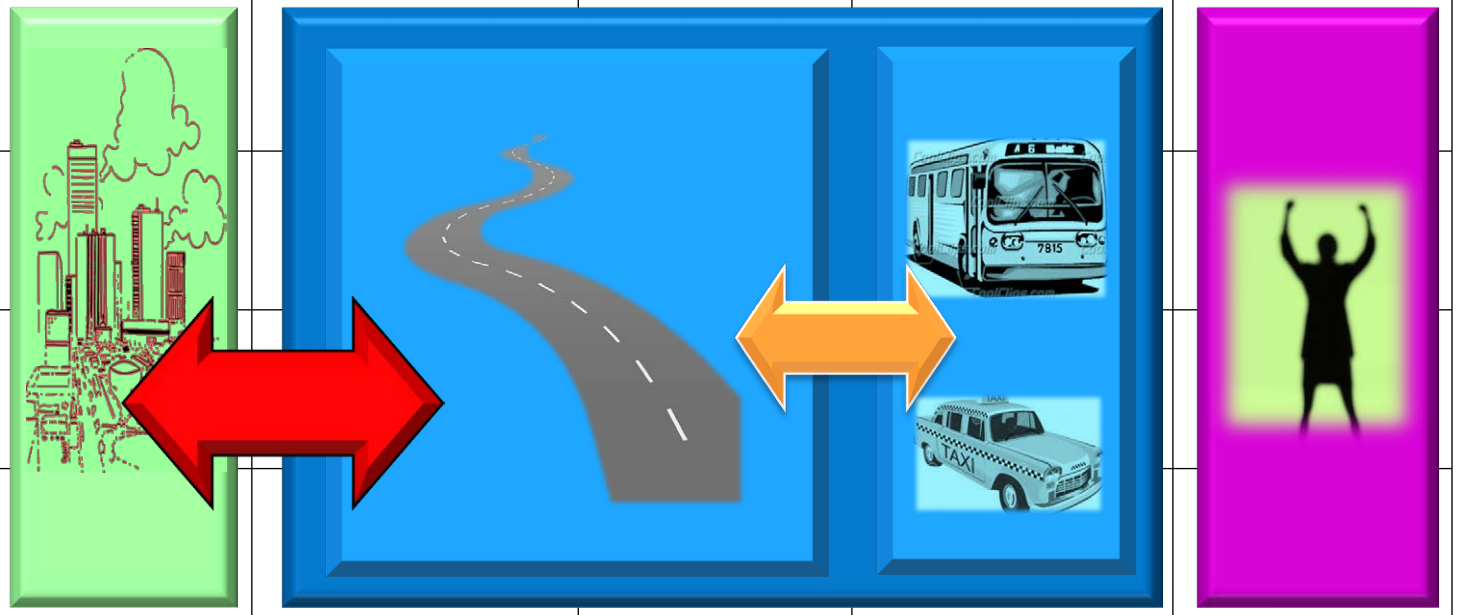
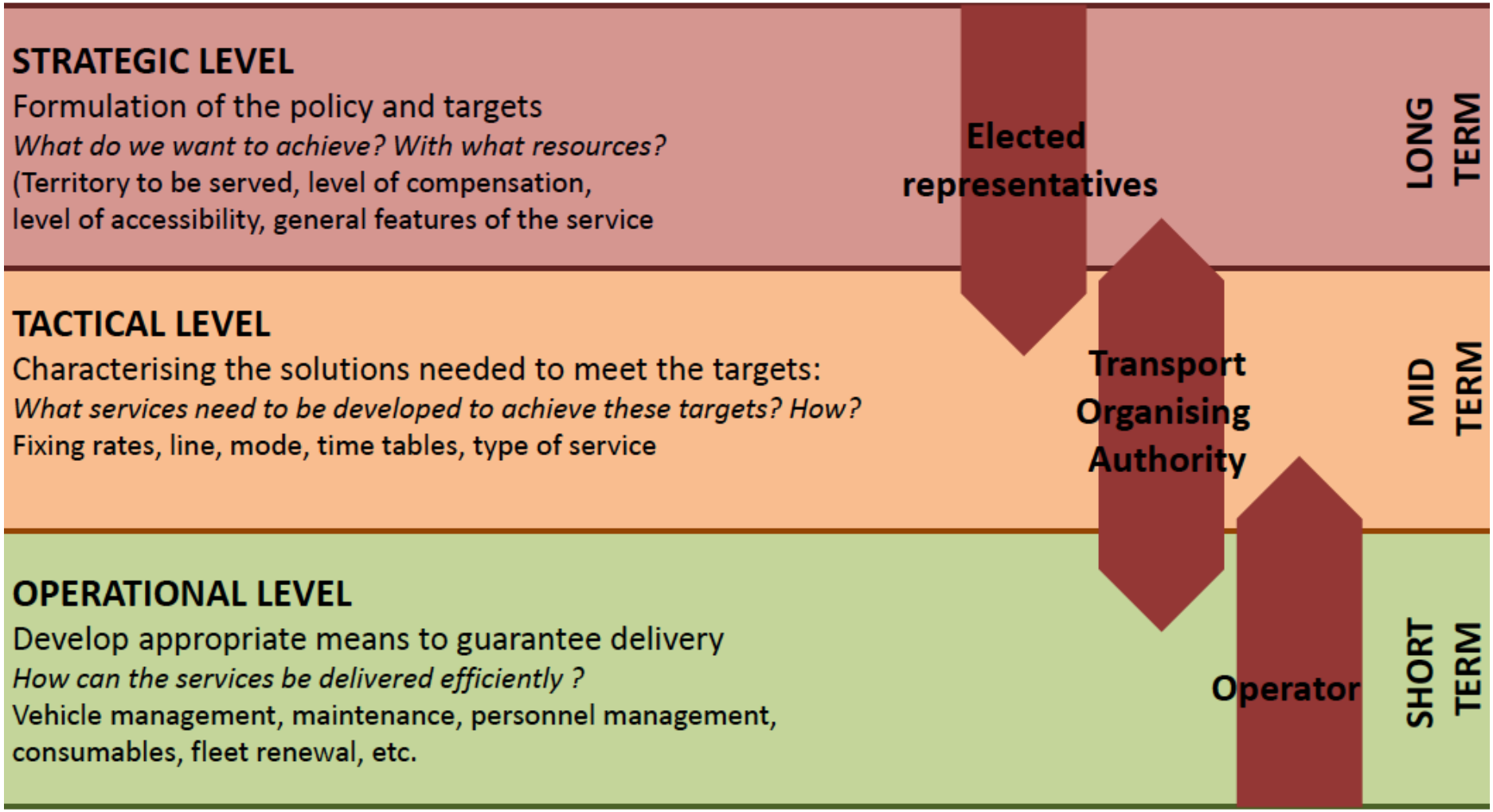
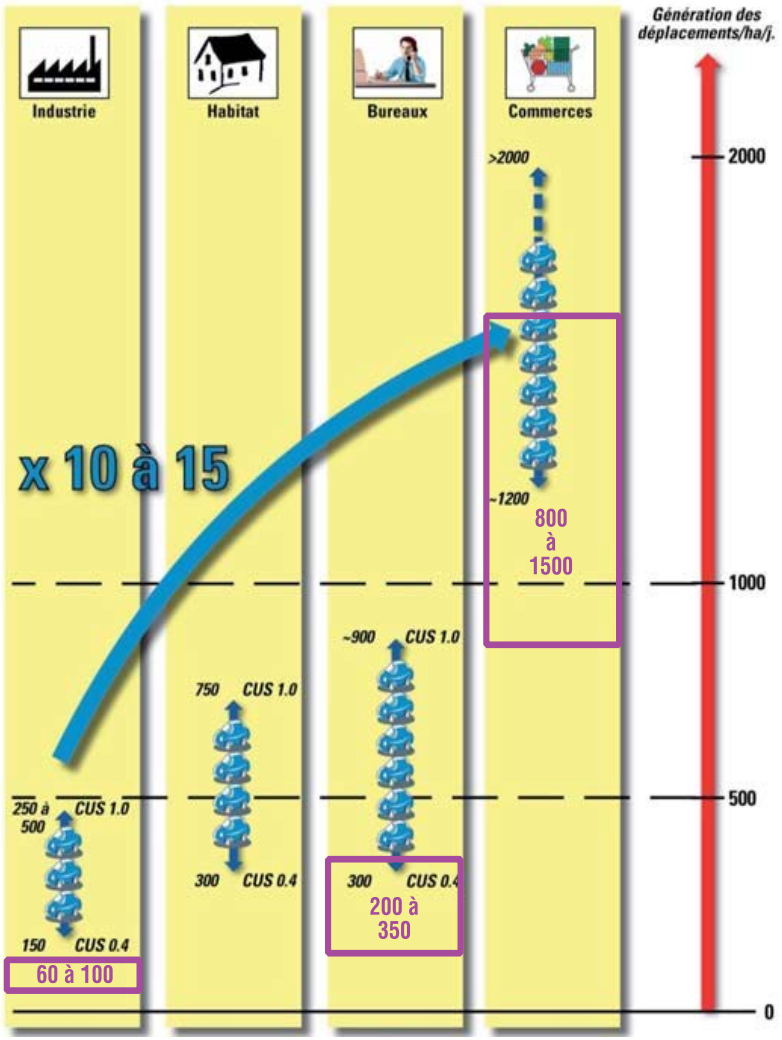


Urban transport planning : three different levels



Source : CODATU

Land use & specific traffic generation



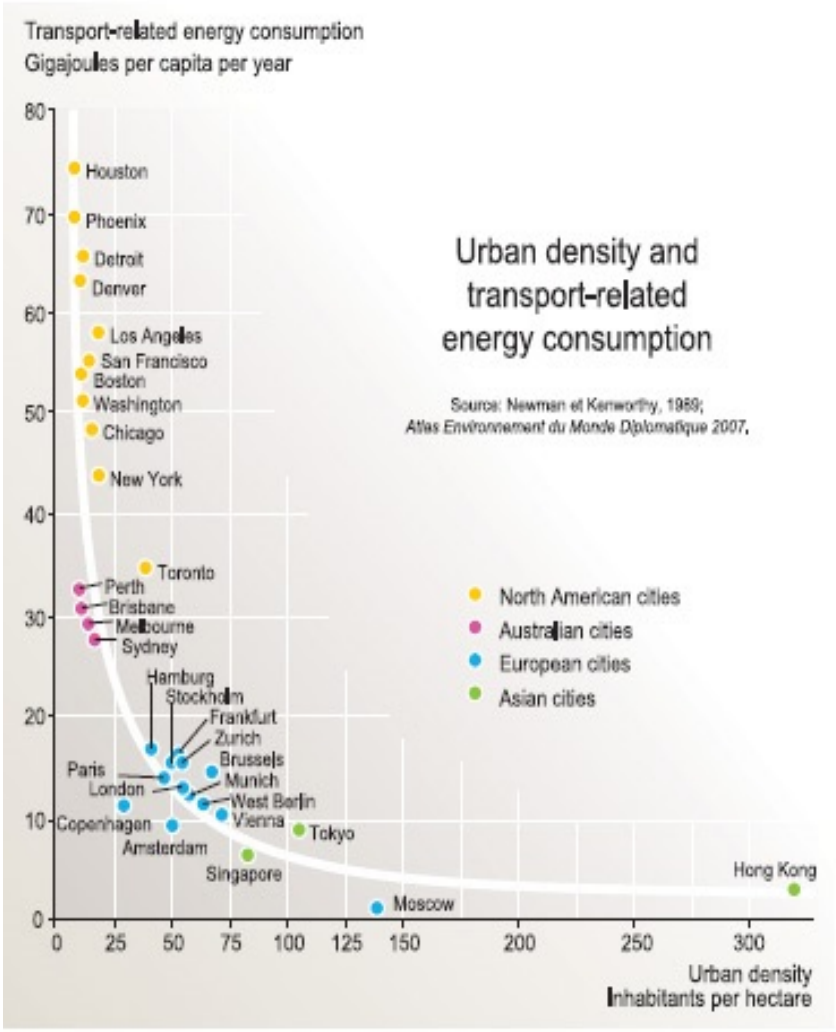
People and vehicle trip generation

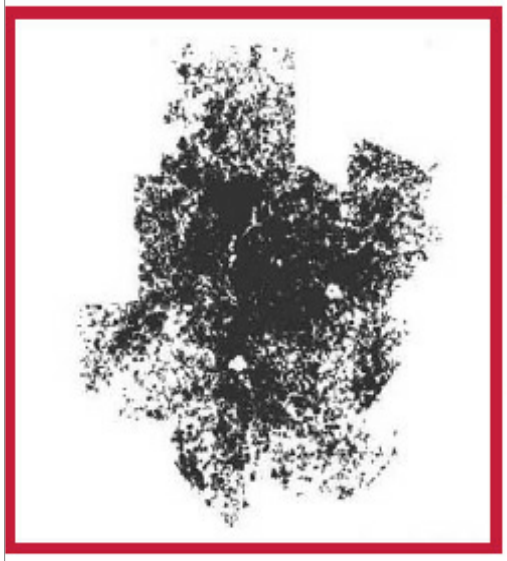
- Ratios in terms of land use
- Rations in terms of number of jobs generated by the project
- Ratios in terms of planned parking spaces

Traffic generation varies strongly depending on specific land use.

This should be considered when planning of land use and when conducting a SUMP…

Relation between urban density and mobility impacts





50 km

Atlanta

Population:
5.25 million

Urban area:
4,280 km^2

7.5 T CO_2/ha /an
(public + private transport)

Barcelona

Population:
5.33 million

Urban area:
162 km^2

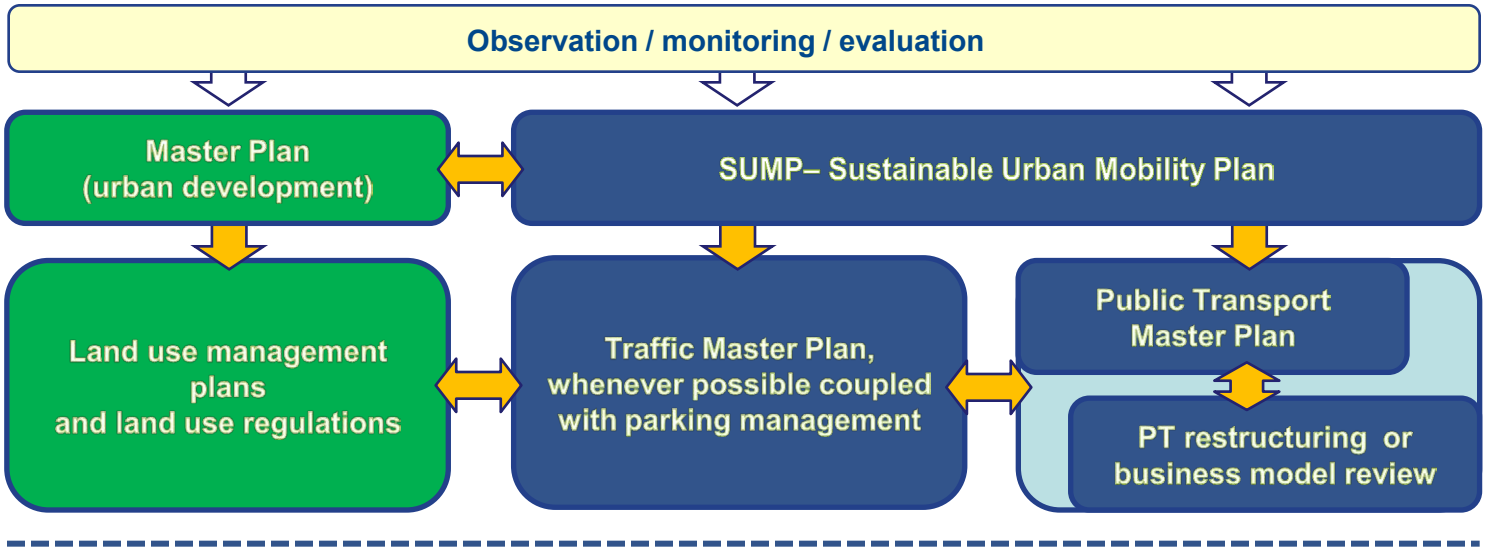
0.7 T CO_2/ha /an
(public + private transport)

Urban mobility and land use, which planning tools to use ?

Planning:

> strategic

> operational



Implementation:

> Urban projects
(investments)

> urban management
(regulation, operation.
maintenance, …)

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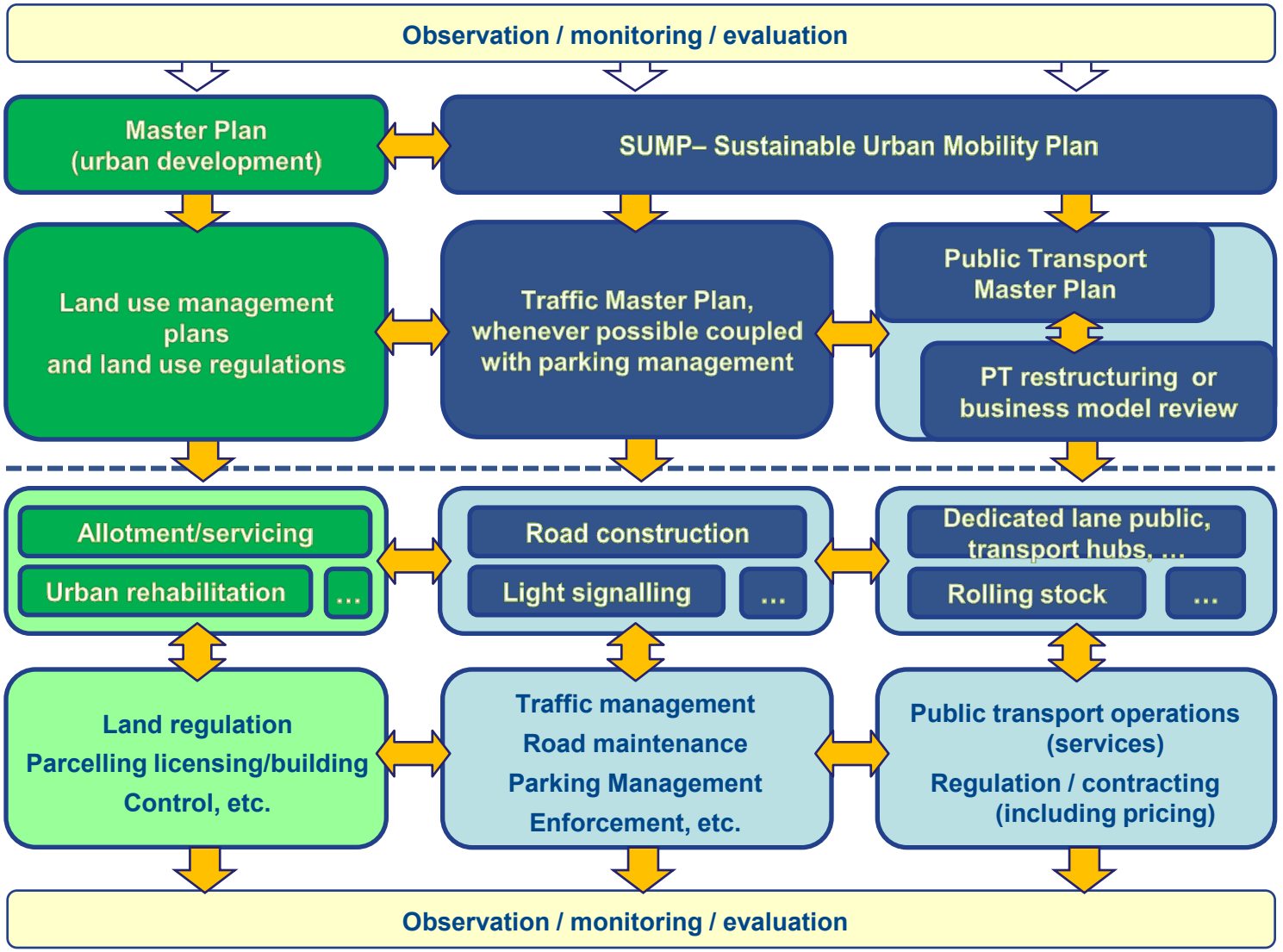

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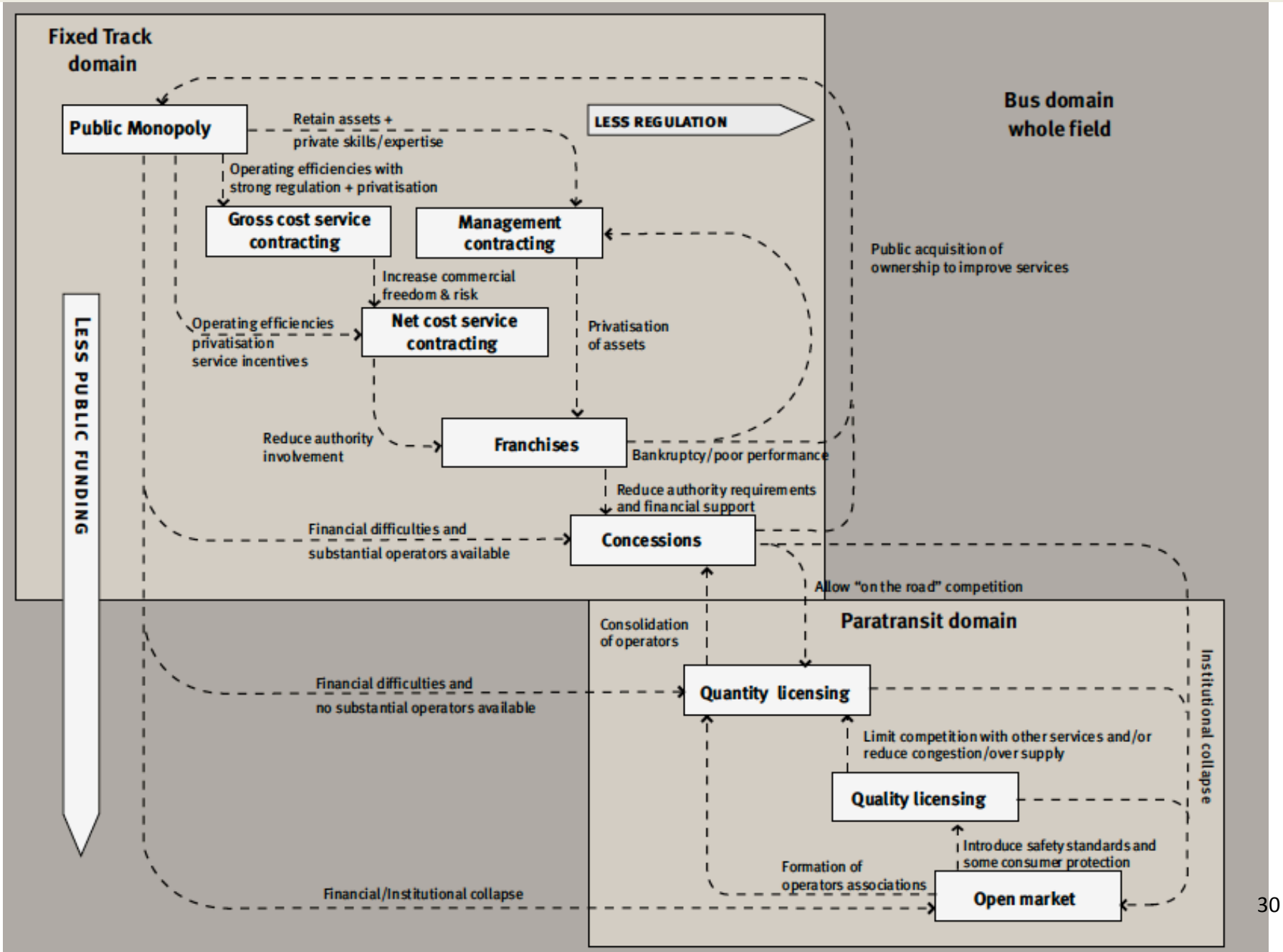
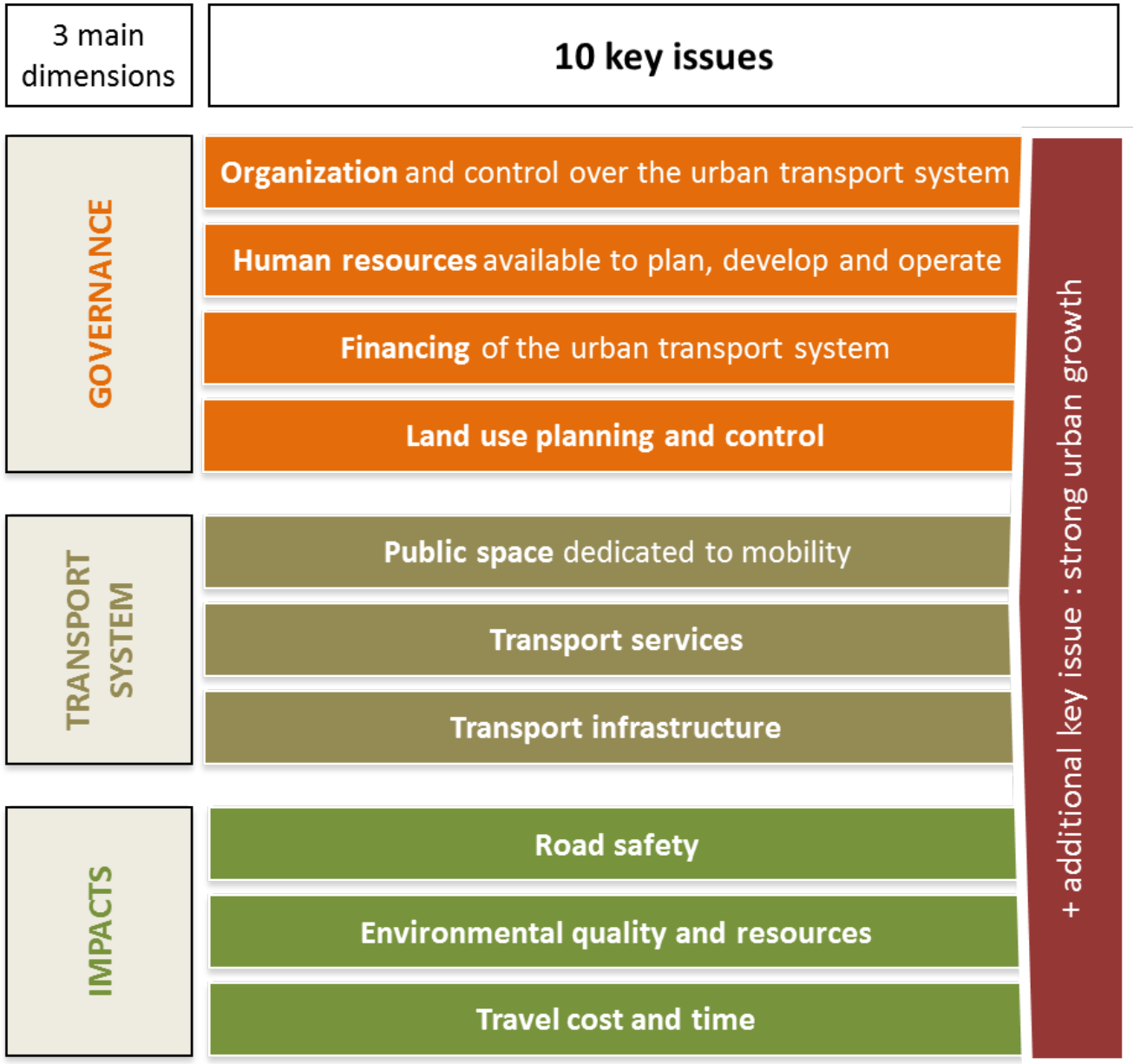
Urban transport competition/regulation : regimes and transitions

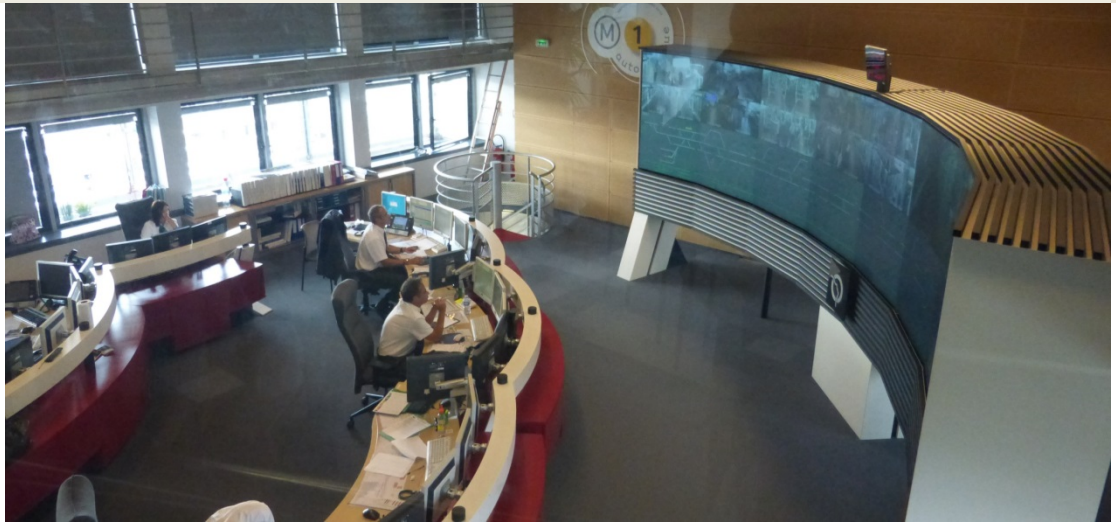


brief overview of the key issues of urban mobility and barriers

Ten key issues impacting on the state of accessibility and mobility



Governance / organization



Governance / human & financial resources

Urban transport system / public space

Urban transport system / public transport services

Urban transport system / transport infrastructure

Urban transport negative impacts

A vision to achieve sustainable urban mobility

- **Users** and **economic stakeholders**… have universal access to an efficient transport system, are aware of their rights and obligations… are conscious of the risks and effects of their travelling… are provided with the possibility to participate/contribute to the development of the transport system.

- The **urban territory** is laid out… to bolster accessibility, quality of life, economic competitiveness and social inclusion, while preserving natural resources. Minimize the number of passenger and commercial trips, travel distances and costs.

- **Public space** is equitably shared among the various transport modes, with particular care given to pedestrians and public transport services.

- **Transport infrastructure** allows for safe and efficient travel, while at the same time pre-serving the surrounding living environment… is resilient to climate change.

- **Transport services** are efficient and financially viable… provide access for all to the entire urbanized territory.

- Clean **vehicles** display low energy consumption and low carbon emissions… improve road safety.

⇒ Maximum positive social and economic impacts… minimum negative externalities, thanks to coherent, efficient and well-funded action by knowledgeable and accountable **institutions**.

Common barriers & guiding principles to help overcome them

- **Scarce financial means** >>> **Implement appropriate funding mechanisms to sustain efficient and inclusive urban transport.**

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- **Scarce financial means** >>> **Implement appropriate funding mechanisms to sustain efficient and inclusive urban transport.**

- **Scarce data, human resources and specific know-how** >>> **Build capacity of a sufficient number of well trained and experienced professionals able to conceive, implement and monitor data informed policies, strategies and projects, according to internationally recognized best practice and locally suited norms and practices.**

Common barriers & guiding principles to help overcome them

- **Scarce financial means** >>> **Implement appropriate funding mechanisms to sustain efficient and inclusive urban transport.**

- **Scarce data, human resources and specific know-how** >>> **Build capacity of a sufficient number of well trained and experienced professionals able to conceive, implement and monitor data informed policies, strategies and projects, according to internationally recognized best practice and locally suited norms and practices.**

- **Unclear responsibilities and lack of coordination** >>> **Put in place a well-conceived governance framework and a clear decision-making process, enforced through proper legislation, favouring integrated trans-sectorial and multimodal approaches, cooperation, and systematic accountability.**

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- **Lack of awareness and political will** >>> **Improve understanding of key urban accessibility and mobility issues and of actual levers for action in order to generate strong and sustained commitment from decision-makers.**

introducing the EASI policy

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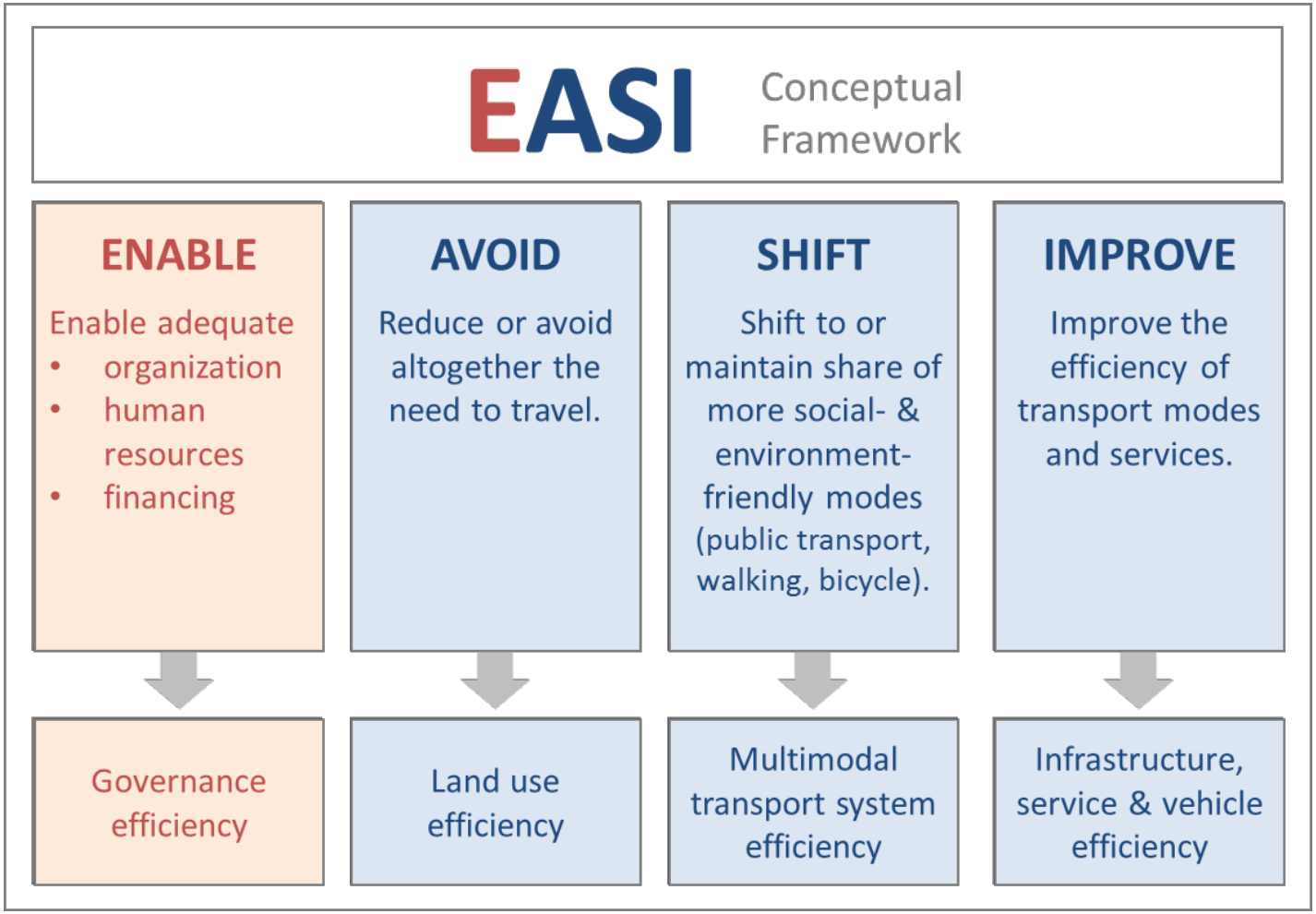

ENABLE - to establish an efficient and responsible governance system, capable of anticipating needs, guiding action and ensuring integrated management and development of urban transport systems.

ENABLE

Enable adequate
- organization
- human resources
- financing

Governance efficiency

E1	To define, adopt and implement, at central government level, a **national urban transport strategy for urban mobility** that ensures the sustained development and management of urban transport systems.
E2	To ensure that the main urban transport public responsibilities at urban/metropolitan level are assigned and carried out.
E3	To set up an **entity in charge of urban transport** planning and of guiding and coordinating public action aimed at the provision of the multimodal urban transport system.
E4	To empower all institutions in the urban transport sector with adequate **human resources.**
E5	To increase **financial resources** allocated to urban transport systems and to ensure the availability of long-term funding for urban transport.
E6	To create the preconditions for continued **civil society** participation in the development of urban transport systems.
E7	To enhance the involvement of the **private sector** in the provision of transport infrastructure and services.

AVOID – to minimize the need for individual motorized travel and promote public transport and non-motorized mobility through better urban forms and land use.

AVOID

Reduce or avoid altogether the need to travel.

Land use efficiency

A1	To **plan for urban forms and land use** that minimize the need for individual motorized travel and promote public transport and non-motorized transport modes.
A2	To **deploy transport infrastructure and services** in a manner that promotes sound urban forms and land use.
A3	To strengthen **land use management**.

SHIFT – to maintain or increase the modal shares of public transport and non-motorized transport modes such as walking and cycling.

SHIFT

Shift to or maintain share of more social- & environment-friendly modes (public transport, walking, bicycle).

Multimodal transport system efficiency

S1	To adopt and systematically introduce, at all levels and scales, a **multimodal approach** to the development and management of urban transport systems.
S2	To develop and maintain for each urban area a **pedestrian network** that is continuous, safe and accessible for all throughout the day; and to develop and maintain bicycle paths with similar characteristics.
S3	To provide an **integrated and hierarchical public transport system** that is efficient, reliable and capable of serving the needs of constantly evolving populations and the urban economy.
S4	To plan and implement **mass transit systems** that operate on exclusive infrastructure and can form the backbone of the urban public transport system.
S5	To **enhance the level of service provided by paratransit operators** by way of full integration in the public transport system, which requires restructuring, modernizing and promoting them.

IMPROVE – to improve the efficiency and safety of transport modes while minimizing their environmental footprint.

IMPROVE

Improve the efficiency of transport modes and services.

Infrastructure, service & vehicle efficiency

I1	To improve planning, operation and maintenance of **urban roads** taking into account and balancing the needs of all transport modes, and keeping the use of individual motorized vehicles under check.
I2	To define and implement realistic and gradually more demanding requirements in terms of **fuel components, energy efficiency and gas emissions**.
I3	To promote **environmentally responsible behavior** by all urban transport stakeholders, by strengthening technical control of vehicles and by keeping the public informed of the negative externalities of individual motorized transport.

time to discuss

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Thank you for your attention !

Martin Stucki (martin.stucki@transitec.net)
EuroMed RRU Urban Transport Expert