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# SUMP Toolkit

## Annotated Outline for Sustainable Urban Mobility Plans (SUMP)

SUMP development guidance resources for developing and transition countries

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**April 2020**

## Context of the Publication

This publication has been developed within the MobiliseYourCity (MYC) Partnership in collaboration with the projects EUROCLIMA+, funded by the European Union and “Advancing climate strategies in rapidly motorising countries (TRANSfer)”, funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

The EUROCLIMA+ programme promotes environmentally sustainable and climate-resilient development in 18 Latin American countries through regional policy dialogue and climate action in six sectors. In urban mobility, EUROCLIMA+ supports the development of National Urban Mobility Policies and Programmes (NUMP), Sustainable Urban Mobility Plans (SUMP) and pilot projects through 19 projects in 14 partner countries and cities. A specific focus of EUROCLIMA+ is support the implementation of NDCs which Latin American countries have committed themselves to in the context of the 2015 Paris Climate Agreement.

MobiliseYourCity is a partnership for integrated urban development planning in emerging and developing countries under the UN Marrakesh Partnership for Global Climate Action. MobiliseYourCity supports and engages local and national partner governments in improving urban mobility planning & finance by providing a methodological framework and technical assistance, through capacity building, and by enabling access to funding at both local and national levels. Particular attention has been paid to the methodological and advisory frameworks related to National Urban Mobility Policies and/or Programs (NUMPs) and Sustainable Urban Mobility Plans (SUMPs) that serve as the basis for the promotion of investments and development of attractive mobility services.

MobiliseYourCity is a multi-donor action, jointly co-financed by the European Commission's Directorate-General for International Cooperation and Development (DG DEVCO), the French Ministry of Ecological Transition and Solidarity (MTES), the French Facility for Global Environment (FFEM), and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). The initiative is implemented by its founding partners ADEME, AFD, CEREMA, CODATU, and GIZ. Besides contribution to the international climate process, MobiliseYourCity contributes to the UN's Agenda 2030, specifically Sustainable Development Goal (SDG) 11: Make cities inclusive, safe, resilient and sustainable. The objectives of which are to:

- Enable transformational changes towards more inclusive, liveable, and efficient cities.
- Foster more comprehensive, integrated and participatory urban mobility planning (local & national levels).
- Target reduction of transport related GHG emissions in participating cities (>50% until 2050).
- Link planning with agreement on investments and optional use of financial assistance.
- Make use of innovative planning techniques and digitalization and promote state-of-the-art mobility and transport technologies.

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# PURPOSE AND HOW TO USE THIS DOCUMENT

Sustainable Urban Mobility Planning (SUMP) is a process based on the definition of common objectives and use of collaborative planning tools to deal with design, implementation, financing, and monitoring of mobility-related measures and projects. This mobility planning approach is being implemented with success in a variety of contexts, at diverse scales, in a wide range of cities and regions in Europe and around the world.

At the end of such a comprehensive transport planning process, a plan shall be delivered, which will constitute the SUMP of a city or metropolitan region. The final SUMP document shall summarize the main results of the entire SUMP process, which are the main mobility strategies and the implementation plan for short, medium- and long-term mobility policies and measures. This content is usually approved by urban policy makers.

This document is part of the MYC SUMP Toolkit and is an amendment to the MYC Sustainable Urban Mobility Plan (SUMP) Model Terms of Reference (2020). Both documents are aimed at technical planners and consultants in cities where integrated transport concepts called SUMP (Sustainable Urban Mobility Plans) are being developed.

The document provides information on how a SUMP (or other related strategic mobility planning document) is best structured and what information it should contain in order to achieve compliance with international SUMP standards. Structure and methodology follow the MYC SUMP development approach.

There are two main chapters in this document: I) the annotated table of contents, and II) a standard template of table of contents.

- The annotated outline should help planners to orient themselves. It presents the principle structure as well as explanations towards the core contents, the results of the planning process, and additional information in the appendices. The annotations are technical instructions and are **represented by grey text**.
- The standard table consists only of the basic elements and is intended to be used for the writing and development process of the planning document.

Elements such as maps, tables, figures, descriptions etc marked as “**basic**” exemplify minimal requirements for producing a high-quality SUMP. For a better understanding of the individual chapters, additional examples of existing good planning documents have been included and are marked as “**inspirational examples**”.

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# I. ANNOTATED TABLE OF CONTENT

## Cover page

Title, may be branded

## Imprint

(Logo) Originator: city, department

## Foreword

Introductory statement from a senior city/regional/national decision maker

## 1 Executive summary

Suggested length: 10-15 pages.

Provide a public (easy to read) and a restricted (with financial and institutional data) version of the summary

The executive summary should include the following sub-sections. Add information as needed.

### 1.1 Background of the SUMP

### 1.2 Objective and scope

### 1.3 Methodology

### 1.4 Document structure

Describe how the document is organised

Include summaries about each chapter

### 1.5 Key results

### 1.6 Conclusions and recommendations

## 2 Process and management structure

This chapter should present three main aspects: context of developing the SUMP, process overview, and stakeholder involvement.

- It puts the SUMP into the local context,
- It summarizes the SUMP development process,
- It shows the management and steering structure in the local administration, and
- It identifies which larger stakeholders were involved and at what degree.

### 2.1 Context of developing the SUMP

This part should start with a presentation of:

- Background and general purpose of the SUMP

- Short summary of legal, regulatory framework and related planning documents (including national urban mobility policies and programmes as well as relation to other local, sub-national and national plans, local frameworks in the city and the metropolitan area).

## 2.2 Process overview

This subchapter should describe:

- Time horizon of the SUMP (and its justification)
- Territorial scope, in other words the SUMP study area (and its justification)
- Team and development process

### a) The SUMP time horizon:

Definition and justification of the time horizon of the SUMP should appear here. SUMP implementation horizons in order to encourage long-term planning are the following:

- Short-term: 2-3 years
- Medium-term: 5 years
- Long-term: 10-15 years.

These horizons may be adjusted to match local conditions, where an urban development plan exists or is undergoing development.

### b) The SUMP study area:

Definition and justification of the area considered for the SUMP should appear here. Ideally, the study area is the 'functional urban area' which is defined by the major commuter flows to the urban centre. It is normally the area including the city and its suburbs or respectively the metropolitan area to be coherent with the mobility demand. For practical reasons, the geographic scope may need to be adjusted to match administrative boundaries but should at least include the city centre.

### c) Team and development process:

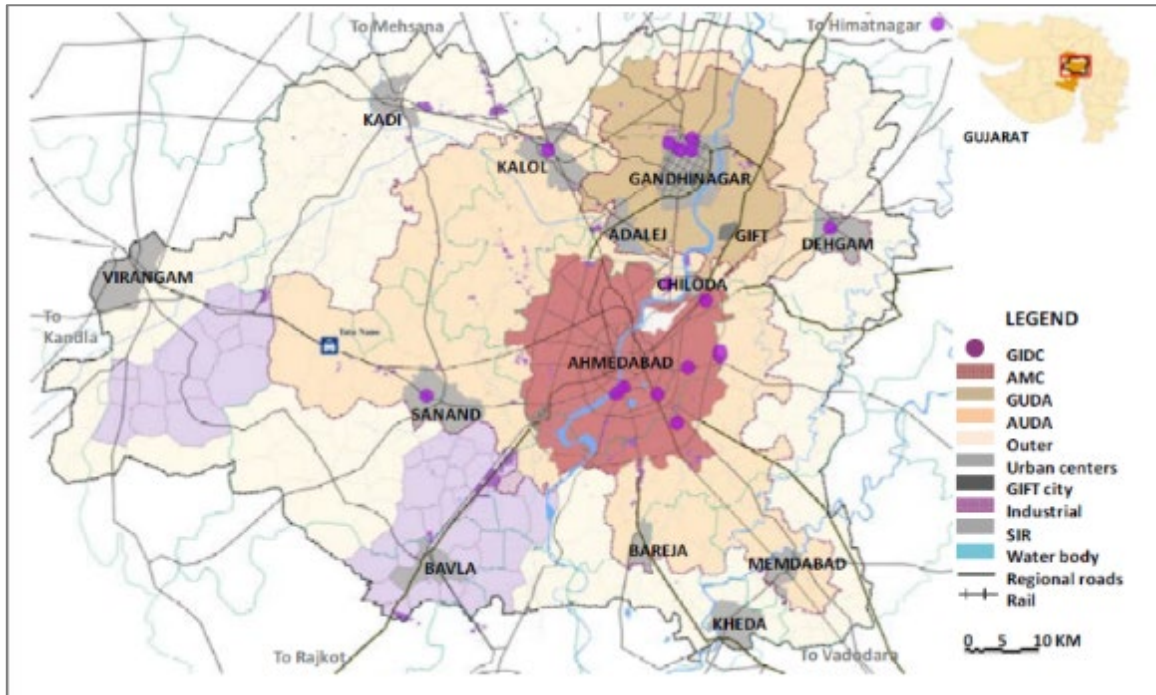
Provide information on which organisation / department / key personnel were responsible for the management of the process.

**Inspirational example 1. Example of SUMP timeframe and map representation of existing and new infrastructure. Note: Source: Malmö SUMP (2013)**

- A** 2000  
The Öresund Bridge is trafficked by passenger trains, freight trains and motor vehicle traffic. The Öresund Line is connected to the Continental Line, and Yttre Ringvägen is first trafficked.
- B** 2009  
The demo bicycle lane between Heleneholmsstigen and Slotsgatan is opened. Different innovations are tested and evaluated.
- B** 2010  
Bike & Ride is opened in Hyllie.
- C** 2010  
The City Tunnel is opened, connecting Malmö C to two new stations – Hyllie and Triangeln.
- C** 2012  
Trafikplats Naffentorp började trafikeras.
- C** 2013  
40 km/h is expanded in Malmö within Inre Ringvägen and in Tygelsjö. In 2007, a test is conducted in central Malmö and in 2010, it is made permanent.
- D** 2013  
Östra Centralplan is reconstructed with a new public transport bridge over the canal as well as improved infrastructure for bicycles.
- E** 2014  
Bike & Ride is opened at Malmö C.
- E** 2014  
The city bus traffic starts to traffic Rådmansgatan at the station Triangeln.
- F** 2014  
Malmöexpressen starts to traffic the stretch Stenkällan to Västra Hamnen via Rosengård and Malmö C.
- G** 2015  
The new traffic interchange Spillepengen is trafficked.
- H** 2015  
The Trelleborg Line is trafficked with local trains. 30 minutes between Trelleborg and Malmö C.
- J** 2015–2025  
Expansion of a logistical centre for freight traffic in Norra Hamnen. New bridges and improved accessibility for all transport modes.
- 2016**
- K** 2016 –  
Bike sharing system introduced in Malmö.
- K** 2017 –  
Trafficking of the Malmö Ring with passenger traffic. Opening of the stations Persborg, Rosengård and Östervärn.
- L** 2020 –  
A new bascule bridge as well as new bridges over Södra Varvsbassängen for walking, cycling and public transport.
- M** 2020 –  
The Lomma Line – Improved capacity in order to enable passenger trains with new stations in Furulund and Lomma.
- N** 2020 –  
Expansion of railway in Flackarp – Arlööv from two to four rails in order to improve capacity between Malmö and Lund. In Arlööv, the station should expand into a commuting station with both local and regional trains.
- O** 2020 –  
Opening of the Fosle station.
- P** 2021 –  
First stage of introduction of trams in Malmö.
- Q** 2030 –  
The Öresund metro as a new connection for passenger traffic between Malmö and Copenhagen.
- R** 2030 –  
The Simrishamn Line – 60 minutes by train between Malmö and Simrishamn, new stations in Staffanstorp, Dalby, Veberöd, Sjöbo, Tomelilla, Simrishamn.
- S** 2035 –  
Station for high speed trains.



**Basic element 1. Map of the functional area.** *Note: Source, Integrated Mobility Plan for Greater Ahmedabad Region 2031*



## 2.3 Stakeholder involvement

This subchapter lists the key stakeholders that have taken part in the SUMP development process, as well as describes their level of involvement during the process (stakeholder mapping).

Key stakeholders might include:

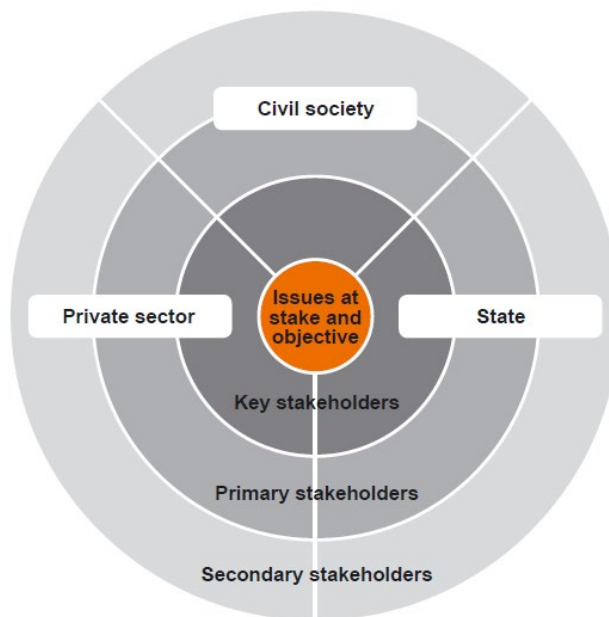
- Leading municipal or inter-municipal/metropolitan department in charge of urban mobility/transport (as main counterpart)
- Other municipal departments with a stake in urban mobility planning, such as Departments of Finance, Environment, Public Works, Land-use Planning, Health, Education, etc.
- Public Transport Operator/s and/or Public Transport Authority
- Informal transport representatives
- Police

Further relevant partners can be:

- Academia / research institutes and think tanks
- Consulting companies / selected private sector stakeholders and associations
- Civil society and non-governmental organisations (NGOs)
- Chambers of Commerce
- Retailers / retail associations
- Small business representatives
- Unions (transport workers, others) / association for disabled people
- Representatives from the metropolitan region / neighbouring cities or regions
- Financial institutions / potential donors / foundations
- Lobby groups or associations linked to specific transport modes / specific themes (road safety, ITS; smart cities, etc.)
- Schools
- Media

The reason, nature and content of stakeholder involvement should be summarized. Participation structure could be presented in a table or a figure such as the following one:

**Inspirational example 2.** Stakeholders visualized in an “onion” assigning actors to one of three sectors (public sector; civil society; private sector) (Template from Tool: Stakeholder Map)

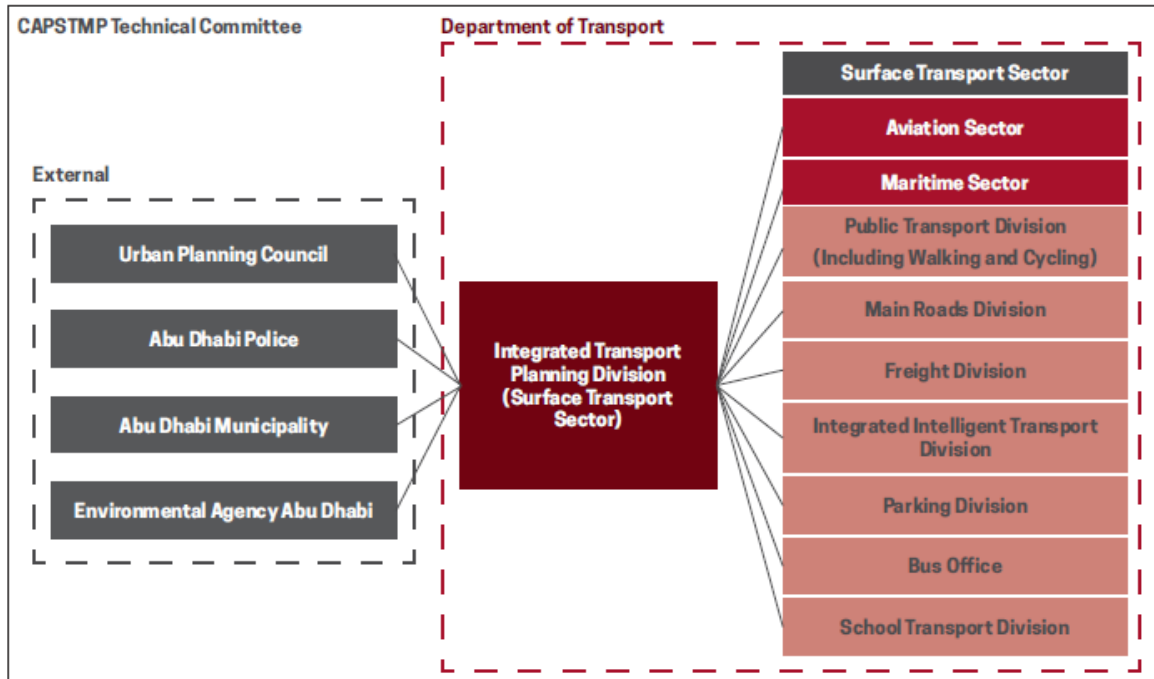


[http://transferproject.org/wp-content/uploads/2016/11/NYP\\_GIZ\\_TRANSfer\\_Tool-1-4-1\\_Stakeholder-Map.pdf](http://transferproject.org/wp-content/uploads/2016/11/NYP_GIZ_TRANSfer_Tool-1-4-1_Stakeholder-Map.pdf)

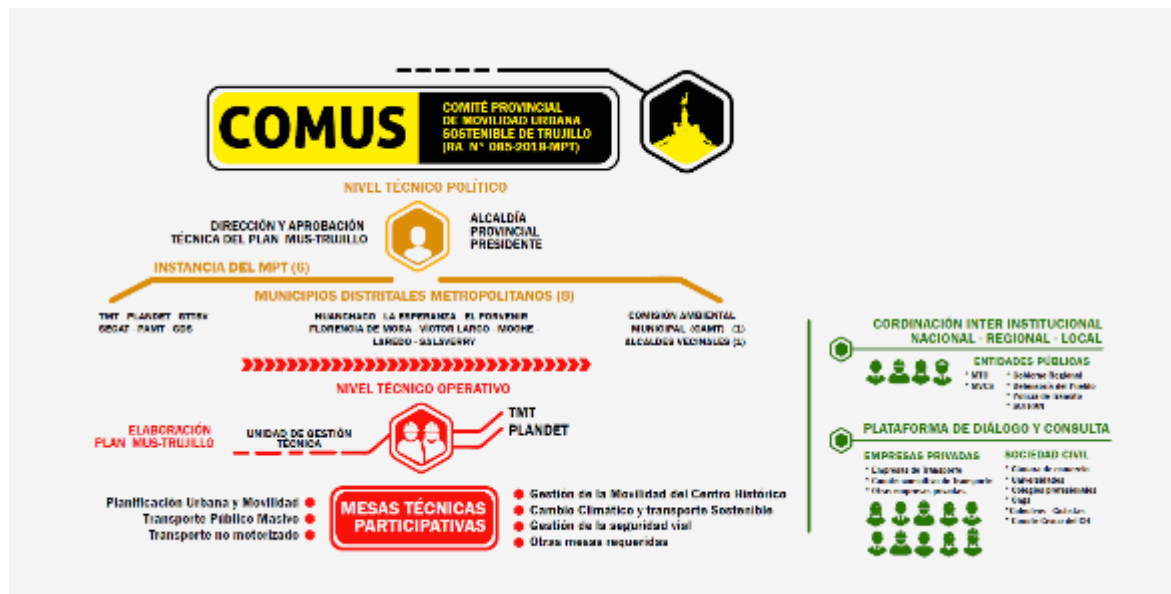
**Basic element 2.** Stakeholders and their involvement in the SUMP process (Template). List the identified stakeholders and identify their level of involvement.

Involvement in SUMP process	Type of stakeholders			
	Political support	Transport network competence	Technical expertise	Public support
<b>Strong involvement</b>	<i>City mayor</i>	<i>Public transport company</i>		
<b>Medium involvement</b>			<i>University</i>	
<b>Low involvement</b>				<i>Police</i>

**Inspirational example 3.** Presentation of stakeholder involvement. *Note: Source, Capital Surface Transport Master Plan Abu Dhabi*



**Inspirational example 4.** Presentation of stakeholder organigram. *Note: Source, SUMP Peru, Trujillo.*





### 3 Status Quo Analysis

This chapter presents the status of urban mobility in the city.

This analysis includes the

- Description of the institutional, regulatory and financial framework

Mapping of the different plans existing on the different levels and their scope related to transport development such as urban development plans, public transport plans and other sectorial plans.

- Presentation of the main transport problems, opportunities, strengths and weaknesses based on a sound analysis of data from all transport modes in the following areas:
  - Mobility and transport
  - Accessibility
  - Road safety
  - Urban freight
  - Social aspects of mobility
  - Environment
  - New solutions for mobility and transport

The following subchapters will detail the suggested content for each of the sections.

#### 3.1 Institutional and regulatory framework

This subchapter shows the analyses of current policies, legislation and legal framework of the different levels of the institutional framework. These are the local, national and horizontal planning practices and laws governing the city and impacting the development of a SUMP.

##### a) Institutional and regulatory aspects:

Description of the policy and regulatory framework. This includes at least an inventory of relevant policies, legislation, regulation, rules, schemes, licenses, concessions (including those under preparation), relevant to public transport and road traffic in the area, including national urban mobility; assessment of the roles of public and private entities in the public transport system (institutional arrangements), relations between transport authorities and operators as well as between different levels of government authorities.

##### b) National policies and regulatory framework:

Description of the national laws and policies which need to be taken into consideration for the institutional and regulatory framework to be included in the SUMP. Examples of national policies include National Urban Mobility Policies and Programmes (NUMPs) as well as National Determined Contributions (NDC).

### Local policies and regulatory framework:

Description of other transport related urban policies such as urban development, climate mitigation and air quality. Local legislation may also have an impact on the SUMP.

**Basic element 3.** Presentation of institutional and regulatory aspects. *Note: Source, Lagos (Nigeria) Non-Motorised Transport Policy*

Ministry	Responsibility
State Ministry of Transportation	Develop and propagate transport policies and fund infrastructure improvements towards an integrated multi-modal transport system
State Ministry of Physical Planning & Urban Development	Develop building control rules and planning regulations
State Ministry of Works & Infrastructure	Design, construct, and maintain the state road network
Federal Road Safety Corps (Lagos Sector Command)	Enforce traffic rules, educate street users, and advise relevant state agencies where improvements are required to improve safety
Lagos Metropolitan Area Transport Authority (LAMATA)	Plan, design, construct, maintain, and oversee the public transport system and declared (strategic) road network
Lagos State Physical Planning Permit Authority	Issuance of building construction permits.
Lagos State Building Control Agency	Enforcement of building control regulations.
Lagos State Urban Renewal Agency	Planning and design of urban renewal areas.
Lagos State Traffic Management Authority (LASTMA)	Regulate, control, and manage traffic operations

**Inspirational example 5.** Presentation of the institutional and territorial areas impacted by the strategies. *Note: Source, Plan de Movilidad Urbana Sostenible del Distrito de San Isidro, Lima*



**Inspirational example 6.** Presentation of national/local policies and regulatory framework. *Note:*

Reports/plans	Organisation / sector	Activities / conclusions
Development Plan of Centre Region 2014 - 2020	ADR Centre	It have been considered and detailed the provisions regarding Transport and Communication Infrastructure Development, including the technical urban planning one at the level of Centre Region
SDTR – Territorial Development Strategy for Romania / Polycentric Romania 2035	Ministry for Regional Development and Public Administration	The conclusions and recommendations of the Expertise Report domain 4 Transport have been considered
Development Strategy Brasov County – Horizons 2013 – 2020 – 2030, approved by the County Council Brasov, decision no. 325 from 02.11.2010	City of Brasov / Transport infrastructure (streets, parking, pedestrian areas and bicycles).	Revision of the projects planned for Brasov and for the rest of the country, and the projects identified have been considered in the SUMP
Sustainable Development Strategy for the Metropolitan Zone Brasov (2013)	Metropolitan Agency Brasov 2011	Strategies and key objectives have been considered
PUG – General Urban Plan Brasov – Municipality of Brasov	City of Brasov, June 2011	Specific information at general level and recommended urban transport projects have been considered.
Sustainable Development Strategy of the city of Brasov	City of Brasov	Information on proposed projects has been considered
General Transport Master Plan Romania, 2014 <a href="http://www.ampost.ro/pagini/master-plan-general-de-transport">http://www.ampost.ro/pagini/master-plan-general-de-transport</a>	Ministry of Transport Romania	Information on the base year and forecasting time horizons on socio-economic data, transport needs and traffic flows at the locality level. Information on the national strategy and implementation programme of the national projects has been considered.

Source, SUMP Brasov

**c) Institutional capacities:**

Description of

- capacities in the institutions to be taken into consideration for the SUMP development process, such as existing organisational structures, resource allocation and individual capacities of staff.
- existing capacity development programmes.
- main capacity development needs for the capacity development programme for the SUMP development process.

**3.2 Financial framework**

Description of the financial capability of local authorities as well as transport authorities and operators engaging in sustainable urban mobility activities. Description of national and sub-national funding schemes for urban mobility. Identification of other funding sources. This is a short presentation of the past (approx. past 5 years) and projected/planned (next 2-5 years) management and operating budgets.

**Basic element 4.** Presentation of projects in the past five years (table above) and of the planned projects (table below) (Templates).

**Presentation of projects in the past five years**

Project / Activity	Implementation period	Responsibility	Funding source	Cost
<i>Extension of the bicycle network</i>	<i>2014-2017</i>	<i>City of ...</i>	<i>Municipal budget and national funding</i>	<i>100.000\$</i>
...				

**Presentation of planned projects (2-5 years)**

Project / Activity	Implementation period	Responsibility	Funding source	Cost

### 3.3 Planning framework

Mapping of existing plans related to transport at different levels (national, regional, local, district) and scope (e.g. road, rail, public transport) developed by sectors (e.g. urban development, environment, parking management plans etc.).

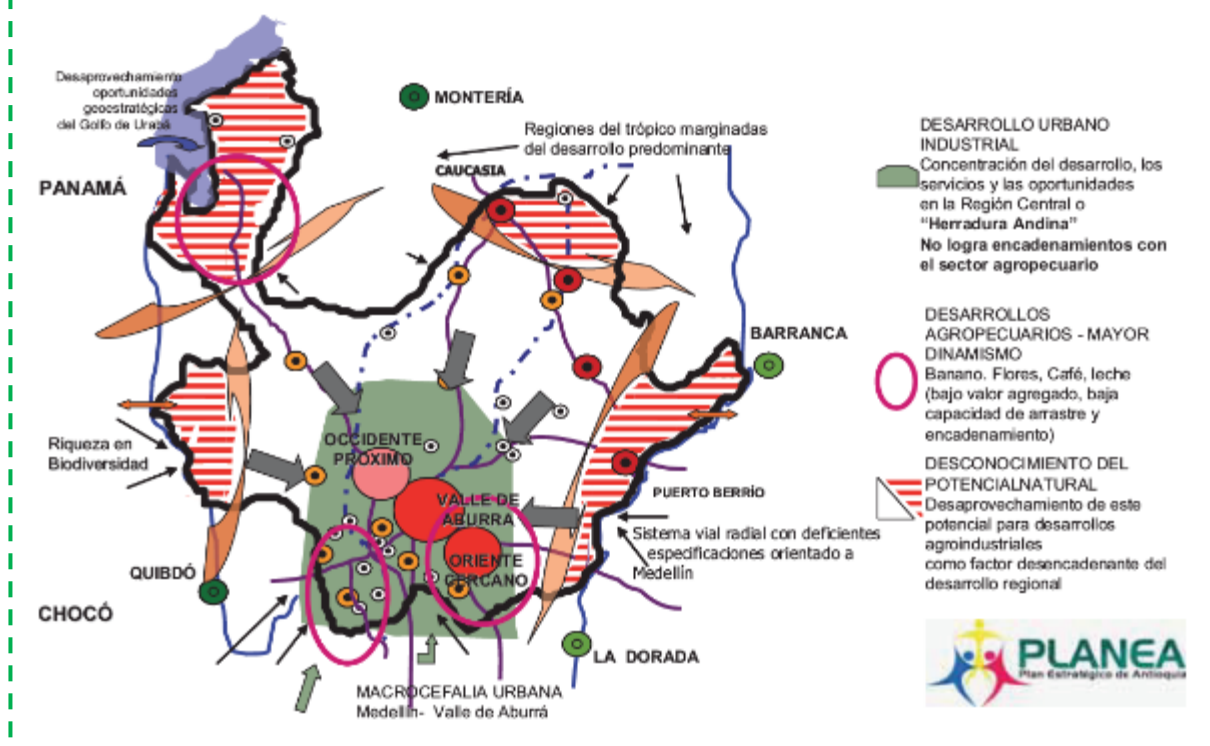
### 3.4 Demographical data and urban development

Presentation of key data on urban development and the population (such as household size, car ownership, type of housing, employment, etc.), jobs, major traffic generators (hospitals, universities, etc.), and projects (equipment, facilities, infrastructure for health, education, etc.).

The data is presented for the reference year and should include a forecast for the identified planning horizons: short-term: 2-3 years, medium-term: 5 years, long-term: 10-15 years.

### Inspirational example 7. Strategic plan of Antioquía, current model of territorial occupancy. Note:

Source, Plan maestro de movilidad para la Región Metropolitana del Valle de Aburrá



### 3.5 Mobility and transport

Description of the local and regional transport network (road, public transport lines, parking facilities, cycling network etc.).

#### Basic element 5. Map of transport infrastructure

If an overall map of transport infrastructure is not available, maps with different transport aspects can be included (e.g. one map for rail, one map for streets etc.)

**Inspirational example 8.** Map of the Rail lines in the Brasgov Metropolitan area. *Note: Source, Sustainable Urban Mobility Plan Brasgov Growth Pole*



### 3.5.1 Transport infrastructure and transport services supply

#### a) Inventory of transport infrastructure and transport services supply:

Description of inventory and analysis of existing infrastructures and level of services (incl. maps and benchmarking with relevant cities), but also a diagnosis of other existing plans and strategies, trends and challenges for the various dimensions of transport supply in the study area, including:

- **Road network:**  
Existing and planned road network in relation with all mobility needs (pedestrians, non-motorised transport, public transport, and other vehicles) with focus on the roads carrying public transport; summary of related plans and projects.
- **Road congestion and traffic management:**  
Level of road congestion at peak periods and appraisal of traffic planning at city level and traffic management at a lower scale.
- **Public transport system:**  
All types of public transport (bus, rail, water, formal/informal transport), including routes extension and localisation, depots, garages, rolling stock quantity and quality) taking into account current plans and projects, volume of public transport supply and duration of travel at peak period.

- **Financial aspects:**  
Fares, subsidies, fuel policy, taxes, other income generated from transport (including land value capture).
- **Parking:**  
Inventory of parking in the city centre and analysis of parking management and pricing schemes.

**b) Indicator on existing sustainable infrastructure:**

This part includes data on the following core sustainable urban mobility infrastructure indicators:

- Existing km of sidewalks
- Existing km of cycle lanes
- Existing km of bus lanes or other mass transit
- Existing number of car parking lots (parcels for individual cars) in the city centre covered by parking management (e.g. parking fees)

**c) Mobility services:**

Inventory and assessment of already established (or in procurement) or new mobility services in the city (e.g. bike or car sharing, ride-hailing, app-based mobility navigation, app-based parking management etc.)

### 3.5.2 Mobility demand and traffic

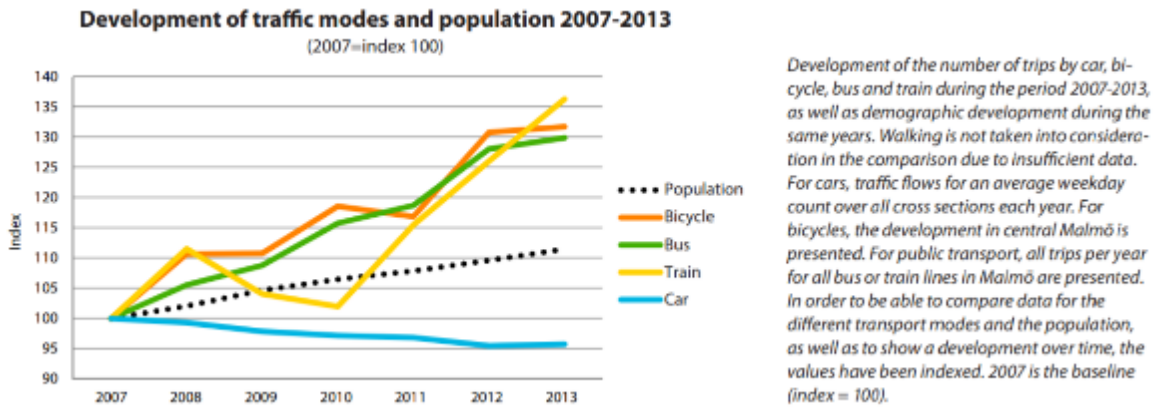
**a) Mobility demand and traffic:**

Review of transport demand per mode on the main corridors and for the main origin-destinations based on all existing data on mobility, including existing traffic volumes per mode, at peak hours and for the full day and per sub areas and for each main axis.

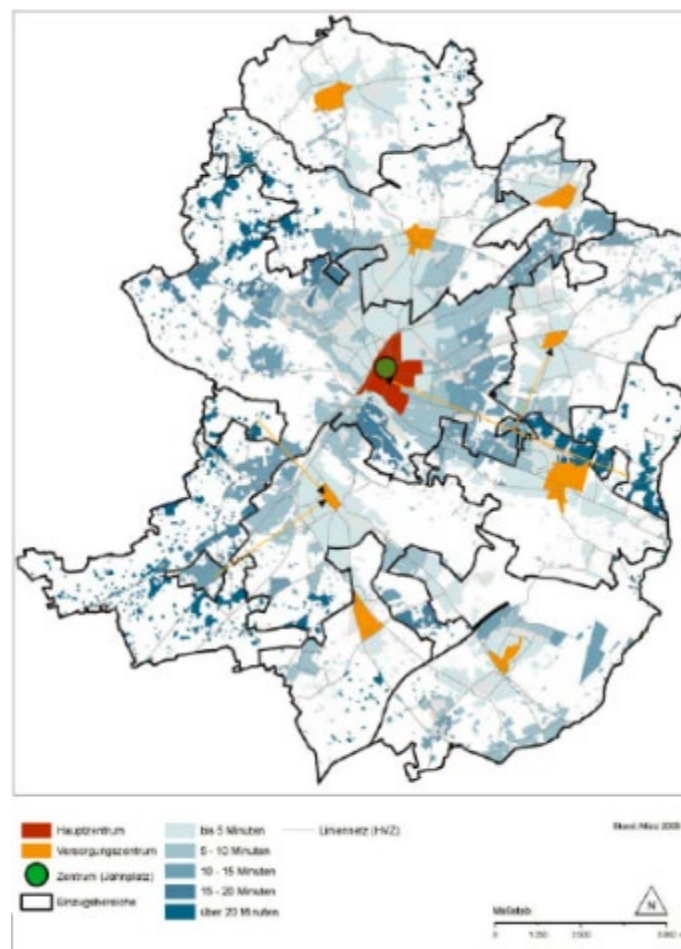
**b) Modal split:**

Presentation of the modal split (in trips and per km) breakdown through a relevant set of transport modes and provision as an indicator of the share of individual motorised modes, public transport and non-motorised modes. The indicator is used to measure aggregated impact monitoring within the MobiliseYourCity Partnership.

**Inspirational example 9.** Example figure comparing population growth and number of trips by car, bicycle, bus and train over time. *Note: Source, SUMP of the City of Malmö, Sweden, 2016*

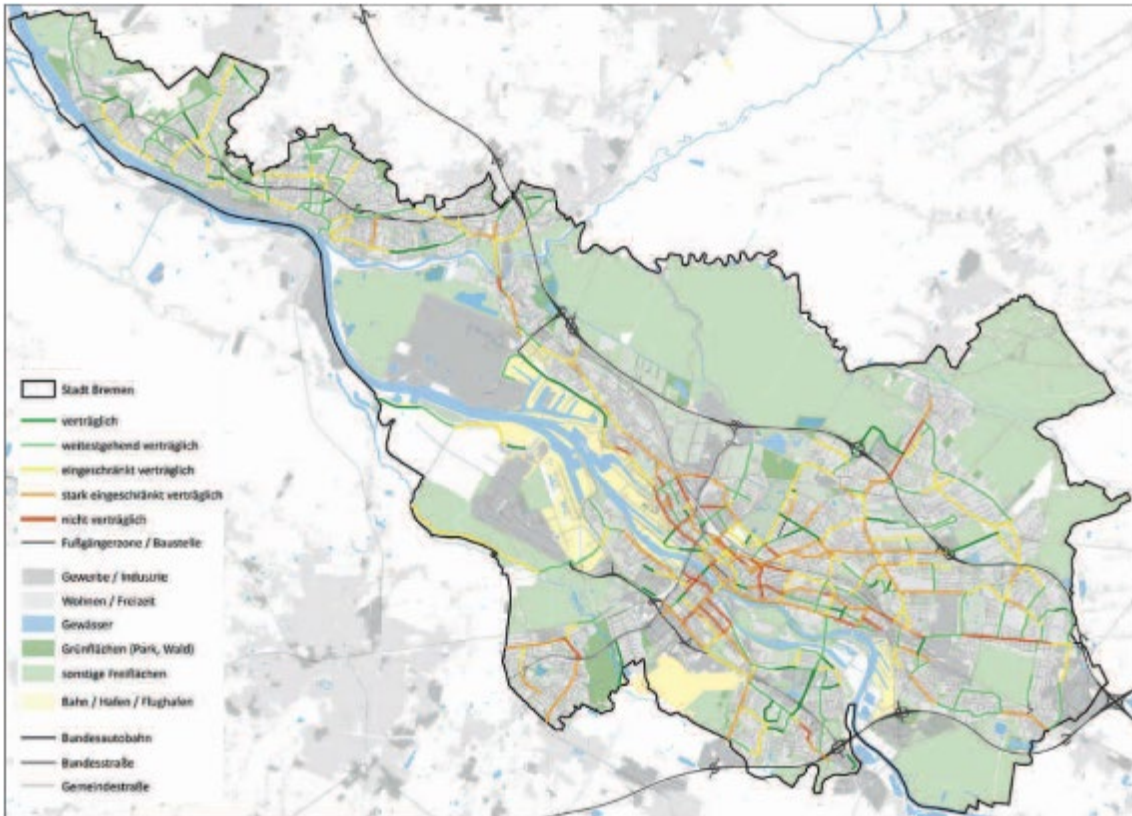


**Inspirational example 10.** Example map of public transport accessibility, travel time to closest (sub-)urban centre. *Note: Source: Mobility strategy of the City of Bielefeld, Germany, 2018*

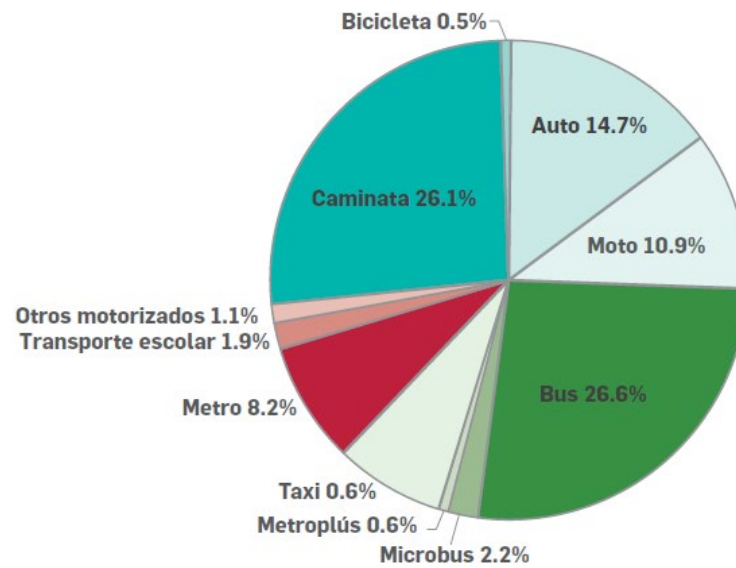




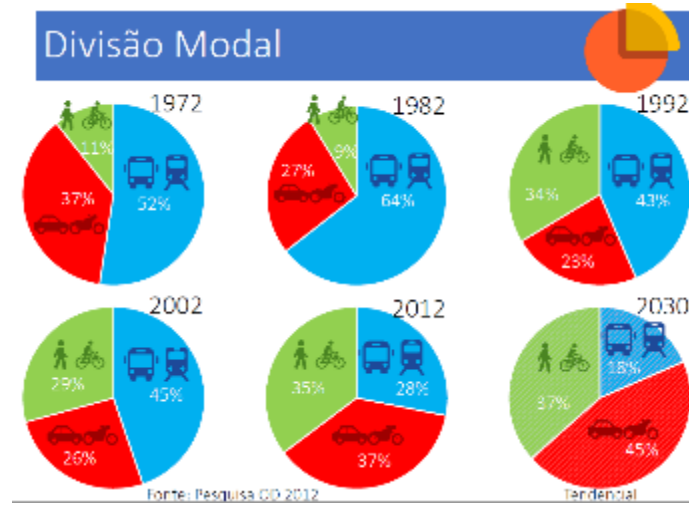
**Inspirational example 11.** Example of map that visualises a liveability analysis of road space in the entire city (Figure source: *SUMP of the City of Bremen, Germany, 2014*)



**Basic element 6.** Presentation of Modal split. Note: Source, *Plan de Movilidad Segura de Medellín 2014-2020*



**Inspirational example 12.** Visualization and comparison of modal split over time or comparison with other cities. *Note: Source, Modal Split Belo Horizonte (Brasilien), Apresentação sobre o histórico do PlanMob BH*



### 3.5.3 Active Mobility

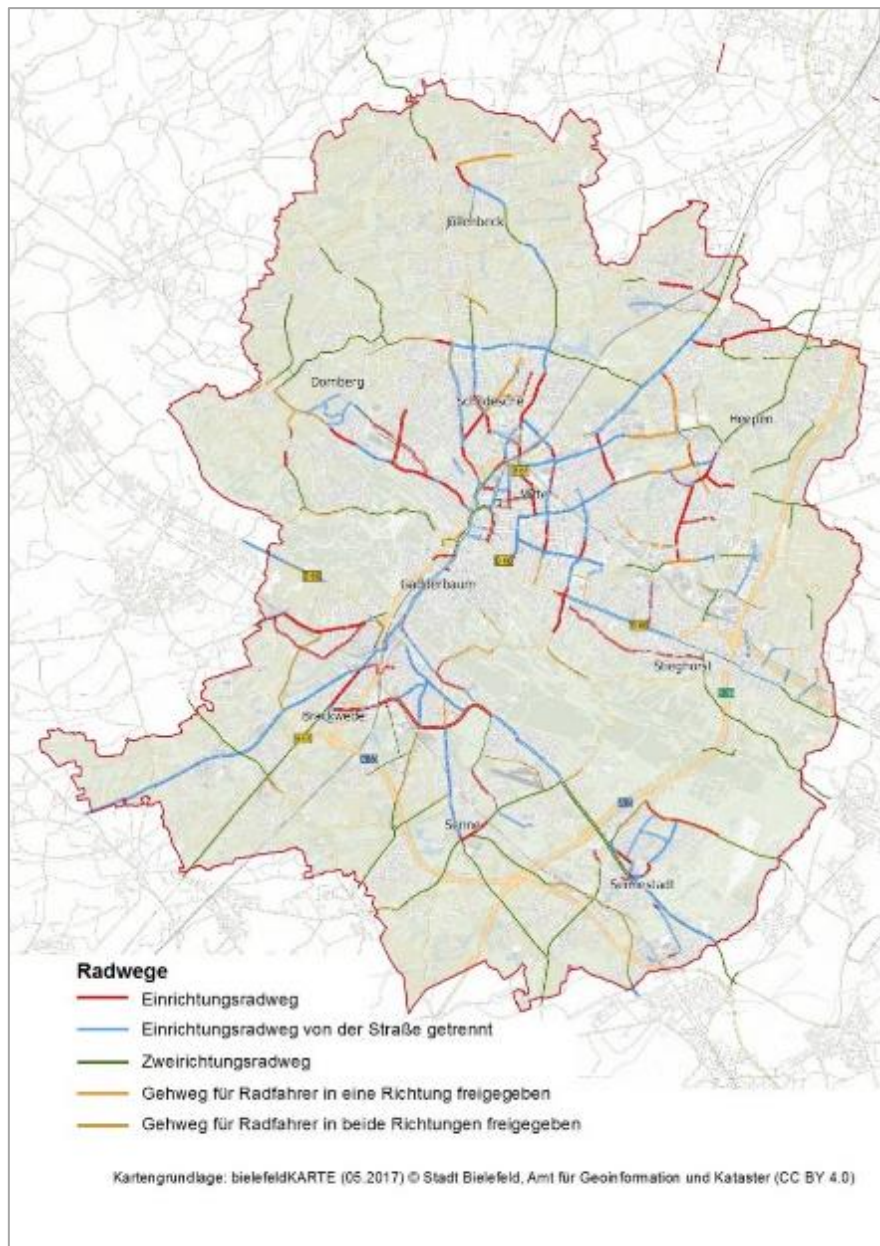
#### Walking and Cycling:

Including an inventory of main routes/passages for pedestrians/NMT (location, quality of infrastructure) in relation with pedestrian/NMT flows

#### Results of walkability study and non-motorised transport surveys:

Including analysis of historic and current use as well as potential/ easiness of walking and cycling

**Inspirational example 13.** Example map of main cycling infrastructure, differentiated by type of cycle lane. *Note: Source, Mobility strategy of the City of Bielefeld, Germany018*



**Inspirational example 14.** Presentation of quantity of pedestrian and cycling infrastructure by different district municipalities. *Note: Source, Plan maestro metropolitano de la bicicleta del Valle de Aburra.*

Municipio	Total Km
Barbosa	8,54
Bello	2,10
Caldas	0,00
Copacabana	0,00
Envigado	0,00
Girardota	11,12
Itagüí	0,17
La Estrella	1,02
Medellín	29,55
Sabaneta	3,22
<b>Total General</b>	<b>55,72</b>

### 3.6 Accessibility

Description of accessibility, which refers to its impact in social and environmental aspects, as well as economic development.

#### **Access to public transport:**

Prevailing access situation of the city's population to public transport.

### 3.7 Road safety

#### **Traffic safety:**

Diagnosis of traffic safety (causes, severity and localisation). This includes at least inventory of black spots, and development of the number of traffic fatalities (road, rail, etc.) over the past 10 years (i.e. as defined by the WHO, a death counts as related to a traffic accident if it occurs within 30 days after the accident) in the urban area per 100.000 inhabitants.

**Inspirational example 15.** Example of visualising a traffic safety analysis with a table (deaths and injuries over time) and a map that marks problem areas in the road network.

*Note: Source: SUMP of the City of Bremen, Germany, 2014)*

Anzahl der Verkehrsunfälle im Straßenverkehr der Stadt Bremen						
	2007	2008	2009	2010	2011	2012
Verkehrsunfälle gesamt	15.321	15.399	15.707	16.085	16.229	16.809
ohne Personenschäden	12.625	9.891	10.074	10.887	10.486	10.896
mit Personenschäden	2.696	2.551	2.583	2.363	2.624	2.688
dabei Verunglückte	3.094	2.957	3.050	2.835	3.119	3.225
Getötete	11	10	11	9	14	15
Schwerverletzte	301	339	326	275	318	351
Leichtverletzte	2.782	2.551	2.713	2.551	2.787	2.859



- BAB
- Bundesstraße
- Landesstraße
- Kreisstraße
- Hauptstraße

- Verkehrsunfälle nach Auswertung der Verkehrsunfallkommission 2012
- gehäuft Unfälle mit Sachschaden
  - gehäuft Unfälle mit Personenschaden

- Verkehrsunfälle nach Auswertung der EUSka Unfallkarte für 2010
- gehäuft Unfälle an Knotenpunkten
  - gehäuft Unfälle auf Straßenzügen bzw. in Bereichen (Infolge hoher Verkehrsstärken)

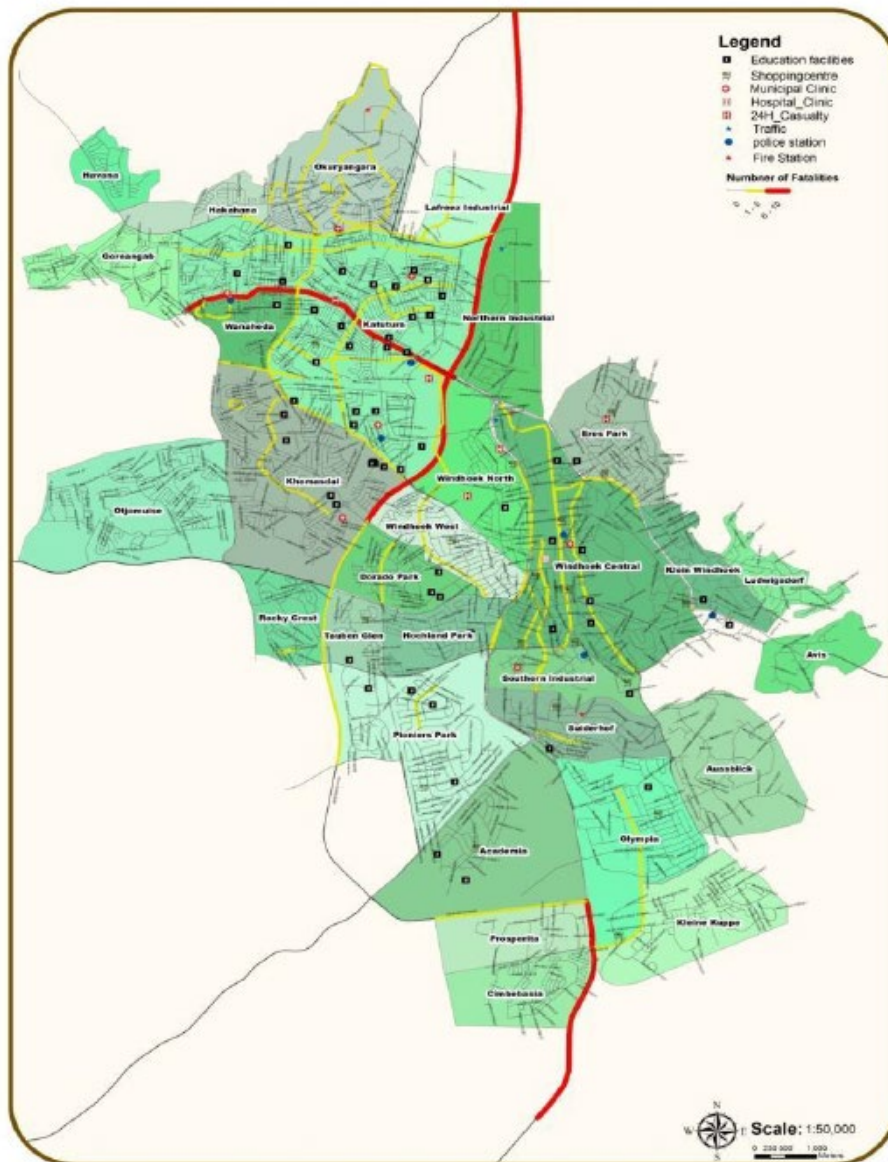
*Bereiche mit Problemen in Bezug auf die Verkehrssicherheit im Hauptstraßennetz der Stadt Bremen für 2010/2012*

**Basic element 7. Spatial analysis of road safety regarding accidents and fatalities**

Detailed analysis on street level only if data is available.

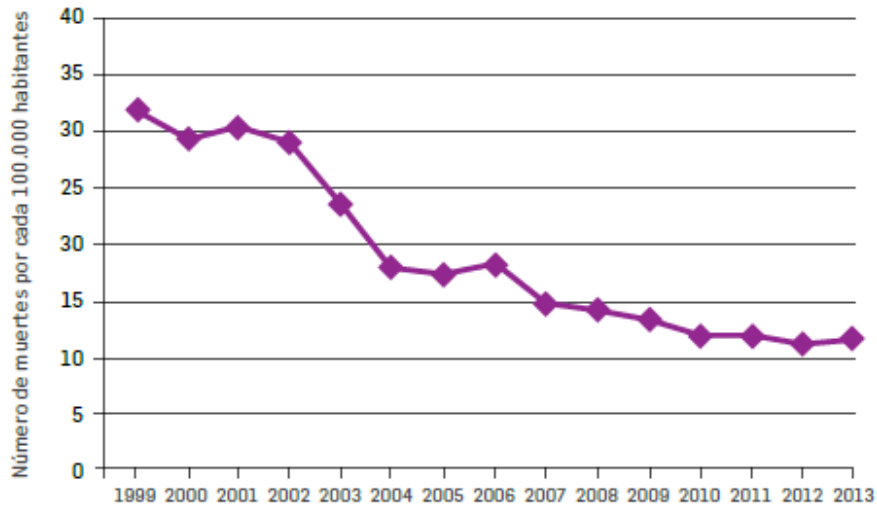
**Inspirational example 16. Accurate analysis and presentation of black spots / fatalities with focus on spatial distribution. Note: Source, Windhoek SUMP.**

**Figure 2-40: Graphical Representation of the Roads with Highest Fatalities from 2007 to 2009**



**Basic element 8. Fatalities over time.** Note: Source, Note: Source, Plan de Movilidad Segura de Medellín 2014-2020

**Gráfica 3.** Tasa de muertes en hechos viales por cada 100.000 habitantes. Medellín 1999-2013

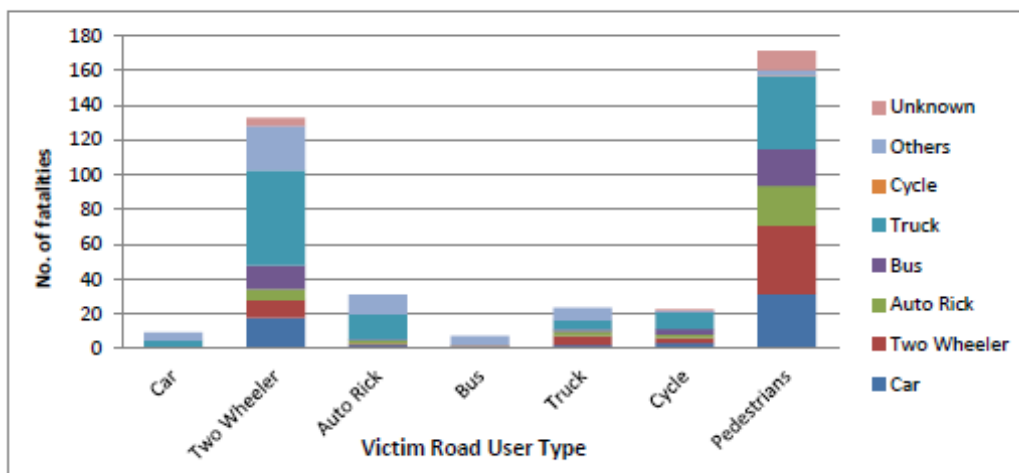


**Basic element 9. Fatalities over time.**

Detailed analysis on street level only if data is available.

**Inspirational example 17. Traffic fatality causes and victim and impacting road users.** Note: Source, Low Carbon Comprehensive Mobility Plan Vishakhapatnam (India).

**Figure 24 Traffic fatality – victim and impacting vehicle types**



### 3.8 Urban freight

This chapter includes an analysis of freight transport supply and demand within the city, and a diagnosis of the main trends, constraints and challenges. It should differentiate analysis by following sub-sections:

- Ports / airports (where applicable)
- Truck regulation & routing
- Delivery patterns (including abusive occupation of urban roads)
- Markets
- Multimodal logistics & distribution centres

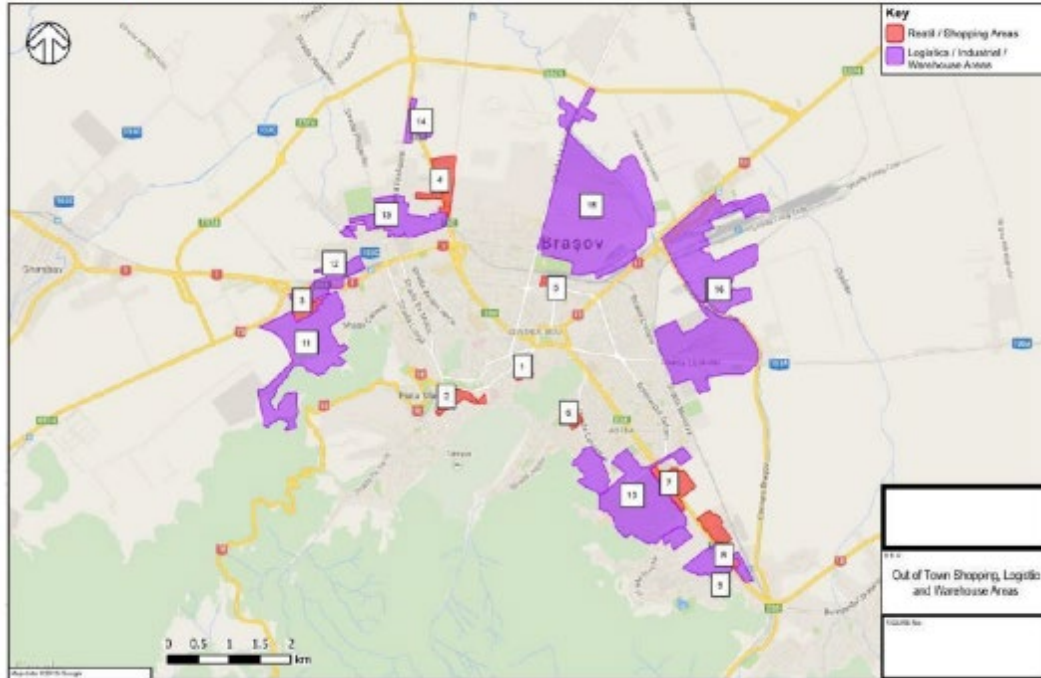
**Inspirational example 18.** Example map of average truck traffic (trucks over 3.5t, t/24h, average on weekdays) *Note: Source: SUMP of the City of Leipzig, Germany, 2015*





**Inspirational example 19.** Presentation of freight supply and demand. *Note: Source, SUMP Brasov*

**Figure 2.28:** Location of warehousing, logistics operations and out of city centre major shopping areas in Braşov



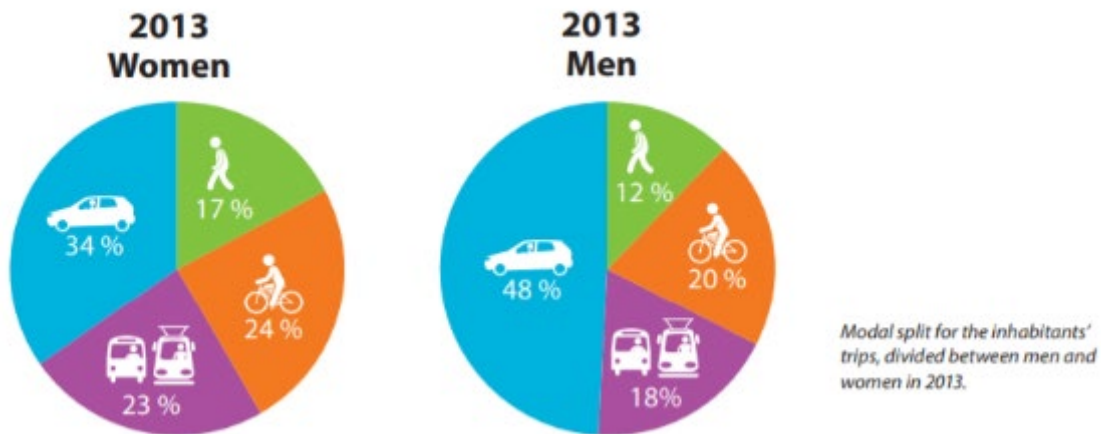
### 3.9 Social aspects of mobility

Description of the mobility situation for different subgroups of the society which are often underrepresented and / or have specific mobility needs and therefore need special attention, such as women, young and elderly people, indigenous or other groups.

#### 3.9.1 Gender and mobility

Status of urban mobility from gender perspectives including travel patterns of women, caregivers, and non-gendered people, and how they differ from the travel needs of men; gender-related inequalities in terms of access to public transport, services, opportunities offered in the urban area (health care, education, jobs, etc.), current gender-related harassment faced by women while travelling in the urban area as well as jobs opportunities for women in the urban mobility sector.

**Inspirational example 20.** Mobility patterns of differing genders.



Example of a modal split differentiated between two genders (Figure source: SUMP of the City of Malmö, Sweden, 2016)

**Use of public transportation by gender**

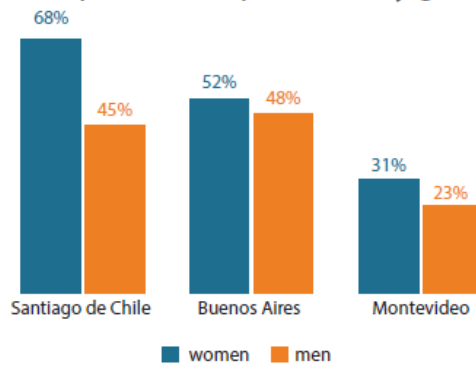


Figure 8: The use of public transport by gender in Latin America. Source: Own figure, data by InterAmerican Development Bank 2016.

Approaches for Gender Responsive Urban Mobility, Sustainable Urban Transport: A Sourcebook for Policy-makers in developing countries, 13

**3.9.2 Other groups with specific mobility needs**

Add description for those groups identified before

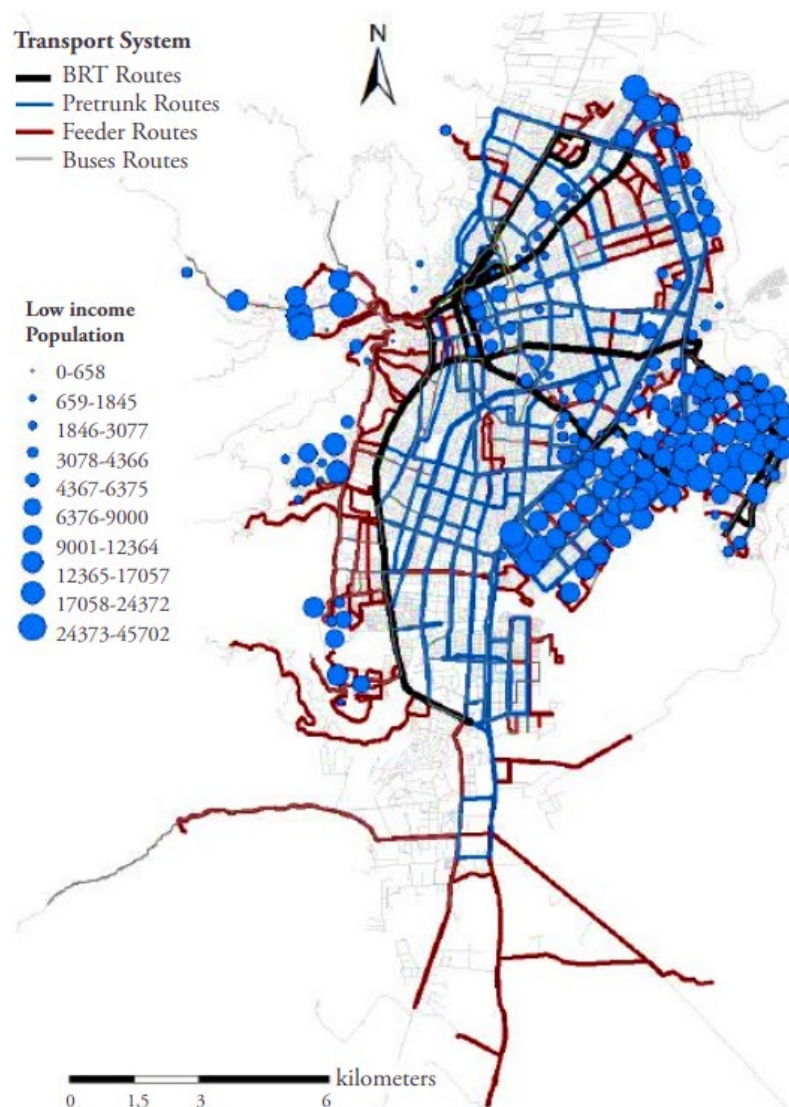
**3.9.3 Transport poverty**

Add description on mobility poverty, transport affordability, accessibility poverty and exposure to transport externalities and / or other aspects e.g. on well-being, housing and social exclusion.

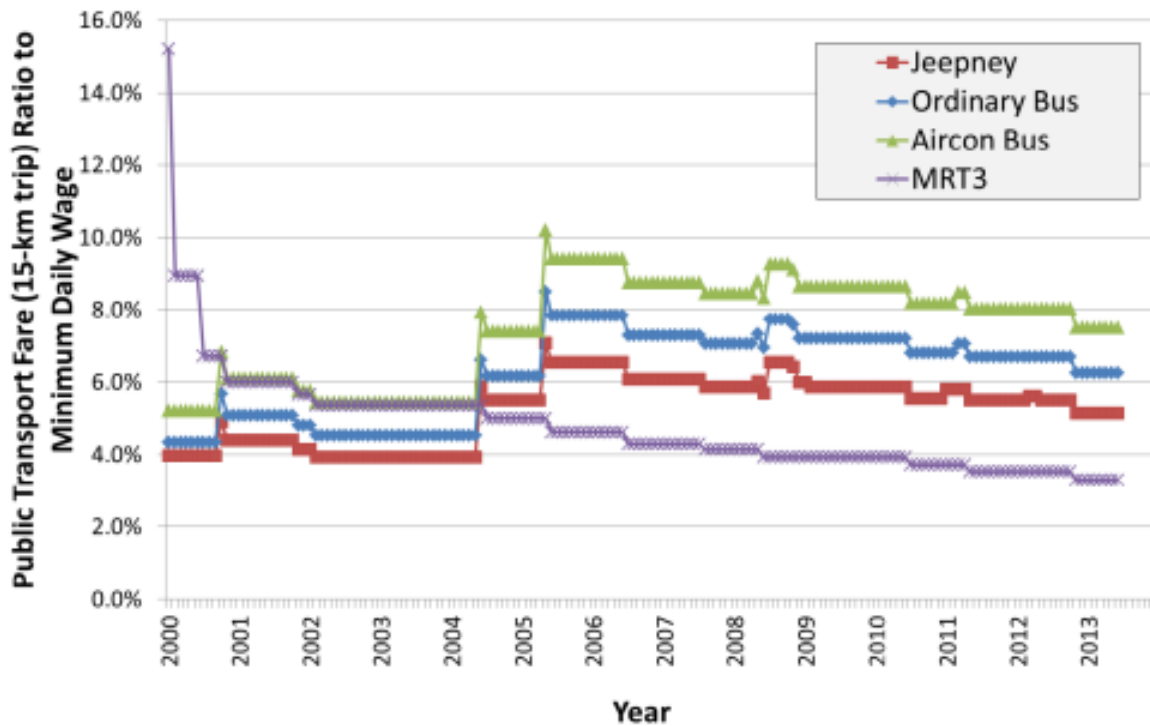
Describe if specific groups are especially exposed to transport poverty: 1) low-income households, 2) households without a motorised vehicle, 3) persons too young or old to drive a car, 4) persons with physical or cognitive limitations, 5) minority households, 6) immigrants, 7) LGBTQ+ etc.

Transport poverty could be generated by two mechanisms: 1) personal features such as needs, resources, attitudes, well-being and physical or mental capabilities, and 2) housing location and choices that are linked with e.g. housing costs, transport costs and distance to workplace and services. Transport poverty has a strong linkage with transport services and services near the homes. In larger cities, transport poverty is linked to the availability and service level of public transport whereas in rural areas car dependency is the major concern.

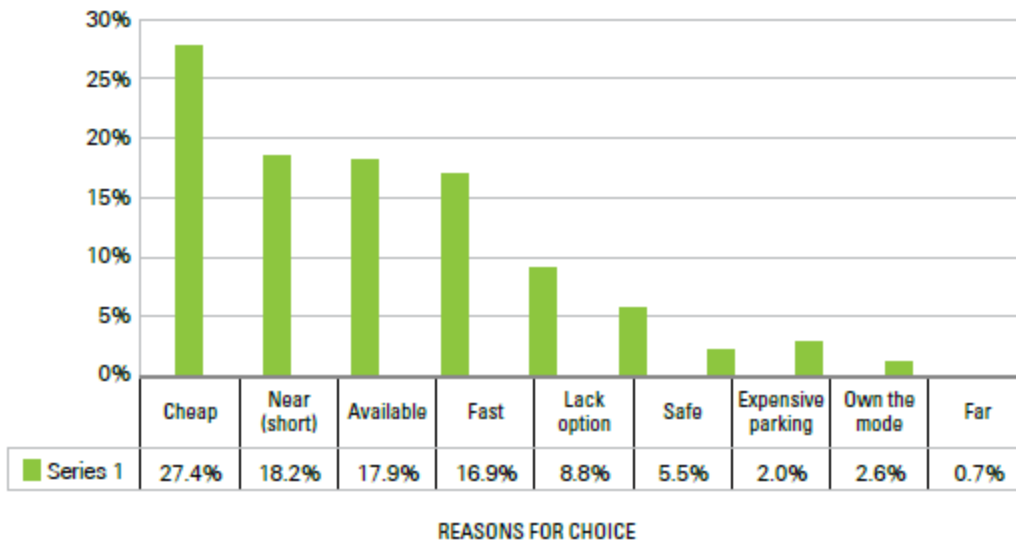
**Inspirational example 21.** Links of poverty and mobility. Coverage of the public transport and BRT system in comparison to low-income population. *Note: Source, OVE, using data from Metrocali (2015, 2016)*



**Inspirational example 22.** An example of how public transport fares can be presented as a percentage of minimum daily wage. *Note: Source, Enhancing the sustainability and inclusiveness of the Metro Manila's urban transportation systems: Proposed fare and policy, reforms Mijares et al. (2014)*



**Inspirational example 23.** Presentation of the determinants of Mode of Transport Choice. *Note: Source, SUMP Ruiru*



### 3.9.4 City Liveability

Analysis of the transport- and urban mobility-related liveability criteria for the city, such as safety and security, frequency and affordability of public transport, quality and fair distribution of public space.

### 3.10 Environment

#### 3.10.1 Air pollution and GHG emissions data and analysis

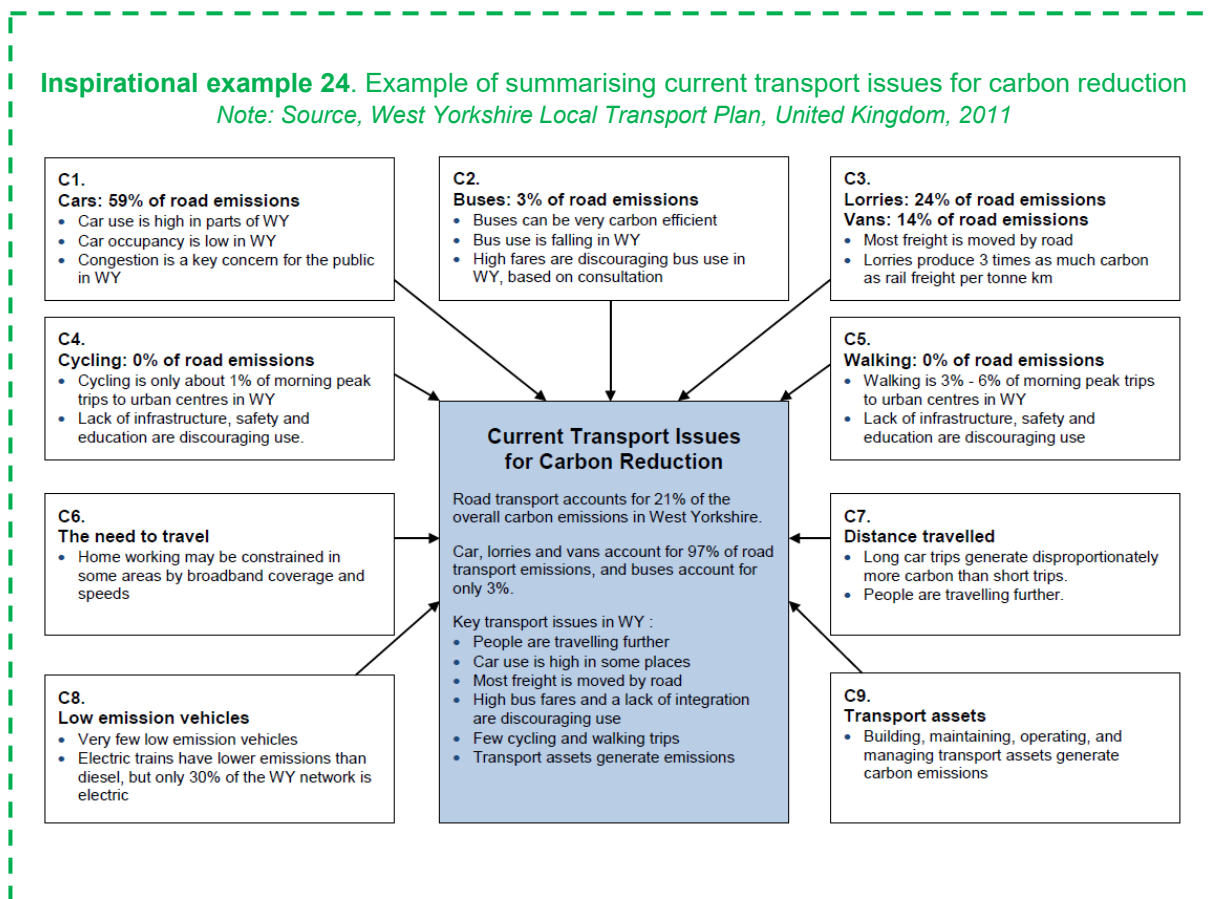
##### Local air pollution:

Data should include the mean urban air pollution of particulate matter (in mg PM2.5 and optionally PM 10, data collection over a time period of minimum 3 months) and other harmful emissions at road-based monitoring stations, including inventory of existing road-based monitoring stations, if any.

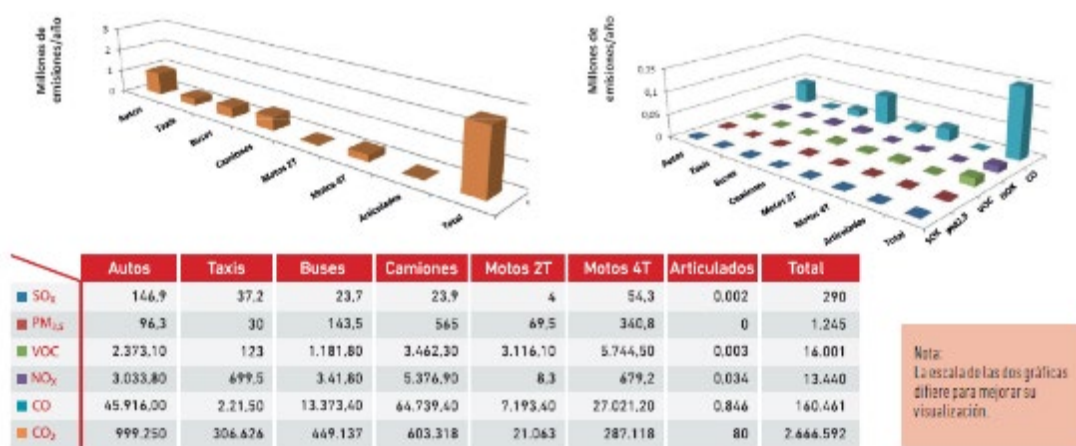
Emissions of PM 2.5 (and optionally PM 10) due to land transport in the city (incl. passenger and freight transport)

##### GHG emissions:

Analysis of GHG emissions by urban transport sources. Also expected impact of current systems and on-going city projects on traffic and GHG emissions

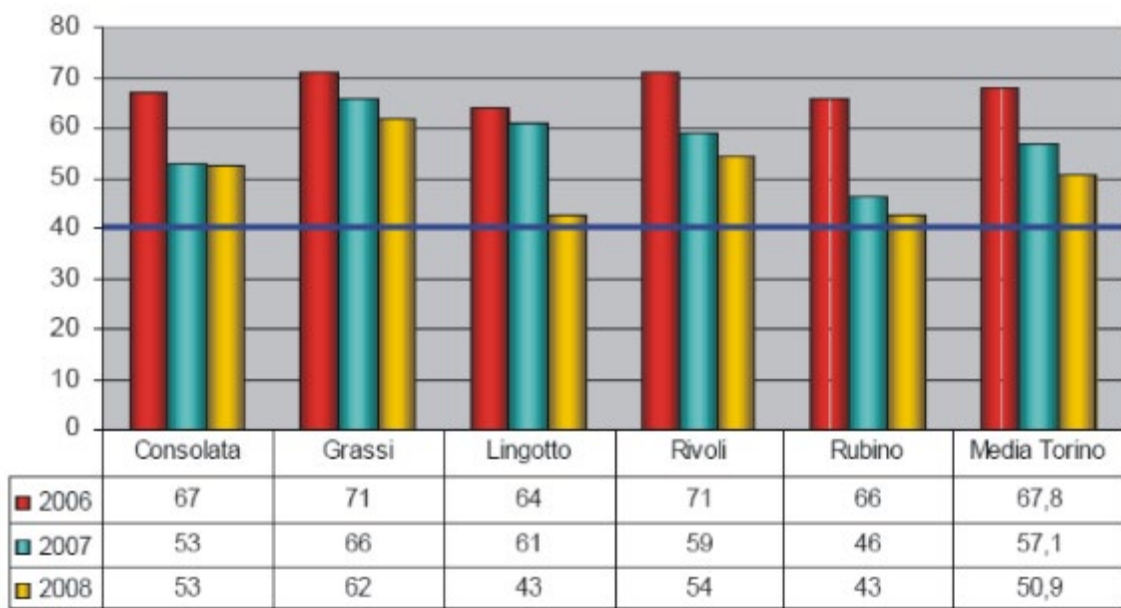


**Inspirational example 25.** Presentation of transport emission data. *Note: Source, Plan maestro metropolitano de la bicicleta del Valle de Aburra*



**GRÁFICA 1.1.** EMISIONES DE CONTAMINANTES CRITERIO Y CO, AÑO 2013 EN EL VALLE DE ABURRÁ.  
Fuente: Inventario de emisiones atmosféricas del Valle de Aburrá, año base 2013. Informe de avance. Convenio de asociación 315 de 2014.

**Inspirational example 26.** Example of air pollution diagrams by monitoring station (PM10, ug/m3) *Note: Source, SUMP of the City of Turin, Italy, 2010*



3.10.2 Noise

Add description

3.11 New solutions for mobility and transport

Assessment of usage and underpinning policies and regulations of major digital-based transport technologies, such as:

- Planning and data management (app-based mass data capture, effective data management systems, transport modelling & forecasting etc.); big data management

- Capacity to collect, process, analyse and update data on the urban geography / context and the mobility within the city, whether by the Public Transport Authorities or by other stakeholders.
- Mobility management (e.g. app-based parking management, traffic control, app-based mobility navigation services, PT information systems, Mobility as a Service schemes based on digital solutions, etc.).

### 3.12 Baseline

Provide a summary of all the themes analysed including, urban structure and development, mobility and transport, road safety, urban freight, social aspects of mobility, environment, new solutions for mobility and transport; as well as an analysis of the institutional capacities, regulatory framework, investments priorities, planned projects and planning procedures.

Present:

- Key data for selected strategic indicators (see following chapters)
- Key reference documents (policy and legal framework)
- Ongoing and planned projects (urban development and transport projects)

Provide a summary of the most important challenges and opportunities. It can be described in the structure of a SWOT analysis (strengths, weaknesses, opportunities, threats) or in a more descriptive way.

**Basic element 10. Analysis of the status (baseline analysis) of the transport system (Template)**

Functions/ Transport mode	Modal share	Quality of infra- structur e	Safety and liveability	Environmen t and health	Equitable accessibility	Status of measure implementation	Main recommen dations
<b>Walking</b>	12%	<i>Poor</i>	<i>Many accidents on road crossings near schools</i>	<i>Less and less pupils walking to school</i>	<i>Some areas lack walkable access to parks and sports facilities</i>	<i>Low activity. New "walk to school" campaign</i>	<i>Traffic safety measures are needed</i>
<b>Cycling</b>	7%						
<b>Public transport (bus, tram, metro, train etc.)</b>	....	<i>Good</i>	<i>Some bus stops need repair</i>	<i>New bus fleet has been installed, decreased impact on air quality</i>	<i>Reduced fare for unemployed, but infrequent buses to poor outskirts</i>	<i>High activity, public transport strategy planned</i>	
<b>Vehicle sharing (car, bicycle, e-scooter etc.)</b>	....						
<b>Private motorised transport (car, motorcycle etc.)</b>							
<b>Multimodality (train station, interchanges)</b>	n/a						
<b>Freight</b>	n/a						
<b>ANALYSIS</b>			<i>Traffic safety needs to be prioritised</i>				



**Basic element 11. MYC SUMP Core Indicators**  
Please provide the current baseline for each indicator.

MYC SUMP Core Indicators	Baseline
<b>Access to public transport (in %)</b> Proportion of the population living within 500 meters or less of a public transport stop with a minimum 20 minutes service at peak hour, or have access to a shared mobility system with comparable service for money	%
<b>Air pollution</b> Mean urban air pollution of particulate matter (in mg PM2.5) at road-based monitoring stations	mg PM2.5
<b>Road safety</b> Fatalities by all transport accidents in the urban area on a yearly basis. As defined by the WHO, a death counts as related to a traffic accident if it occurs within 30 days after the accident)	Pers. (in thousands)
<b>Modal split</b> Share of public and non-motorised transport of total urban transport (in pkm -not trip)	%
<b>GHG emissions from transport [tonnes CO2 (eq.)/cap. per year]</b> Well-to-wheel GHG emissions by all urban area passenger and freight transport modes	MtCO <sub>2</sub> e per year

Additional Indicators	Base line
<b>Commercial speed</b> Average speed of a mode of transport between the two terminals, including all operational stops	km/h
Mobilised public and private funding	
Others ( <b>city specific</b> )	

**Inspirational example 27.** Summary of the most important challenges and opportunities.

*Note: Source, SUMP Pristina*

**Figure 3: Summary of Feedback on Transport Problems & Issues in Pristina**

## What does not work well in Pristina?

Public Transport	Car Transport and Parking
<ul style="list-style-type: none"> <li>Illegal taxi</li> <li>Missing information and information system</li> <li>Poor access for disabled persons</li> <li>No ticket integration</li> <li>Unreliability</li> <li>Missing public transport preferences</li> </ul>	<ul style="list-style-type: none"> <li>Congestion</li> <li>Problems with parking including disabled person's vehicles parking</li> <li>No regulation for heavy vehicles to enter city centre</li> <li>Low activity of police</li> </ul>
Active Modes and Public Spaces	Quality of Life
<ul style="list-style-type: none"> <li>Vehicles parked on pavements and places for pedestrians</li> <li>Lack of cycling infrastructure</li> <li>Almost no components for disabled persons in the public space</li> <li>Unsuitable usage of public space of streets</li> <li>Unsatisfactory level of safety of pedestrians and cyclists</li> <li>Poor number of parks and green areas, relaxing areas</li> </ul>	<ul style="list-style-type: none"> <li>Air and noise pollution</li> <li>Safety</li> <li>Cultural life and sport</li> </ul>

Source: Mott MacDonald

Whilst a number of key urban mobility issues and challenges were identified, information on the current positive aspects of travel and transport were also obtained, as summarised below.

**Figure 4: Summary of Key Feedback on What Works Well in Pristina**

## What works well in Pristina?

Public Transport	Car Transport and Parking
<ul style="list-style-type: none"> <li>Introduction of new modern vehicles/fleet</li> <li>People are starting to use new vehicles more</li> <li>Low ticket prices/fares</li> <li>Good coverage of taxi services across the city</li> <li>Some bus routes are now observed to be improving</li> </ul>	<ul style="list-style-type: none"> <li>Introduction of traffic calming and bollards to manage traffic &amp; parking</li> <li>Traffic Monitoring Centre</li> </ul>
Active Modes and Public Spaces	Quality of Life
<ul style="list-style-type: none"> <li>Good use of natural assets (Gëmia Park)</li> <li>Green spaces exist across the city (and are expanding)</li> <li>Provision of lighting across crosswalks</li> <li>Level of street signing is considered quite good</li> <li>Good conditions for pedestrians in the city centre</li> </ul>	<ul style="list-style-type: none"> <li>Improved public street lighting in some neighbourhoods</li> <li>Air quality monitoring takes place</li> <li>Good cultural facilities exist within the city</li> </ul>

Source: Mott MacDonald

## 4 Vision and objectives

This chapter entails:

- A vision for urban mobility and a strategic framework for the direction of the SUMP;
- Formalised objectives of the SUMP;
- Measurable targets and indicators;
- Short- and long-term scenarios, including the selected scenario;
- List(s) of measures and/or measure packages

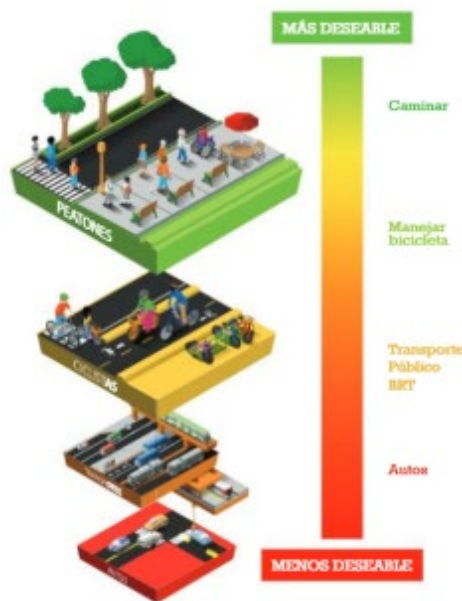
### 4.1 Vision

Explain the general vision of urban mobility in the city. The vision often includes reduced levels of automobility, improvement of the modal split of sustainable modes and vehicles, increased accessibility and quality of life (with eventually geographic rebalance in favour of lagging / poorly served areas), increased road safety and reduction of emission (local pollutants and GHG), integrated urban land use and mobility planning.

The vision might also include institutional and organisational rearrangements, in particular improved regulation of public transport operators / paratransit operators, enhanced capacity of the public transport authority, institutional development, capacity development, etc.

At the same time, the vision should be city-specific and fully depend of the context and the aims as expressed by the political / elected authorities of the SUMP areas and the stakeholders involved in the participatory process of the SUMP

**Inspirational example 28.** Representation and Vision of preferable transportation modes. Note: Source, Plan de Movilidad Urbana Sostenible del Distrito



## 4.2 Objectives, targets and indicators

The formalised and prioritized urban mobility goals should be described here. These objectives need to be aligned with the vision for urban mobility on local and national level.

Specify what the SUMP should achieve, taking into account all aspects of the common vision.

Formulate clear objectives and strategic priorities that specify the directions for improvement.

Specify your objectives and identify which main aspects need to be monitored.

**Inspirational example 29.** Presentation of SUMP goals and objectives. *Note: Source, Capital Surface Urban Transport Master Plan Abu Dhabi*

Transport that enhances quality of life and integrates land use	Transport that harnesses technology	Transport that supports economic success	Transport that benefits the environment	Successful delivery of transport through stakeholder engagement
<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Accommodate projected population growth in a sustainable and measured manner, reflected by a robust implementation program.</li> <li>- Enable equitable transport to foster safe, cohesive and thriving communities.</li> </ul> <p><b>Goal Statement:</b> Abu Dhabi attracts global talent as a result of its strong identity. Life in the city is safe, inclusive, family oriented, multi cultural, conservative, convenient, affluent and affordable. The multi-modal transport network enhances and accommodates the regions growth in a way that creates identifiable communities and places.</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Future proof for new technology and intelligent systems.</li> <li>- Intra and inter-regional, inter-urban and international resilience and connectivity.</li> </ul> <p><b>Goal Statement:</b> Abu Dhabi integrates appropriate new transport solutions into the transport system. We harness technology to prioritise the user and provide an exceptional journey experience. Technology is a key enabler for optimizing the connectivity of people, goods and services in the city.</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Be an efficient, effective and economically sustainable plan which has socio-economic benefits.</li> <li>- Facilitate economic growth through greater efficiency, transport system enhancement and integration.</li> <li>- Enhance Abu Dhabi's role and stature as the capital city, increase the attractiveness of the city for business, investment and employment.</li> </ul> <p><b>Goal Statement:</b> Transport is the backbone of the city, strengthening the historical city role - to bring people, businesses and goods together to interact efficiently. Our transport system supports a diverse economy that helps to attract global talent to enable business growth and investment.</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Protect, maintain and enhance the local environment.</li> <li>- Protect, maintain and enhance the global environment.</li> <li>- Promote environmentally sustainable transport, efficient use of land and existing infrastructure.</li> </ul> <p><b>Goal Statement:</b> Our city embraces active travel, public transport and shared transport modes to minimise private single occupant vehicle use. The majority of the vehicles that do exist in the city use sustainable fuels or are electric vehicles; and our transport infrastructure could not only operate on low energy but generate energy to power other city systems.</p>	<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>- Achieve consensus across government bodies for coordinated solutions.</li> <li>- Include integrated policies and enhance urban governance.</li> </ul> <p><b>Goal Statement:</b> A strong co-ordinated transport sector leadership will contribute to the success of Abu Dhabi. We work collaboratively with stakeholders, the private sector, industry and the community to deliver transport initiatives and realise city-wide objectives.</p>

### Indicators and targets:

Present a set of strategic indicators that allow for the monitoring of progress made towards the achievement of each of the objectives defined, that are easily measurable and understandable by taking into account existing data sources and standard indicators.

The SUMP should consider at least the 5 MYC core indicators (see graph below).

Present a set of measurable targets for each of the agreed-upon strategic indicators covering all your objectives.

### Basic element 12. SUMP strategic indicators and targets (Template)

Indicators	Baseline	Business as Usual 2030 (2040/2050)	Target 2030 (2040/2050)
<b>Access to public transport</b> Proportion of the population living within 500 meters or less of a public transport stop with a minimum 20 minutes service at peak hour, or have access to a shared mobility system with comparable service for money	%	%	%
<b>Air pollution</b> Mean urban air pollution of particulate matter (in mg PM2.5) at road-based monitoring stations	mg PM2.5	mg PM2.5	mg PM2.5
<b>Road safety</b> Fatalities by all transport accidents in the urban area on a yearly basis. As defined by the WHO, a death counts as related to a traffic accident if it occurs within 30 days after the accident)	Pers. (in thousands)	Pers. (in thousands)	Pers. (in thousands)
<b>Modal split</b> Share of public and non-motorised transport of total urban transport (in pkm -not trip)	%	%	%
<b>GHG emissions from transport [tonnes CO2 (eq.)/cap. per year]</b> Well-to-wheel GHG emissions by all urban area passenger and freight transport modes	MtCO <sub>2e</sub> per year	MtCO <sub>2e</sub> per year	MtCO <sub>2e</sub> per year

### Inspirational example 30. Presentation of main SUMP indicators and targets.

*Note: Source, Nagpur Comprehensive Mobility Plan*

Index	Description	Formulation	Existing	Target
Average speed of network	Average running speed (km/h)	Average running speed for all vehicles	27	35
Modal share of public transport	Modal share	Public transport trips/total study area trips	10%	30%
Modal share of non-motorised transport	Modal share	NMT trips/total trips	25%	60%
Accessibility	Percentage of work trips with travel time <15min	Work trips with travel time less than 15 min/total trips	8%	40%
Bus supply (Nagpur City)	Bus fleet	No. of buses/100 000 population	8	50
Walkability	Availability & usability of foot paths	Footpath length in km/total road length in km x 100	70%	100%
Bikability	Availability & usability of cycle paths	Cycle path length in km/total road length in km x 100	0%	100%
Fatality rate	Fatal traffic accidents	No of fatalities/100 000 population	9.59 (2012)	0

## 4.3 Planned and proposed measures

Provide a systematic overview of measures, based on sectoral mobility plans (e.g. on walking, cycling, public transport, road transport, parking, freight) as well as plans from other relevant policy areas (e.g. land use, energy, environment, economic development, social inclusion, health and safety). This list might be structured with regards to:

- A descriptive title of the measure
- A thematic categorization of the measures
- An indicator of the effectiveness of the measure
- The time-plan and prioritization for the measures
- The scope and geographic areas of the measure

#### 4.4 Identification of integrated packages of measures

Present packaging of measures to help overcome barriers to implementing specific measures and to benefit from synergies and increase their effectiveness. The key to decide which measures come together in a package is to identify which ones will work well together or may be needed to make other measures viable. These measure packages are the basis for the definitions and presentation of the short- and long-term scenarios.

There are different methods to group short- and long-term measures, for example by type of measure, by acceptability, by objective or challenge, by geography, by costs, and/or by bundling for external financing (support one clearly defined objective; are implemented in the same impact area; share the same project owner; have similar implementation periods), or around bigger projects (such as a new bike network, seeking measures which complement and reinforce that project).

#### 4.5 Short- and long-term scenarios

Scenarios should help to understand the risks and opportunities related to current trends and possible changes of circumstances. Alternative scenarios inform about the likely impacts of different strategic policy directions and help to identify short-term and long-term prioritized measures.

##### 4.5.1 Business-as-usual-scenario (BAU)

Present the business-as-usual scenario that describes the development forecasted if the current policy direction is continued and only measures that have already been planned are implemented.

##### 4.5.2 Alternative sustainability scenarios

Alternative scenarios describe forecasted developments resulting from different strategic policy priorities (e.g. public transport focus vs. active mobility focus vs. electromobility focus). Such scenarios show the contributions of different policy directions, helping to define what to put most emphasis on.

Present at least one (but preferentially several) alternative low carbon scenario with their defined measures and measure packages for (short-term 2-3 years and the long-term 10-15 year). For harmonized reporting, a very long-term target should be set as year 2050.

Present your building techniques such as modelling, purely qualitative analysis (based on expert judgement or on past results of policy strategies in your city or in similar urban contexts), or a combination of both.

Present only main results here and provide detailed information in the annex.

**Inspirational example 31.** Example of presenting SUMP short-term measure.

*Note: Source, Municipality of Örebro, 2013*



Junction before being rebuilt



Junction with continuous cycle lane

**a) Scenarios description:**

In the main report, the description of each scenario should take form of an illustrated executive summary (2 pages of text maximum + illustrations) describing the general rationale of the scenario, its particularities, the main related assumptions, the related public policies / measures, the demand and mobility forecasts (modal split, etc;), the main impacts on the surrounding environment

In appendix, the presentation of each scenario should show:

- General assumptions: GDP growth, socio-demographic data, institutional, regulatory and organisational framework, financial framework, projection of the urban structure and development, framework for digital mobility;
- Assessment of cost and available funds;
- Assessment of the GHG emissions.

Further components are:

- Projection of the urban structure and development (long-term and very-long-term) (might be common to various scenarios)
- Assumptions and recommendations on the institutional, regulatory and organisational framework for urban mobility needed to cope with the scenario rationale, eventually in link with those for urban development (might be common to various scenarios)
- A description of transport infrastructure and transport services supply, including:
  - public transport,
  - paratransit / intermediate public transport,
  - Urban road network...
  - New mobility services
- A description of the infrastructure, services and facilities for Non-Motorized Transit (might be common to various scenarios)
- A description of urban mobility policies (transport demand management, transit-oriented development);

- Projection of the modal split (in number of trips, passenger.km and veh.km);
- Analysis of the mobility patterns and an analysis of the mobility demand structure in the scenarios (origin-destination, trip length, trip purposes, etc.);
- Ridership forecast on the public transport main corridors / the whole public transport network, and traffic on the urban road network;
- Analysis of the efficiency of the road / PT networks (passenger/km; veh/km; commercial speeds, etc.);
- A description of the urban freight system;
- A description of the policy and framework for digital mobility (might be common to various scenarios)
- An estimation of the CAPEX (capital expenditure) and OPEX (operational expenditure);
- A description of the main impacts on the surrounding environment: impact on land-use and urban development, environmental and social impact, induced economic development.

Some specific dimensions of the scenarios (for instance, but not necessarily: NMT, gender, new mobility services, urban freight, institutional and financial arrangements...) might be common to various or all scenarios and described separately, in a **note presenting policy, institutional, regulations measures, and financial recommendations**. In this case, the scenario will vary mainly on the transport supply and services, transport demand and physical investment.

#### **b) Traffic forecast modelling results:**

If a transport model has been applied, present the model used for the projection of traffic flows and transport demand.

Describe the main assumptions and results as well as limitations.

In the annex following information should be added:

- Description and characteristics the traffic model itself (model structure, model inputs and outputs, calibration process and results, used software, algorithm / formulas utilized for calculation),
- Main assumptions
- The results of the traffic model for the various scenarios, in compliance with the Terms of Reference.

#### **c) Multi-criteria comparison of scenarios:**

In both the short and long term, the various scenarios are compared to the BAU scenario, in terms of traffic volume, modal split, GHG emissions, trip time, infrastructure costs, etc. The comparative analysis of the measures proposed under various scenarios should allow choosing the most effective and, on this basis, formulating an optimal scenario for meeting the SUMP objectives and the vision desired for the future mobility in the city.

A detailed impact appraisal of the main measures and measure packages is needed at this stage to avoid unrealistic projects. Confirm innovative ideas and ensure cost-effectiveness, often using standardised methods such as multi-criteria analysis (MCA) or cost-benefit-analysis (CBA).



Present results of the comparative analysis of the measures proposed under various scenarios.

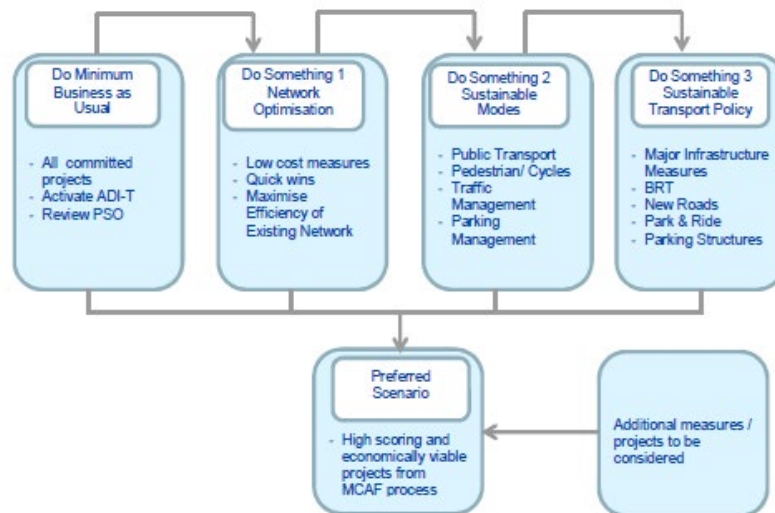
The comparison of the scenarios could include the following aspects:

- Technical feasibility: technical choice, availability of the technology, risk (land acquisition, social acceptability, archaeology, environmental impacts), operability;
- Economic feasibility: cost, financial profitability, socio-economic profitability, travel time savings;
- Concrete (estimated) impact on MYC core indicators (see above; GHG emissions reduction, traffic safety, access to public transport, air pollution, modal split);
- Concrete (estimated) investment results on the MYC core indicators (km of sidewalks, cycle lanes, bus lanes, etc.);
- Institutional feasibility: regulatory and institutional frameworks with clear definition of roles and actors (including level of participation of stakeholders);
- Impact on the surrounding environment: impact on land-use and urban development, environmental and social impact, induced economic development, etc.;
- Improvement of social inclusion and promotion of equality of opportunity between citizens, gender, accessibility to poor or vulnerable areas / populations;
- Implementation probability, alignment with national/local policies, alignment with existing policies and plans, political support.

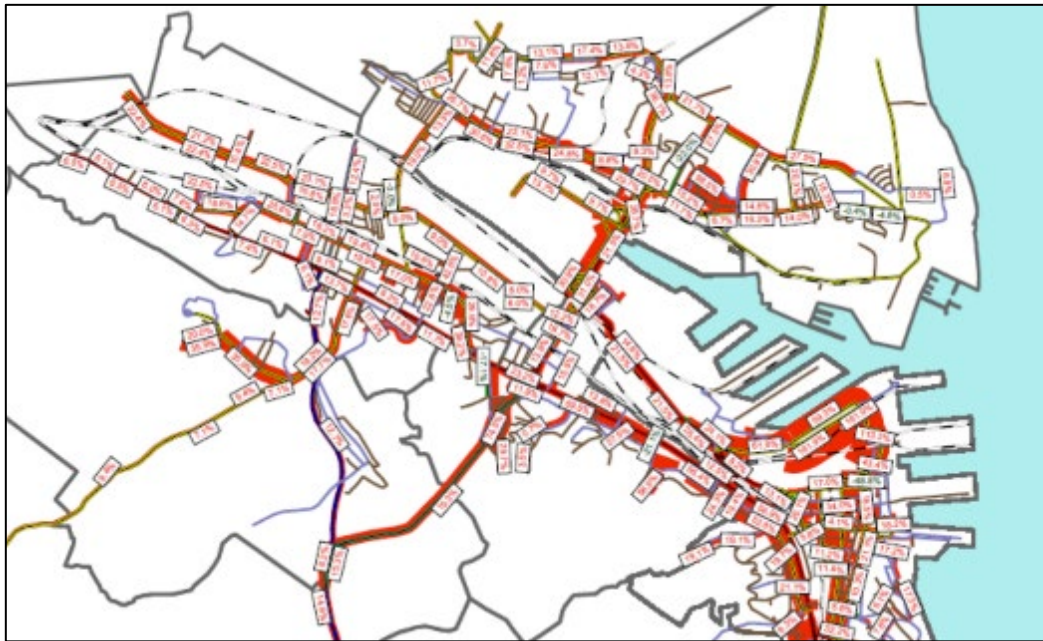
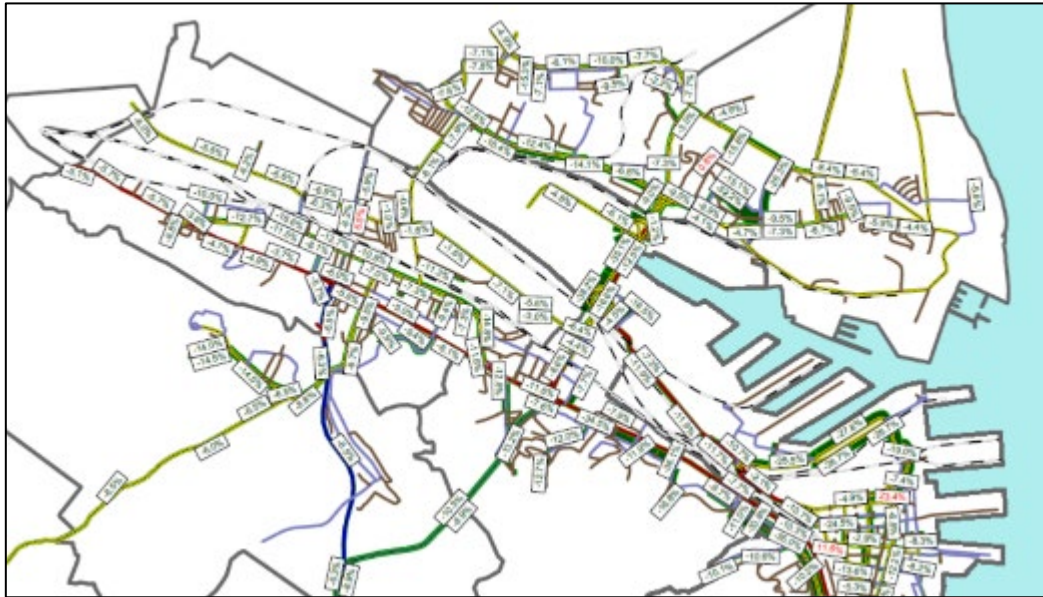
**Inspirational example 32.** Example showing different scenarios and their impacts. *Note: Source, Transport for an attractive city, TRAST*



**Inspirational example 33.** Overview of different scenarios. Note: Source, SUMP Brasov



**Inspirational example 34.** Example of effects of scenario modelling in VISUM: Scenario 1 and 2 in peak hour [change of traffic in (%) Note: Source, SUMP Gdynia



**Inspirational example 35.** Comparison of expected outcomes in different scenarios. Note: Source, SUMP Pristina

Pristina SUMP Results			Base Case	Do Nothing Scenario	Proactive Scenario	Maintenance Scenario	Liberal Scenario
Transport Model Results (2030 model)	Modal split	Public Transport	38.40%	18.40%	23.25%	21.20%	17.60%
		Cars	50.90%	50.90%	45.25%	46.60%	51.30%
		Cyclists	0.70%	0.70%	0.85%	0.80%	0.70%
	Average Speed [km/h]	Public Transport	22.1	21.7	29.2	28.8	24.4
		Cars	50.8	43.4	50.9	50.8	51.6
	Average Trip Distance [km]	Public Transport	6.73	6.73	8.64	8.66	8.92
		Cars	7.20	7.20	7.34	7.42	7.31
Total Passenger Hours [h]	Public Transport	78194	92214	108173	99254	86976	
Total Vehicle kilometres [km]	Cars	3046025.45	3683578	3415775	3512817	3910904	
Cost-Benefit Analysis Results	Net Present Value (EUR)	-	-	732,448,192	180,941,749	129,630,199	
	Internal Rate of Return (%)	-	-	12.64%	12.64%	0.19%	
	Benefits Discounted (EUR)	-	-	401,545,019	814,251,282	322,281,923	
	Gross B/C Ratio	-	-	2.846	2.651	2.015	
	Investment Cost Discounted (EUR)	-	-	168,261,264	131,051,663	195,123,500	
Multi-Criteria Analysis Results	Number of implemented Measures within TOP 10 according to MCA Results	-	-	10	7	7	

**Inspirational example 36.** Benefit analysis of proposed interventions. Note: Source, Low Carbon Comprehensive Mobility Plan Vishajhapatnam

Scenario	Base year	BAU	BAU+LU	BAU+LU+PT	BAU+LU+PT+NMT	BAU+LU+PT+NMT +Technology
Horizon year	2011	2030	2030	2030	2030	2030
Population	1,730,320	2,946,000	2,946,000	2,946,000	2,946,000	2,946,000
Total trips	2,438,130	4,831,440	4,831,440	4,831,440	4,831,440	4,831,440
Mode share	Car	2%	8%	4%	3%	3%
	2W	15%	25%	21%	12%	10%
	Bus	19%	10%	11%	29%	25%
	Auto	9%	19%	22%	13%	8%
	Walk	52%	36%	38%	38%	45%
	Cycle	3%	2%	4%	4%	7%
Veh-km travelled	Car	181,982	1,442,475	728,319	572,149	572,149
	2W	1,414,115	4,670,392	3,849,064	2,202,096	1,924,532
	Bus	166,768	173,932	188,943	506,251	437,523
	Auto	250,779	1,049,113	1,191,440	718,725	464,099
	Walk	887,479	1,217,523	1,291,196	1,291,196	1,520,230
	Cycle	234,060	309,212	580,795	580,795	1,087,356
	Total vehicles on road	504,418	1,983,481	1,511,377	957,723	859,966
CO <sub>2</sub> emissions (million tonnes)	0.94	4.34	2.76	2.39	2.28	
Per capita CO <sub>2</sub> emissions (tonnes)	0.40	1.07	0.68	0.59	0.56	
Traffic fatalities/year	425	1,600	1,050	800	250	

## 5 Selected scenario and actions

### 5.1 Selected scenario

The selected scenario should be described in detail:

- Provide a **cost estimation** and the **scope of the feasibility studies** that are necessary for the implementation. The environmental and social impact of the measures and, the need for land acquisition should also be defined.
- Other factors such as the ease of implementation, the amount of risks and the degree of preparedness should be described.
- Provide information of the expected impacts of the retained scenario, especially regarding the selected core indicators.

### 5.2 Selected measures

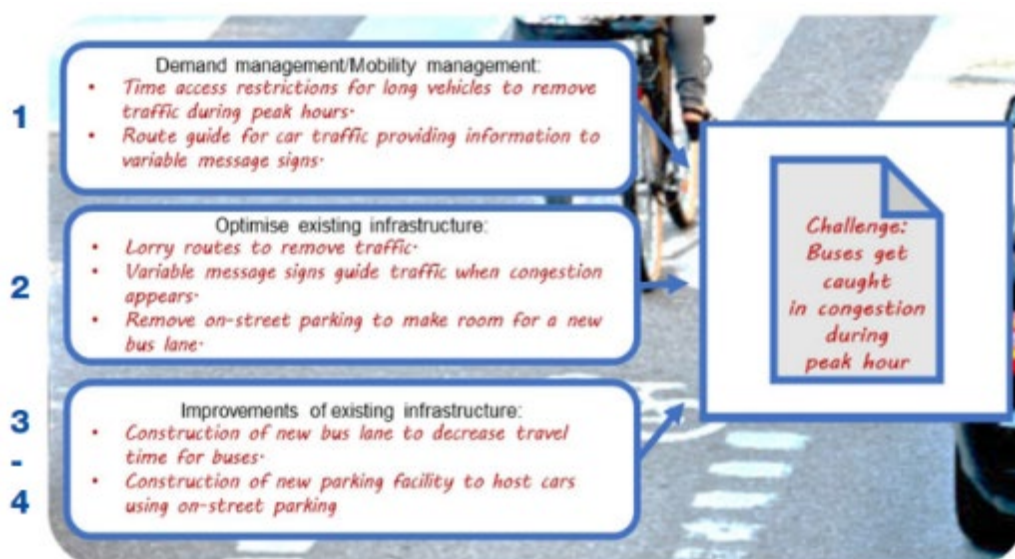
The SUMP should encompass a comprehensive set of complementary and mutually supportive measures. It may include larger and most costly infrastructure measures as well as packages of smaller and less costly (soft) measures, such transport demand management, educational, promotional or awareness raising measures.) Not more than three levels of priority should be considered.

The measures should be described in detail:

- Present a **list of prioritised measures** broken down into actions for short-term, medium and long term in an overview table including detailed action descriptions, costs, legal requirements, expected contribution to objectives, as well as suggested priorities, responsibilities and timeline.
- The description of the measures can be grouped differently, for example by transport modes, by location and by themes (public transport, non-motorized transport, traffic, road safety, emissions of GHG, resilience to climate events, etc.) to support the identification of (financially) feasible integrated packages of measures.

**Inspirational example 37.** Example of a package of measures to address a local challenge.

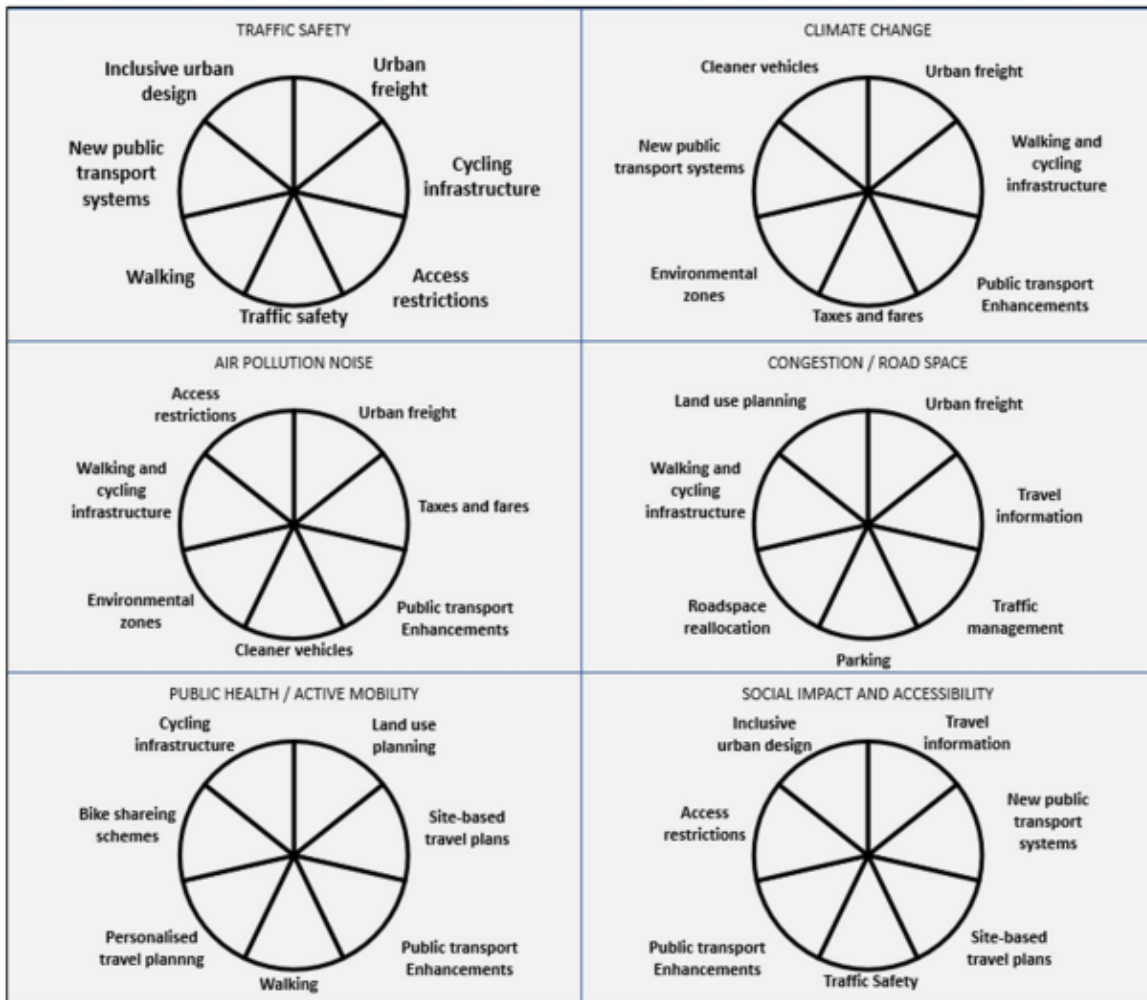
*Note: Source, STEP-UP FOR INTERMEDIATE CITIES Manual on the integration of measures and measure packages in a SUMP*



**Inspirational example 38.** Example of a structure to get an overview of the coverage of different types of SUMP measures and the balance of internal and external measures. *Note: Source, STEP-UP FOR INTERMEDIATE CITIES Manual on the integration of measures and measure packages in a SUMP*

Target: <i>No casualties in traffic accidents</i>		
Target: <i>Increased quality public transport</i>		
Target: <i>Increased modal share bicycle</i>		
Measure types	Internal measures (inward the organisation)	External measures (outward to the citizens)
Strategic policy-related measures	What has the city's administration realised? <ul style="list-style-type: none"> <li>• <i>Bicycle plan (measures, guidance, objectives)</i></li> <li>• ...</li> <li>• ...</li> </ul>	What has the city implemented? <ul style="list-style-type: none"> <li>• <i>Bicycle plan (information)</i></li> <li>• ...</li> <li>• ...</li> </ul>
Communicative measures and mobility management	What has the city's administration realised? <ul style="list-style-type: none"> <li>• <i>Travel policy for the city</i></li> <li>• ...</li> </ul>	What has the city implemented? <ul style="list-style-type: none"> <li>• <i>Information campaign</i></li> <li>• ...</li> </ul>
Physical / infrastructural measures including maintenance	What has the city's administration realised? <ul style="list-style-type: none"> <li>• <i>Allocate budget and responsibility for maintenance</i></li> <li>• ...</li> </ul>	What has the city implemented? <ul style="list-style-type: none"> <li>• <i>New infrastructure for cycle traffic</i></li> <li>• ...</li> </ul>
Regulation, service provision and legislation including land-use planning	What has the city's administration realised? <ul style="list-style-type: none"> <li>• <i>Reallocation of collected parking fees</i></li> <li>• ...</li> </ul>	What has the city implemented? <ul style="list-style-type: none"> <li>• <i>Low emission zone in city centre</i></li> <li>• ...</li> </ul>

**Inspirational example 39.** Presentation of measure areas displayed in pie charts. *Note: Source, STEP-UP FOR INTERMEDIATE CITIES Manual on the integration of measures and measure packages in a SUMP*



**Inspirational example 40.** Presentation of planned new infrastructure. *Note: Source, Budapest Transport Development Strategy 2014-2030*

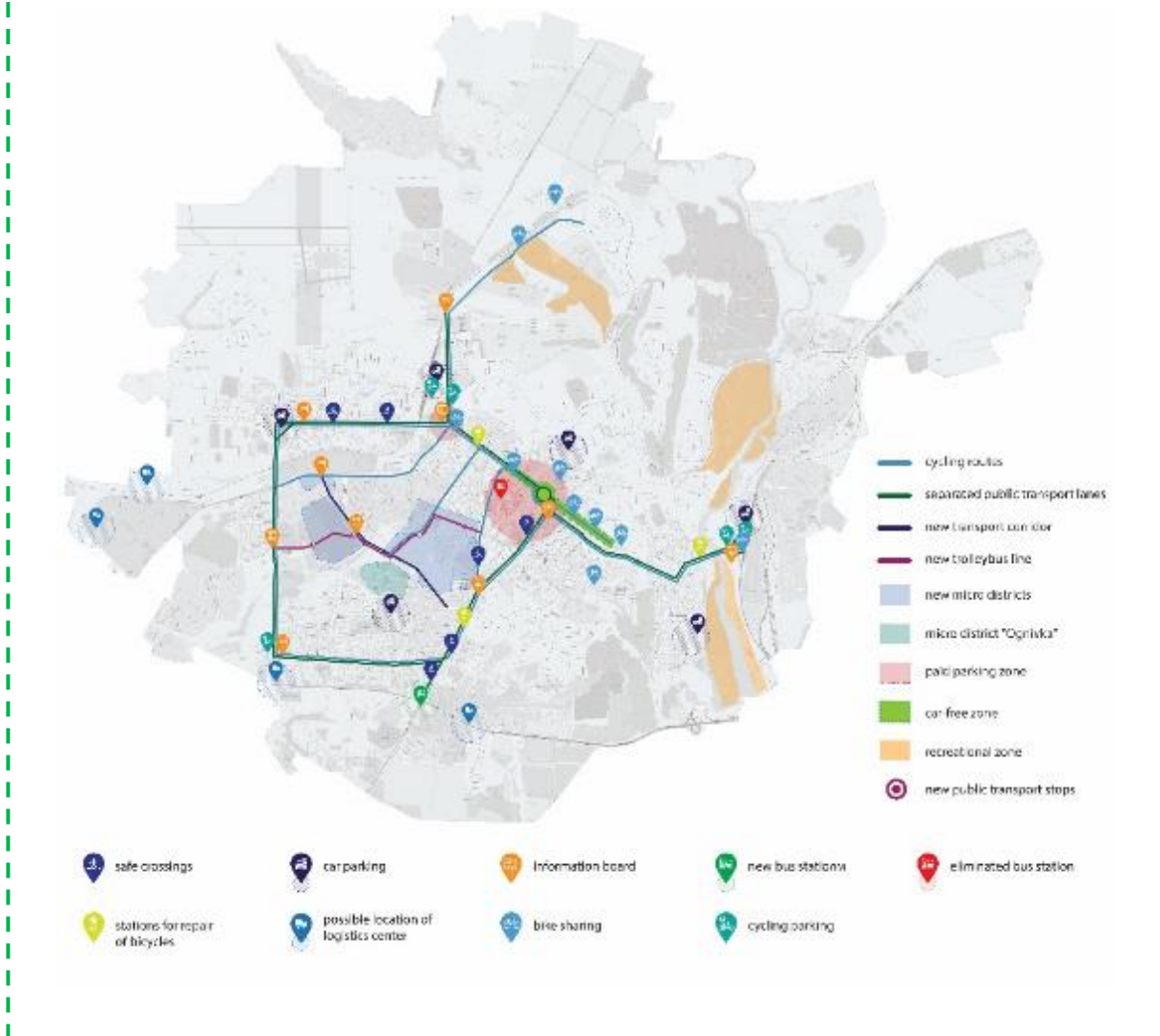




**Basic element 13. Description of selected measures and measure packages in an action table**  
(Template)

Measure	Description of measure	Connection to SUMP targets	Actions within a measure	Implementation period	Resources needed	Costs	Funding source	Stakeholders involved
<i>Segregated cycle facilities</i>	<i>Marked lanes and tracks along major urban streets</i>	<i>Very high (improve accessibility, increase road safety, promote active travel, reduce air and noise pollution)</i>	<i>Analysis of bicycle lanes needed</i>	<i>Year 1: Jan-May</i>	<i>2 traffic and city planners</i>	<i>30.000 \$ + 20% of fulltime from traffic planner</i>	<i>Municipal budget</i>	<i>Bicycle associations</i>
			<i>Develop a bicycle network plan</i>	<i>Year 1: May-Dec</i>	<i>4 traffic and city planners</i>	<i>40.000 \$</i>	<i>Municipal budget</i>	<i>Bicycle associations, neighbouring municipalities</i>
			<i>Plan and construct bicycle lanes</i>	<i>Year 2-5</i>	<i>Planners, developers</i>	<i>500\$/m</i>	<i>Municipal budget + national funding</i>	<i>Construction companies</i>
<i>Develop mobility management plan</i>								
...								

**Inspirational example 41.** Visualisation of localisation of planned measures under transformation in Poltava. *Note: Source, SUMP Poltava, 2019*



### 5.3 Cost estimates

Present a cost-estimate for the defined actions. The cost estimates shall be refined compared to the ones provide at scenario stage. Whenever necessary, operational costs or costs for studies and concept designs should also be defined. If feasibility studies have been carried out for some projects, the cost estimates in those studies will be updated.

The cost of a realistic and fundable short-term (5 year) priority action plan shall be clearly identified.

Present actions against their financing needs and revenues in the short, medium, and long term, including operation, enforcement and maintenance, and any funding shortfalls (total cost of ownership).

**Basic element 14. Estimation of costs per measure (Template)**

Measure	Actions within a measure	Implementation period	Costs
Segregated Cycle Facilities	<i>Analysis of bicycle lanes</i>	<i>Year 1: Jan-May</i>	<i>30.000\$ + 20% of fulltime from traffic planner</i>
	<i>Develop a bicycle network plan</i>	<i>Year 1: May-Dec</i>	<i>40.000\$</i>
	<i>Plan and construct bicycle lanes</i>	<i>Year 2-5</i>	<i>500\$/m</i>
Rapid Bus Transit			

**Inspirational example 42.** Presentation of precise calculation of costs for measures. *Note: Source, Comprehensive mobility plan Nagpur 2018*

Table 57 Short Term Projects

SNo	Projects	Unit	Quantity (Total)	Rates (in Cr)	Total Cost (in Cr)
<b>Short Term Improvements</b>					
1	Traffic and Pedestrian Management measures -	Km	664	0.05	33.2
2	Junction Improvements and Management Measures	Nos	10	20	200
3	Construction of Footpaths	Km	664	0.2	132.8
4	Provision of cycle track -	Km	146	0.5	73
5	Provision of Pedestrian Zones and Pedestrian Infrastructure	Nos	4	2	8
<b>Total Short Term Project Cost ( In Crores )</b>			<b>447</b>		

Table 58 Medium Term Projects

Sl.No	Medium Term Projects	Unit	Quantity	Rates ( in Crores)	Total Cost (in Crores)
6	FOB/ Walkways	Nos	10	10	100
7	Bus Augmentation	Nos	6827	3	20480
8	Bus transport Plan - Bus shelters (City bus service)	Nos	45	1	45
9	Off Street Parking Locations	Nos	5	10	50
10	ITS (Control room / PIS and Traffic Information System)	Ls	1	25	25
11	Bus Depot and Workshop	Nos	4	20	80
12	Rail Over Bridges	Nos	5	25	125
13	Redevelopment of Bus terminals	Nos	4	35	140
14	Bike Sharing Plan : Main Docking Station	Nos	9	0.5	4.5
15	Bike Sharing Plan : Substations	Nos	75	0.1	7.5
<b>Total Medium Term Project Cost ( In Crores )</b>			<b>21057</b>		

Table 59 Long Term Proposals

Sl.No	Long term Projects	Unit	Quantity	Rates ( in Crores)	Total Cost (in Crores)
16	High Capacity Mass Transit System	Km	88.1	400	19320
17	Medium Capacity Mass Transit System	Km	22.5	20	450
18	Road network Improvement Plan (New roads) -Long Term	Kms	50	10	500
19	Freight terminals	Nos	5	20	100
20	Multimodal Hub	Nos	9	10	90
<b>Total Long Term Project Cost ( In Crores )</b>					<b>20460</b>

Table 60 Total Project Cost

Project Priority	Cost( Crores - INR)
Short Term Projects	447
Medium Term Projects	21057
Long Term Projects	20460
<b>Total Cost</b>	<b>41964</b>

## 5.4 Implementation planning and funding

A thorough financial plan is needed to ensure that the previously identified measures and actions are economically sound and financially viable.

### 5.4.1 Funding sources

Present available funding and financing sources as well as the ability of the organisations involved in your SUMP to access or capture them. Complement this presentation with an organisational assessment because the financial commitments and capacities of the different organisations vary, and they have different legal rights and responsibilities related to finance.

Present financing instruments and funding sources for the selected actions beyond local budget. It should include an inventory all potential funding sources and competing budgetary needs (by other sectors and/or other cities) in order to present the amounts that would realistically be available for the urban mobility sector both for investment and operational expenditures.

- Local taxes: a special local transport tax for public transport paid by public or private enterprises, developers;
- Revenue funding: tickets, parking fees, city centre pricing, congestion charging, advertisements;
- Private sector involvement in either capital, investment, operations, or a combination of both. E.g. through public- private partnership arrangements;
- Fundraising activities involving appropriate sponsors (but consider compatibility with marketing strategy);
- Local budgets: from different municipalities and different policy domains;
- National/regional subsidies and EU funding;
- External loans, municipal and green bonds.

For measures that require external financing, present the legally appropriate borrowing entity and assess the creditworthiness.

Present sources of funding for further detailed feasibility and market studies for larger investments.

This section may need to be adjusted to consider the particular context of the country and the city for which the SUMP is being prepared. This is especially relevant for cities, where the central government is likely to have more control over the city's finances and donor financing might be both more important and more uncertain. In that case, three funding options may be formulated. The availability of financing may also depend on whether main city transport infrastructure is likely to be financed by the central government as part of a national inter-urban transport project.

### 5.4.2 Financing plan

Present a financing plan for all SUMP measures, with indicative sources of funding and financing and detailed financing plan for priority actions, that contains all projected expenditures (up-front investment) as well as operation and maintenance costs and related revenue streams per year, including taxes and contingencies, as well as revenues on an annual basis for the duration of the financing plan.

### 5.4.3 Implementation schedule

Present an implementation schedule and a time-based action plan considering the availability of funds (in volume and over time) taking into account the sequential stages of implementation, particularly the time required for feasibility studies, environmental and social assessments, review and approval of all stakeholders, mobilization of resources, establishment of specific institutional and legal arrangements if required (as in the case of public private partnerships), preparation of detailed engineering whenever necessary, selection of suppliers and contractors, etc.

The implementation schedule and action plan also ascertain what entities will take responsibility for implementing the various measures in the SUMP (including the preparatory studies) and what strengthening they may need in order to be able to do so.

Although this plan should cover the entire SUMP period, the plan shall clearly identify a realistic and fundable short-term (5 year) priority action plan.

**Basic element 15. Measure description. Source: PMUS Lorca. Plan de Movilidad Urbana Sostenible, 2017.**

**1.3 Acción B: Mejorar la accesibilidad al colegio Andrés García Soler**

1. Medida

1.3. Garantizar y mejorar las condiciones de accesibilidad

2. Objetivo y justificación

En la zona oeste, donde la ciudad encuentra su borde natural por la topografía de las montañas que la rodean, hay varios equipamientos importantes, algunos especialmente sensibles como centros de enseñanza, que por lo general no cuentan con las condiciones de accesibilidad adecuadas.

El objetivo de esta acción sería mejorar las condiciones de accesibilidad en concreto del colegio Andrés García Soler, situado junto a la red básica peatonal propuesta y que actualmente tiene su acceso directo a una rotonda de tráfico bastante peligrosa, sin una zona peatonal apta para la entrada y salida de niños.

3. Descripción de la acción

Se propone realizar unas aceras que cumplan lo indicado en la "Ficha 1.1. Red básica peatonal" y crear una plataforma única adoquinada elevada de prioridad peatonal en todo el entorno del acceso, con dispositivos de calmado del tráfico tales como señalización que limite la velocidad y dé prioridad al peatón, o como bandas de resalto para reducción de velocidad.



Ejemplo de mejora de los accesos al colegio Andrés García Soler vista desde la red básica peatonal

4. Viabilidad económica, social y ambiental

La inversión necesaria para esta acción es modesta para los beneficios que aporta, tanto en comodidad como en seguridad de la comunidad docente, niños, profesores y padres. Puede plantearse como una acción piloto que pueda trasladarse al resto de centros educativos.

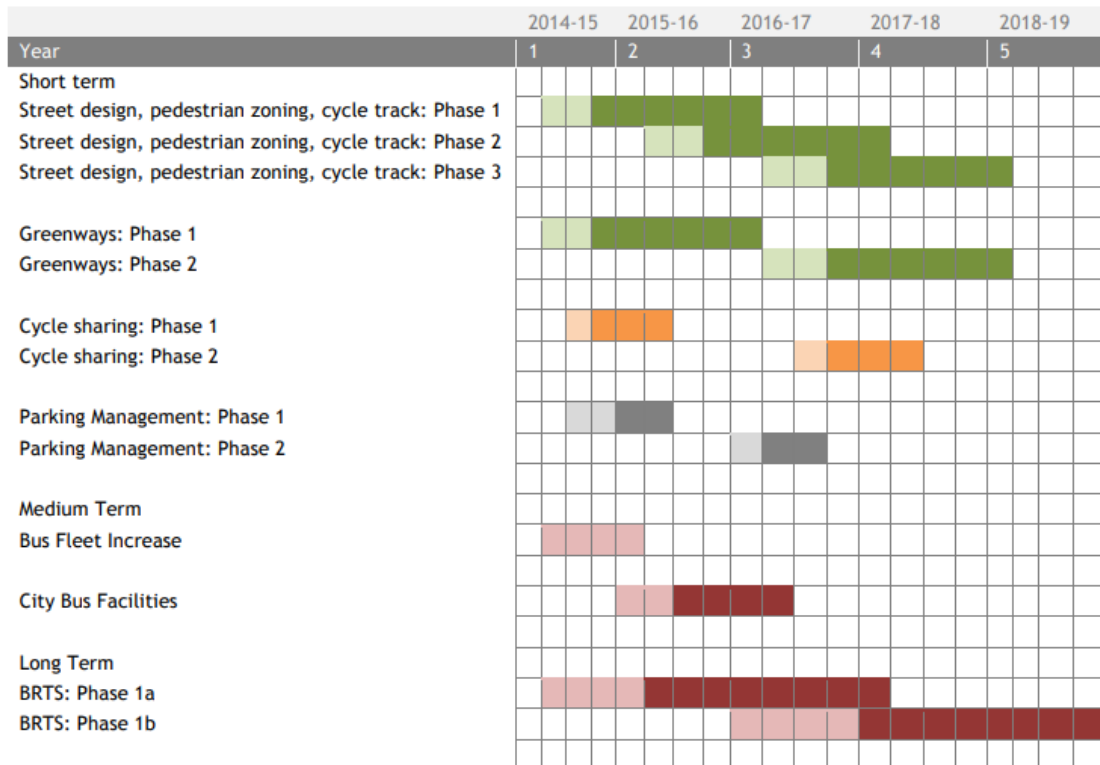
5. Presupuesto

10. Plazos (grado de ejecución)

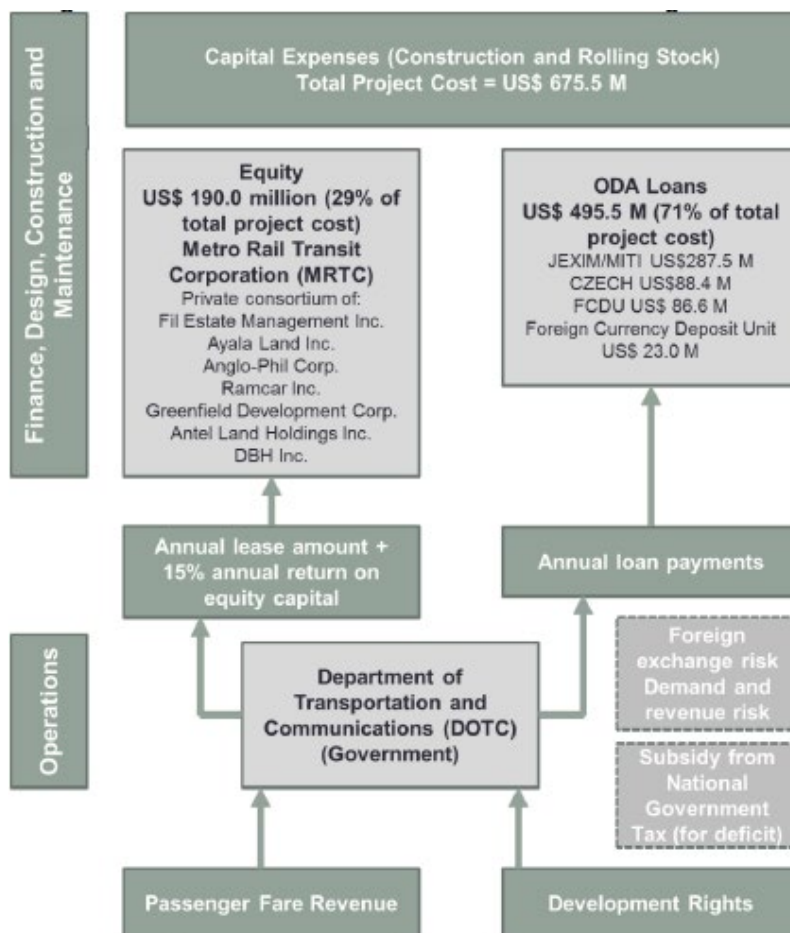
25.000 €

2017	2018	2019	2020	2021	2022	2023	2024
-	100%	-	-	-	-	-	-

**Inspirational example 43.** Definition of start and completion of measures. *Note: Source, Sustainable cities through transport, Transport budget proposals for Coimbatore, Madurai, Salem, Tiruppur and Tiruchirappalli.*



**Inspirational example 44.** Example of a budgetary framework (Metro Manila MRT3's Build-Lease-Transfer Agreement). *Note: Source, Enhancing the sustainability and inclusiveness of the Metro Manila's urban transportation systems: Proposed fare and policy, reforms Mijares et al. (2014)*





**Basic element 16.** Presentation of costs and financing for every measure. Note: Source, *Plan de movilidad Piura*, 139, catalogue of actions, costs and financing (this figure shows 2 of 8 pages)

Actividad	Horizonte	Prioridad	Áreas de influencia	Componentes					Presupuesto estimado (USD)	Presupuesto fuente de financiamiento					Plazo (meses)
				MD	IMP	MTC	MES	OT		SD	PIBM	MG	MPP	MTC	
Implementación de actividades de sensibilización en las escuelas de Piura, Castilla y León de León y Salamanca, basadas en el aprendizaje de movilidad sostenible	Corto plazo	Alta	AP Piura						\$100,000.00						12
Actividades del PDI del distrito de Piura respecto a las pautas de movilidad sostenible	Corto plazo	Alta	Piura						\$50,000.00						6
Actividades del PDI del distrito de Talcahuano respecto a las pautas de movilidad sostenible	Corto plazo	Alta	Talcahuano						\$50,000.00						6
Actividades del PDI del distrito de Cañilla respecto a las pautas de movilidad sostenible	Corto plazo	Alta	Cañilla						\$50,000.00						6
Actividades del PDI del distrito de Catacaos respecto a las pautas de movilidad sostenible	Corto plazo	Alta	Catacaos						\$50,000.00						6
Actividades del PDI del distrito de El Arma respecto a las pautas de movilidad sostenible	Corto plazo	Alta	El Arma						\$50,000.00						6
Actividades del PDI del distrito de El Talambo respecto a las pautas de movilidad sostenible	Corto plazo	Alta	El Talambo						\$50,000.00						6
Actividades del PDI del distrito de La Unión respecto a las pautas de movilidad sostenible	Corto plazo	Alta	La Unión						\$50,000.00						6
Actividades del PDI del distrito de Tumbogrande respecto a las pautas de movilidad sostenible	Corto plazo	Alta	Tumbogrande						\$50,000.00						6
Actividades del PDI del distrito de San Lorenzo respecto a las pautas de movilidad sostenible	Corto plazo	Alta	San Lorenzo						\$50,000.00						6
Elaboración del estudio para la creación de espacios de estacionamiento de bicicletas en la zona de la Universidad de Piura	Mediano plazo	Alta	Universidad de Piura						\$50,000.00						6
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Mediano plazo	Alta	Universidad de Piura						-						-
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Corto plazo	Alta	Piura						\$11,764,839.00						7
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Mediano plazo	Alta	Cañilla						\$3,432,717.90						7
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Mediano plazo	Alta	Tumbogrande						\$3,432,717.90						7
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Mediano plazo	Alta	Catacaos						\$148,701.00						7
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Mediano plazo	Alta	Catacaos						\$30,489,030.00						7
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Largo plazo	Alta	El Arma						\$8,738,080.00						12
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Largo plazo	Alta	El Talambo						\$3,158,080.00						12
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Largo plazo	Alta	La Unión						\$12,147,260.00						7
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Largo plazo	Alta	La Unión						\$4,770,800.00						12
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Largo plazo	Alta	La Unión						\$7,241,760.00						7
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Largo plazo	Alta	La Unión						\$7,631,047.90						7
Implementación de un programa de capacitación y talleres para mejorar las competencias de los docentes	Largo plazo	Alta	Tumbogrande						\$10,439,38						7
Adaptación de la infraestructura de transporte público para mejorar la accesibilidad a las personas con discapacidad	Largo plazo	Alta	Tumbogrande						\$10,439.38						7

5.5 Capacity development strategy

This section presents a capacity development for the three levels (people, organisations, society) to secure the implementation of the SUMP. Capacity development describes a process by which people, organisations and societies mobilize, adapt and expand their abilities in order to make their own development sustainable and to adapt to changing conditions.

The capacity development shall be tailored to the specific needs of the city for the development and implementation of sustainable urban mobility measures. It shall take into consideration traditional approaches to capacity development support, such as the transfer of knowledge and skills through long-term counselling and (online) training, but as well conferences, study tours triangular and south-south cooperation.

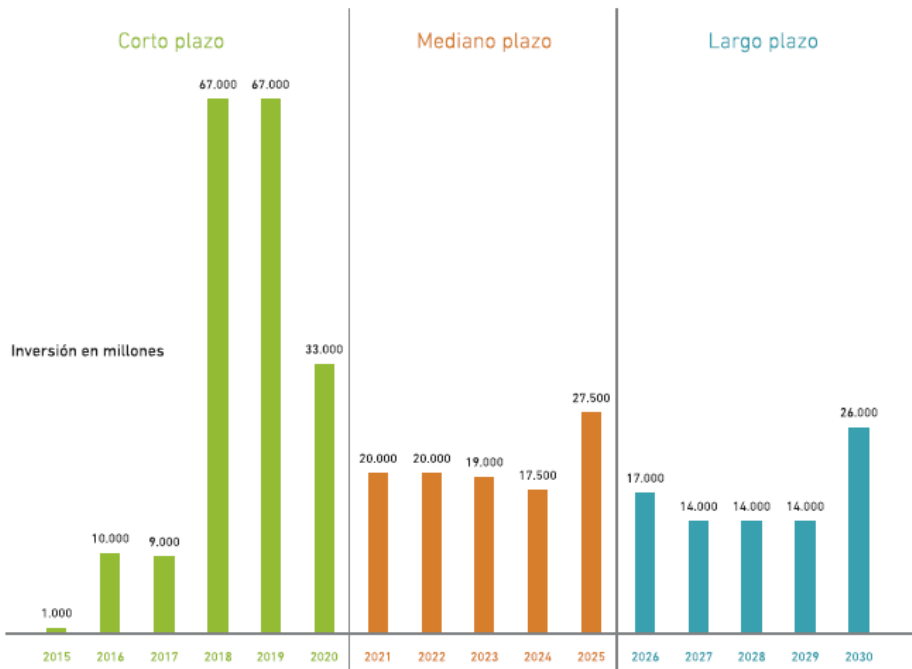
**Basic element 17.** Capacity Development Strategy. Note: Source: *Capacity Development Strategy - Mobilise YourCity Africa Community of Practice*

To be added as soon as published

**Inspirational example 45.** Differentiation of costs/budget for overarching categories. *Note: Source, Plan maestro Metropolitano de la bicicleta del Valle de Aburra*

**GRÁFICA 7-3.** INVERSIONES ANUALES DEL PMB2030

Fuente: Elaboración consultoría.



**Inspirational example 46.** Example of measures to describe measures and measure packages in an Implementation Plan. *Note: Source, Standards for developing a SUMP Action Plan*

MEASURE	DESCRIPTION OF MEASURE	RESPONSIBILITY	ACTIVITIES WITHIN A MEASURE	IMPLEMENTATION PERIOD	RESOURCES NEEDED	COST	STAKEHOLDERS INVOLVED
Segregated Cycle Facilities	Marked lanes and tracks along major urban streets.	Road owner	Analysis of bicycle lanes needed.	Year 1: Jan-May	2 traffic and city planners	30 000 € + 20 % of fulltime from traffic planner	Bicycle associations
			Develop a bicycle network plan.	Year 1: May-Dec	4 traffic and city planners	40 000 €	Bicycle associations, neighbour cities
			Plan and construct bicycle lanes.	Year 2-5	Planners, developers	500 €/m	Construction companies
Develop mobility management plan	Plan about what, when and how to work with mobility management.	City administration	Develop mobility management plan	Year 1: Apr-Oct	Expert on behaviour change, traffic planner	30 000 €	-
Improve pedestrian crossings on prioritised routes							
...							
...							

## 6 Monitoring & Reporting

Description of monitoring arrangements (including responsibilities and budget) to assess the status of measure implementation and target achievement, enabling timely and effective responses.

### 2.1 Core indicators

Present

- a defined set of core indicators that allow monitoring and evaluation of main measures with reasonable effort considering available data and limited resources for collection of new data when selecting indicators
- a clear definition, reporting format for each of them, how data is measured, how the indicator value is calculated from the data, and how often it will be measured.
- a baseline value, i.e. a starting value and a target value of desired change

Whenever possible, use standard indicators that are already well defined and where people know how to measure and analyse them.

The retained core indicators shall encompass at least all MYC standard core indicators.

## 2.2 Other indicators

Present indicators beyond core indicators that might be relevant for the city.

## 2.3 Monitoring management

Present monitoring and evaluation arrangements for all selected indicators, including

- Methodological requirements for data collection, processing and assessment
- Monitoring frequency
- Timeplan by indicator
- Monitoring procedures
- Responsibilities and stakeholder involved for monitoring
- Monitoring and reporting budget
- Methodology regarding consolidation of the SUMP indicators into aggregated indicators at MobiliseYourCity partnership scale

Provide information how to carry out MYC Monitoring, Evaluation and Reporting Framework (MER) and MYC MRV (Monitoring-Reporting-Verification) Framework.

### Basic element 18. Monitoring (Template)

MYC SUMP Core Indicators	Base line	Target 2030 (2040/2050)	Application area	Data collection/ Monitoring method	Frequency	Responsibility
Access to public transport	%	%	City			
Air pollution	mg PM2.5	mg PM2.5	City centre	Air quality measuring station (PM2.5 and NOX)	Data collected on daily basis, monthly report	Environmental department
Road Safety (number of traffic fatalities)	Pers. (in thousands)	Pers. (in thousands)				
Modal split (in pkm -not trip)	%	%				
GHG emissions from transport	MtCO <sub>2</sub> e per year	MtCO <sub>2</sub> e per year				
Additional Indicators						
Commercial speed	km/h	km/h				
Mobilised public and private funding						
Others (city specific)						
... add as needed						

**Inspirational example 47.** Monitoring of key performance indicators. *Note: Source, SUMP Brasov*

Code Indicator	Indicator	Unit	Reference 2015	Target Value 2020	Target Value 2030	Implementing Authority	Measure Time Period
Project RT1	Length of dedicated bus lanes	km	1.8 kms	6 kms	6 kms	Brasov City Council	Annual
Project PT1	Number of New Buses	Number Buses	-	17 (ADI-T lines)	18 (ADI-T lines)	ADI-T	Annual
Project PT1a*	Number of New Electric Buses	Number Buses	-	75 (RATBv)	-	Brasov City Council/ RATBv	Annual
Project PT5	Length of new Trolley Bus Lines	km	116.4 kms (existing)	4.5 kms	-	Brasov City Council/RATBv	Annual
Project PT5	Number of New Trolley Buses	Number Buses	30 (current fleet)	18 (RATBv)	-	ADI-T	Annual
Project IM3*	Park and Ride Sites Associated Trolleybus line length	Number of completed sites/ km	0 sites -	3 sites 3 kms	-	Brasov City Council/ RATBv	Annual
All Public Transport Projects	Increase Public Transport Mode Share	Mode share (Total passengers AM + PM, per year)	AM: 33.4% PM: 29.9% (14,088,635 Passengers AM + PM, per year)	AM: 35.8% PM: 31.5% (14,477,725 Passengers AM + PM, per year)	AM: 36.8% PM: 32.1% (16,548,370 Passengers AM + PM, per year)	Public Transport Operators and Modelling Team	Annual
All Public Transport Projects	Access to PT	%	Brasov 85% of population within 10 min of a PT stop	Brasov 85% of population within 10 min of a PT stop	Brasov 90% of population within 10 min of a PT stop	RATBv / ADI-T	Monthly
Project MB2 Projects MB6*, MB7*, MB8*, MB9*	Length of Cycle Lanes	km	Brasov – 4.5km	Brasov - 12 km Supplementary: 34km+	Brasov – 25km Supplementary: 52.5km	Brasov City Council and relevant local authorities	Annual

## 7 Appendix

### 7.1 List of contributors to the SUMP development

Add information required.

### 7.2 Timetable of SUMP development

Add information required.

### 7.3 Data collection methods

Add information required.

### 7.4 Participation summary

Add information required.

### 7.5 Description of scenarios

Add information required.

## 7.6 Long list of potential measures

Add information required.

## 7.7 Traffic model report

Add information required.

## 7.8 Data reporting template for monitoring and evaluation

Add information required.

## 7.9 References

Author(s) (YEAR) Title. Journal/URL.

## 7.10 Index of Boxes

Add index of Boxes.

## 7.11 Index of Diagrams

Add index of diagrams.

## 7.12 Index of Images

Add index of diagrams.

## 7.13 Index of Tables

Add index of tables.

## 7.14 Glossary

Explanation of key technical terms.

## 7.15 Area plans and future development charts

Add relevant information here.

# II. STANDARD TEMPLATE FOR SUMP

Cover page

Imprint

Foreword

## 1 Executive summary

1.1 Background of the SUMP

1.2 Objective and scope

1.3 Methodology

1.4 Document structure

1.5 Key results

1.6 Conclusions and recommendations

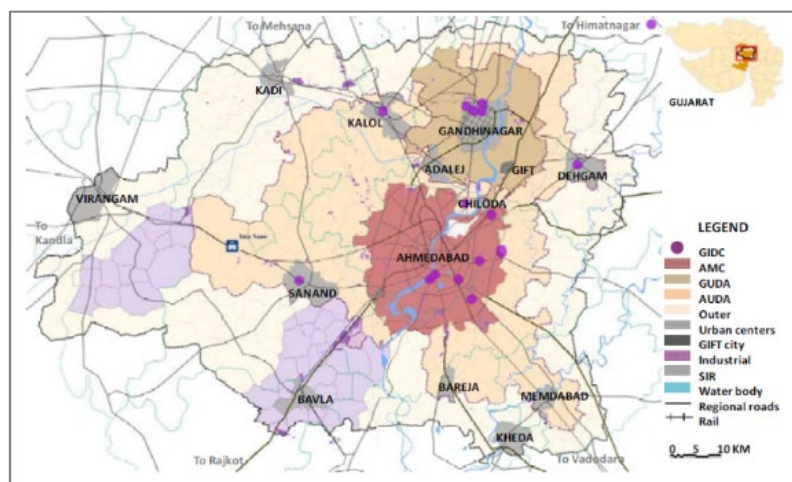
## 2 Process and management structure

2.1 Context of developing the SUMP

2.2 Process overview

- a) The SUMP time horizon:
- b) The SUMP study area:
- c) Team and development process:

**Basic element 1.** Map of the functional area. *Note: Source, Integrated Mobility Plan for Greater Ahmedabad Region 2031*



## 2.3 Stakeholder involvement

**Basic element 2.** Stakeholders and their involvement in the SUMP process (Template). List the identified stakeholders and identify their level of involvement.

Involvement in SUMP process	Type of stakeholders			
	Political support	Transport network competence	Technical expertise	Public support
<b>Strong involvement</b>	<i>City mayor</i>	<i>Public transport company</i>		
<b>Medium involvement</b>			<i>University</i>	
<b>Low involvement</b>				<i>Police</i>

## 3 Status Quo Analysis

- Description of the institutional, regulatory and financial framework
- Presentation of the main transport problems, opportunities, strengths and weaknesses based of a proper analysis of the data of all transport modes such as the following aspects:

### 3.1 Institutional and regulatory framework

- National policies and regulatory framework:**
- Local policies and regulatory framework:**
- Institutional capacities:**



**Basic element 3.** Presentation of institutional and regulatory aspects. *Note: Source, Lagos (Nigeria) Non-Motorised Transport Policy*

Ministry	Responsibility
State Ministry of Transportation	Develop and propagate transport policies and fund infrastructure improvements towards an integrated multi-modal transport system
State Ministry of Physical Planning & Urban Development	Develop building control rules and planning regulations
State Ministry of Works & Infrastructure	Design, construct, and maintain the state road network
Federal Road Safety Corps (Lagos Sector Command)	Enforce traffic rules, educate street users, and advise relevant state agencies where improvements are required to improve safety
Lagos Metropolitan Area Transport Authority (LAMATA)	Plan, design, construct, maintain, and oversee the public transport system and declared (strategic) road network
Lagos State Physical Planning Permit Authority	Issuance of building construction permits.
Lagos State Building Control Agency	Enforcement of building control regulations.
Lagos State Urban Renewal Agency	Planning and design of urban renewal areas.
Lagos State Traffic Management Authority (LASTMA)	Regulate, control, and manage traffic operations

### 3.2 Financial framework

**Budgetary and financial aspects:**

**Basic element 4.** Presentation of projects in the past five years (table above) and of the planned projects (table below) (Templates).

**Presentation of projects in the past five years**

Project / Activity	Implementation period	Responsibility	Funding source	Cost
<i>Extension of the bicycle network</i>	<i>2014-2017</i>	<i>City of ...</i>	<i>Municipal budget and national funding</i>	<i>100.000\$</i>
...				

**Presentation of planned projects (2-5 years)**

Project / Activity	Implementation period	Responsibility	Funding source	Cost

### 3.3 Planning framework

### 3.4 Demographic data and urban development

### 3.5 Mobility and transport

#### Access to public transport:

#### Basic element 5. Map of transport infrastructure

If an overall map of transport infrastructure is not available, maps with different transport aspects can be included (e.g. one map for rail, one map for streets etc.)

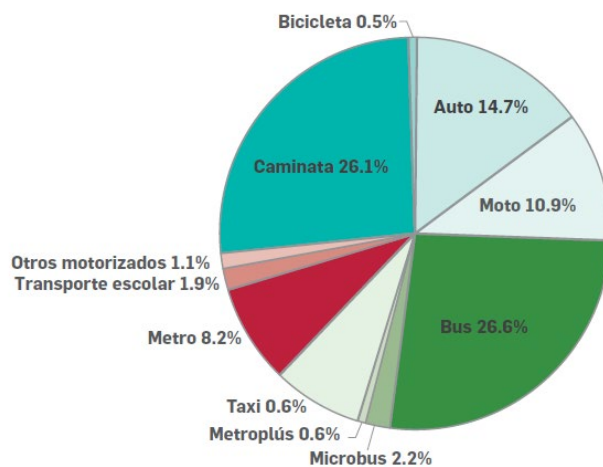
#### 3.5.1 Transport infrastructure

- a) **Inventory of transport infrastructure and transport services supply**
- b) **Indicator on existing sustainable infrastructure**
- c) Mobility services Mobility demand and traffic

#### a) **Mobility demand and traffic**

#### b) **Modal split**

#### Basic element 6. Spatial analysis of road safety regarding accidents and fatalities



Active Mobility

#### 3.5.2

### 3.6 Accessibility

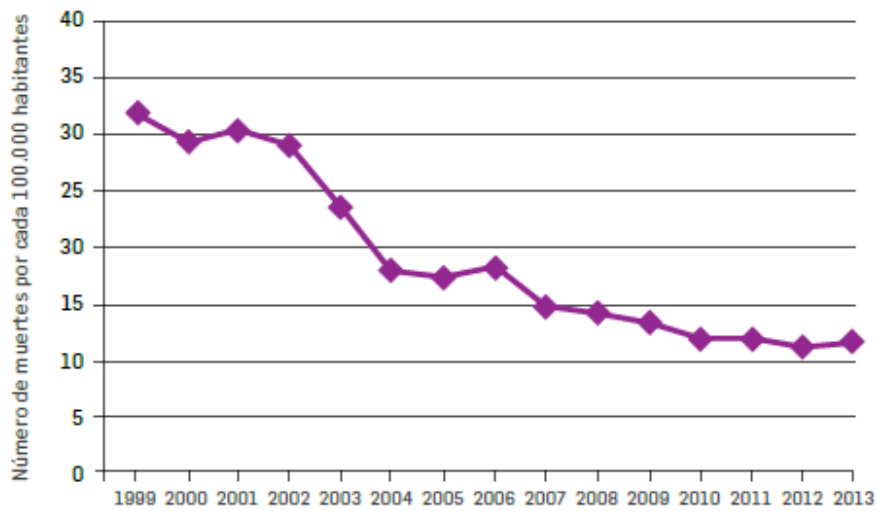
### 3.7 Road Safety

#### Basic element 7. Spatial analysis of road safety regarding accidents and fatalities

Detailed analysis on street level only if data is available

#### Basic element 8. Fatalities over time. Note: Source, Note: Source, Plan de Movilidad Segura de Medellín 2

**Gráfica 3.** Tasa de muertes en hechos viales por cada 100.000 habitantes. Medellín 1999-2013



014-2020

### 3.8 Urban freight

### 3.9 Social aspects of mobility

#### 3.9.1 Gender and mobility

#### 3.9.2 Other groups with specific mobility needs

#### 3.9.3 Transport poverty

#### 3.9.4 City Liveability

### 3.10 Environment

#### 3.10.1 Air pollution and GHG emissions data and analysis

#### 3.10.2 Noise

### 3.11 New solutions for mobility and transport

### 3.12 Baseline

#### Basic element 9. Analysis of the status (baseline analysis) of the transport system (Template)

Functions/ Transport mode	Modal share	Quality of infra- structur e	Safety and liveability	Environmen t and health	Equitable accessibility	Status of measure implementation	Main recommend ations
<b>Walking</b>	12%	Poor	Many accidents on road crossings near schools	Less and less pupils walking to school	Some areas lack walkable access to parks and sports facilities	Low activity. New “walk to school” campaign	Traffic safety measures are needed
<b>Cycling</b>	7%						
<b>Public transport (bus, tram, metro, train etc.)</b>	....	Good	Some bus stops need repair	New bus fleet has been installed, decreased impact on air quality	Reduced fare for unemployed, but infrequent buses to poor outskirts	High activity, public transport strategy planned	
<b>Vehicle sharing (car, bicycle, e-scooter etc.)</b>	....						

<b>Private motorised transport (car, motorcycle etc.)</b>							
<b>Multimodality (train station, interchanges)</b>	n/a						
<b>Freight</b>	n/a						
<b>ANALYSIS</b>			<i>Traffic safety needs to be prioritised</i>				

**Basic element 10. MYC SUMP Core Indicators**  
Please provide the current baseline for each indicator.

MYC SUMP Core Indicators	Baseline
<b>Access to public transport (in %)</b> Proportion of the population living within 500 meters or less of a public transport stop with a minimum 20 minutes service at peak hour, or have access to a shared mobility system with comparable service for money	%
<b>Air pollution</b> Mean urban air pollution of particulate matter (in mg PM2.5) at road-based monitoring stations	mg PM2.5
<b>Road safety</b> Fatalities by all transport accidents in the urban area on a yearly basis. As defined by the WHO, a death counts as related to a traffic accident if it occurs within 30 days after the accident)	Pers. (in thousands)
<b>Modal split</b> Share of public and non-motorised transport of total urban transport (in pkm -not trip)	%
<b>GHG emissions from transport [tonnes CO2 (eq.)/cap. per year]</b> Well-to-wheel GHG emissions by all urban area passenger and freight transport modes	MtCO <sub>2</sub> e per year

Additional Indicators	Base line
<b>Commercial speed</b> Average speed of a mode of transport between the two terminals, including all operational stops	km/h
Mobilised public and private funding	
Others (city specific)	

## 4 Vision and objectives

### 4.1 Vision

### 4.2 Objectives, targets and indicators

#### Basic element 11. SUMP strategic indicators and targets (Template)

Indicators	Baseline	Business as Usual 2030 (2040/2050)	Target 2030 (2040/2050)
<b>Access to public transport</b> Proportion of the population living within 500 meters or less of a public transport stop with a minimum 20 minutes service at peak hour, or have access to a shared mobility system with comparable service for money	%	%	%
<b>Air pollution</b> Mean urban air pollution of particulate matter (in mg PM2.5) at road-based monitoring stations	mg PM2.5	mg PM2.5	mg PM2.5
<b>Road safety</b> Fatalities by all transport accidents in the urban area on a yearly basis. As defined by the WHO, a death counts as related to a traffic accident if it occurs within 30 days after the accident)	Pers. (in thousands)	Pers. (in thousands)	Pers. (in thousands)
<b>Modal split</b> Share of public and non-motorised transport of total urban transport (in pkm -not trip)	%	%	%
<b>GHG emissions from transport [tonnes CO2 (eq.)/cap. per year]</b> Well-to-wheel GHG emissions by all urban area passenger and freight transport modes	MtCO <sub>2e</sub> per year	MtCO <sub>2e</sub> per year	MtCO <sub>2e</sub> per year

### 4.3 Planned and proposed measures

### 4.4 identification of integrated packages of measures

### 4.5 Short- and long-term scenarios

#### 4.5.1 Business-as-usual scenario (BAU)

#### 4.5.2 Alternative sustainability scenarios

##### a) Scenarios description:

##### b) Traffic forecast modelling results:

##### c) Multi-criteria comparison of scenarios:

## 5 Selected scenario and actions

### 5.1 Selected scenario

### 5.2 Selected measures

Basic element 12 **Description** of selected measures and measure packages in an action table  
(Template)

Measure	Description of measure	Connection to SUMP	Actions within a	Implementation period	Resources needed	Costs	Funding source	Stakeholders involved
6	7	8	9	10	11	12	13	14
<b>Segregated cycle facilities</b>	Marked lanes and tracks along major urban streets	Very high (improve accessibility, increase road safety, promote active travel, reduce air and noise pollution)	Analysis of bicycle lanes needed	Year 1: Jan-May	2 traffic and city planners	30.000\$ + 20% of fulltime from traffic planner	Municipal budget	Bicycle associations
			Develop a bicycle network plan	Year 1: May-Dec	4 traffic and city planners	40.000\$	Municipal budget	Bicycle associations, neighbouring municipalities
			Plan and construct bicycle lanes	Year 2-5	Planners, developers	500\$/m	Municipal budget + national funding	Construction companies
<b>Develop mobility management plan</b>								
...								

### 5.3 Cost estimates

Basic element 13. Estimation of costs per measure (Template)

Measure	Actions within a measure	Implementation period	Costs
<b>Segregated Cycle Facilities</b>	Analysis of bicycle lanes	Year 1: Jan-May	30.000\$ + 20% of fulltime from traffic planner
	Develop a bicycle network plan	Year 1: May-Dec	40.000\$
	Plan and construct bicycle lanes	Year 2-5	500\$/m
<b>Rapid Bus Transit</b>			

## 5.4 Implementation planning and funding

### 5.4.1 Funding sources

### 5.4.2 Financing plan

### 5.4.3 Implementation schedule

#### Basic element 14. **Measure description., 2017.**

##### 1.3 Acción B: Mejorar la accesibilidad al colegio Andrés García Soler

1. Medida 1.3. Garantizar y mejorar las condiciones de accesibilidad

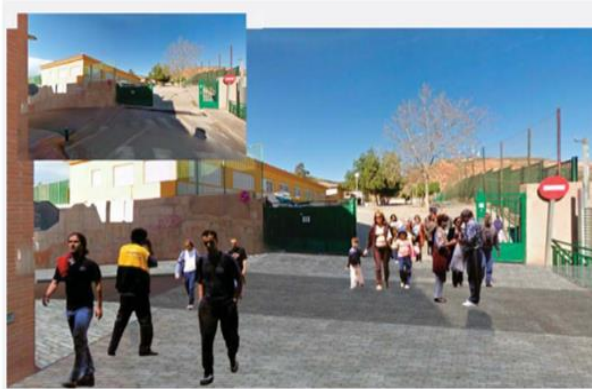
##### 2. Objetivo y justificación

En la zona oeste, donde la ciudad encuentra su borde natural por la topografía de las montañas que la rodean, hay varios equipamientos importantes, algunos especialmente sensibles como centros de enseñanza, que por lo general no cuentan con las condiciones de accesibilidad adecuadas.

El objetivo de esta acción sería mejorar las condiciones de accesibilidad en concreto del colegio Andrés García Soler, situado junto a la red básica peatonal propuesta y que actualmente tiene su acceso directo a una rotonda de tráfico bastante peligrosa, sin una zona peatonal apta para la entrada y salida de niños.

##### 3. Descripción de la acción

Se propone realizar unas aceras que cumplan lo indicado en la "Ficha 1.1. Red básica peatonal" y crear una plataforma única adoquinada elevada de prioridad peatonal en todo el entorno del acceso, con dispositivos de calmad del tráfico tales como señalización que limite la velocidad y dé prioridad al peatón, o como bandas de resalto para reducción de velocidad.



Ejemplo de mejora de los accesos al colegio Andrés García Soler vista desde la red básica peatonal

##### 4. Viabilidad económica, social y ambiental

La inversión necesaria para esta acción es modesta para los beneficios que aporta, tanto en comodidad como en seguridad de la comunidad docente, niños, profesores y padres. Puede plantearse como una acción piloto que pueda trasladarse al resto de centros educativos.

##### 5. Presupuesto

25.000 €

##### 10. Plazos (grado de ejecución)

2017	2018	2019	2020	2021	2022	2023	2024
-	100%	-	-	-	-	-	-

Source: PMUS Lorca. *Plan de Movilidad Urbana Sostenible movilidad Piura*, 139, catalogue of actions, costs and financing (this figure shows 2 of 8 pages)



**Basic element 15. Presentation of costs and financing for every measure.** Note: Source, Plan de movilidad Piura, 139, catalogue of actions, costs and financing (this figure shows 2 of 8 pages)

Acción	Horizonte	Prioridad	Área de influencia	Componentes					Procesando valorado (€/\$/€)	Posibles fuentes de financiamiento					Financ. miles	
				RD	MPP	MTC	MVS	OT		SD	MISM	MD	MPP	MTC		MVS
Implementación de acciones de movilidad sostenible en los distritos de Piura, Castilla Verde de Talara y Cutervo, a través de tecnologías 4.0	Corto plazo	Alta	API Piura						\$100,000.00							10
Realización del POI del distrito de Piura que genera las pautas de movilidad sostenible	Corto plazo	Alta	Piura						\$00,000.00							6
Realización del POI del distrito de Talara que genera las pautas de movilidad sostenible	Corto plazo	Alta	Talara de occidente						\$10,000.00							6
Realización del POI del distrito de Cutervo que genera las pautas de movilidad sostenible	Corto plazo	Alta	Cutervo						\$00,000.00							6
Realización del POI del distrito de Talara que genera las pautas de movilidad sostenible	Corto plazo	Alta	Catacaos						\$10,000.00							6
Realización del POI del distrito de Talara que genera las pautas de movilidad sostenible	Corto plazo	Alta	La Unión						\$10,000.00							6
Realización del POI del distrito de Talara que genera las pautas de movilidad sostenible	Corto plazo	Alta	El Tabal						\$10,000.00							6
Realización del POI del distrito de Talara que genera las pautas de movilidad sostenible	Corto plazo	Alta	La Unión						\$10,000.00							6
Realización del POI del distrito de Talara que genera las pautas de movilidad sostenible	Corto plazo	Alta	Tumbogrande						\$10,000.00							6
Realización del POI del distrito de Talara que genera las pautas de movilidad sostenible	Corto plazo	Alta	Luz LOMA						\$10,000.00							6
Realización del POI del distrito de Talara que genera las pautas de movilidad sostenible	Corto plazo	Alta	Luz LOMA						\$10,000.00							6
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Mediano plazo	Alta	Provincia de Piura						\$10,000.00							6
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Mediano plazo	Alta	Provincia de Piura						-							-
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Corto plazo	Alta	Piura						\$11,744,979.00							7
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Mediano plazo	Alta	Cutervo						\$5,470,777.00							7
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Mediano plazo	Alta	Provincia de Piura						\$10,941,351.00							7
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Mediano plazo	Alta	Catacaos						\$740,707.00							7
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Mediano plazo	Alta	Catacaos						\$10,400,000.00							7
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Largo plazo	Baja	Luz LOMA						\$4,700,000.00							10
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Largo plazo	Baja	El Tabal						\$3,100,000.00							10
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Largo plazo	Baja	La Unión						\$121,952.00							7
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Largo plazo	Baja	La Unión						\$4,770,000.00							10
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Largo plazo	Baja	La Unión						\$7,341,764.00							7
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Largo plazo	Baja	Luz LOMA						\$7,001,047.00							7
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Largo plazo	Baja	Tumbogrande						\$70,499.50							7
Implementación de acciones de movilidad sostenible en los distritos de Talara que genera las pautas de movilidad sostenible	Largo plazo	Baja	Tumbogrande						\$70,143.00							7

Capacity development strategy

**Basic element 19. Capacity Development Strategy.** Note: Source: Capacity Development Strategy - MobiliseYourCity Africa Community of Practice

To be added as soon as published

6. Monitoring & Reporting

6.1 Core indicators

6.2 Other indicators

6.3 Monitoring management

**Basic element 20. Monitoring (Template)**

MYC SUMP Core Indicators	Base line	Target 2030 (2040/2050)	Application area	Data collection/ Monitoring method	Frequency	Responsibility
Access to public transport	%	%	City			
Air pollution	mg PM2.5	mg PM2.5	City centre	Air quality measuring station (PM2.5 and NOX)	Data collected on daily basis, monthly report	Environmental department
Road Safety (number of traffic fatalities)	Pers. (in thousands)	Pers. (in thousands)				
Modal split (in pkm -not trip)	%	%				
GHG emissions from transport	MtCO <sub>2</sub> e per year	MtCO <sub>2</sub> e per year				
Additional Indicators						
Commercial speed	km/h	km/h				
Mobilised public and private funding						
Others (city specific)						
... add as needed						

## 7. Appendix

7.1 List of contributors to the SUMP development

7.2 Timetable of SUMP development

7.3 Data collection methods

7.4 Participation summary

7.5 Description of scenarios

7.6 Long list of potential measures

7.7 Traffic model report

7.8 Data reporting timetable

7.9 References

7.10 Index of Boxes

7.11 Index of Diagrams

7.12 Index of Images

7.13 Index of Tables

7.14 Glossary

7.15 Area plans and future development charts