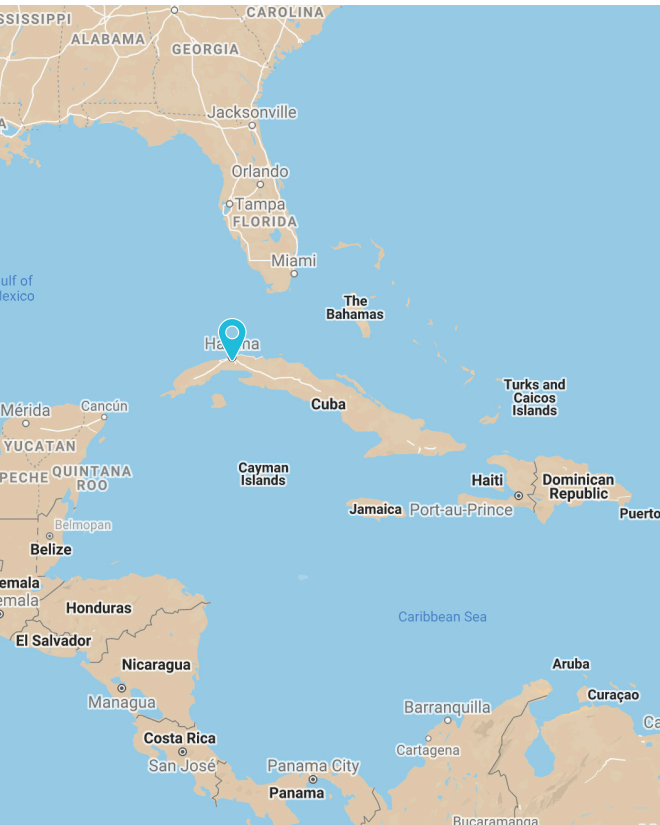


# Havana, Cuba

Partner city

Status of the project: Completed Sustainable Urban Mobility Plan and ongoing pilot project



## Basic Information

Urban area: 728 km<sup>2</sup>

Population: 2,132,183 | Growth rate: 0.16%

Country capital city

GDP per capita: USD 9,499 (2020)

Modal Share:

Formal public transport: 43,6%

Walking: 46,2%

Cycling: 1,1%

Private cars: 6%

Private motorbikes or 2-wheelers: 3,2%

Taxis: N/A

Moto taxis and Freight vehicles: N/A

National GHG emissions per capita: 3.74 (tCO<sub>2</sub>eq)

Exposure to climate change: HIGH

## Context

Havana, the Cuban capital, occupies 728,26 km<sup>2</sup>, representing 0.7% of the national area. With 15 municipalities, Havana is home to almost 20% of the country's population. The municipalities Centro Habana, Habana Vieja, Cerro, Plaza de la Revolución and Diez de Octubre are the most densely populated. Centro Habana stands out notably with a gross population density of around 41,000 inhabitants/km<sup>2</sup> while the net density in the city's residential areas is only 18,000 inhabitants/km<sup>2</sup> approximately.

Havana has a polycentric structure, and its growth has preserved the oldest fabrics of some neighbourhoods. The axes that linked the oldest nucleus with the periphery were the basis for the sprawl from the founding heart to the west, southwest, south, and southeast, which defined a tree-like pattern for the communication routes.

The bay, the fundamental reason for the final location of the city, conditioned a slower pace in the city's expansion towards the east. The construction of the tunnel of the bay in 1958 allowed for the beginning of development in this direction. These aspects determined the current structure of the transportation system, which follows a territorial model with a central zone, an intermediate zone and a peripheral zone. Despite the development beyond the central area, the main concentrations of jobs, the cultural and recreational infrastructure and tourism are in a narrow strip close to the sea, which conditions current mobility patterns. Even today, the tunnel seems insufficient in terms of mobility.

Despite being a polycentric city, the leading metropolitan functions and the most significant number of jobs are located in Havana's so-called central areas. The remaining sub-centres have weakened, limiting their ability to offer service and employment to the population. This situation forces many people living far away from the centre to commute daily to

access essential services (schools, hospitals, shops, etc.). The poor conditions of the existing urban mass transport imply that citizens consume excessive time for transportation.

The city has a public transit system and already has an existing transport master plan or similar document. Havana has organised public bus transportation (or *guaguas*) into two categories: a fleet of articulated buses with greater capacity for main routes and conventional buses for approximately 100 secondary routes.

Both the secondary and primary routes are operated by the Havana Provincial Transportation Company, which operates 17 main routes and 104 secondaries corridors and has 17 bus terminals for their operations. There are also bus services between Havana and other provinces (Viazul, Transtur, Transgaviota in CUC, and National Buses in CUP).

The Ministry of Transportation (MITRANS) is responsible for organising the transportation sector in Cuba, and the General Directorate of Provincial Transportation of Havana (DGTPH) is responsible for managing the transportation sector in Havana. The General Directorate of Provincial Transport of Havana (DGTPH), the local counterpart, has the mandate and responsibility to finance mass public transport infrastructure. It does not have the authority to borrow from international finance sources. Systems and procedures are partially in place to monitor, evaluate and report on urban transport.

The technical cooperation seeks to formulate a Sustainable Urban Mobility Plan (SUMP) in Havana, allowing for a diagnosis of the city's mobility and sponsoring working sessions with the Convention of Territorial Planning and Urbanism and the Scientific Convention of Engineering and Architecture. The SUMP will generate proposals implying a change in modal distribution, improvement of transit, public transport, cycling and pedestrian mobility. In turn, the pilot project seeks to recover the Eje de Galeano to guarantee high pedestrian flow and thus provide better public pedestrian spaces that guarantee accessibility.

The transformation of the pedestrian heavy Eje de Galeano will be an example of a pro-sustainable urban mobility transformation with an impact on the improvement of the urban environment and a great impulse for the reception of the SUMP. This pilot project expects to decrease the pollution load, increase pedestrian safety on the axis, and improve access to public space, social resources, and cultural facilities.

## Support from the Partnership

**Technical assistance:** Sustainable Urban Mobility Plan (SUMP) and pilot project

**Funded by:** European Commission

**Funding amount:** EUR 700,000

**Implemented by:** AFD through the EUROCLIMA+ Programme

**Local counterpart:** General Directorate of Provincial Transport of Havana (DGTPH)

**Supported activities (SUMP):**

- Development of a SUMP for the city of Havana

**Supported activities (Pilot Project):**

- Definition and preparation of a Pilot Project for sustainable mobility in the city. The project improves public spaces in the Eje de Galeano to guarantee pedestrian flux and accessibility.
- Definition and preparation of a project to improve mobility on the *10 de Octubre* corridor, Havana

## Status of implementation (SUMP)

**Project start:** 2021 Q1

**Expected project completion:** 2022 Q2

**Completed outputs:**

- Diagnosis and evaluation: inventory and analysis of the current situation
- Vision and strategic goals
- Action plan
- Monitoring, Reporting and Verification (MRV) Plan
- Final approved Sustainable Urban Mobility Plan (SUMP)

## Status of implementation (Pilot Project)

**Project start:** 2022 Q1

**Expected project completion:** To be defined

**Next expected outputs:**

- Diagnostic proposal and perimeter of the Pilot Project of sustainable mobility
- Preliminary design and technical specifications Pilot Project

## SUMP key measures and cost estimates

The following table highlights the most significant measures identified in the SUMP.

<b>Total</b>	<b>1,093,466,924 USD<sup>1</sup></b>
<b>Measure</b>	<b>Cost Estimate</b>
<b>1. Pedestrian mobility</b>	<b>32,539,332 USD</b>
Establish regulation on pedestrian infrastructure and plan its application	10,500 USD
Adapt and preserve sidewalks	25,836,089 USD
Widen sidewalks	5,000,533 USD
Generate more walking and shared-use streets	1,692,210 USD
<b>2. Cycling mobility</b>	<b>7,203,513 USD</b>
Elaborate a Cycling Director Plan for Havana	10,418 USD
Awareness-raising campaign about cycling	104,178 USD
Develop a network for buying, selling and repairing bicycles	10,418 USD
Create safe cycling infrastructure, including parking spaces	4,136,324 USD
Extend the bike-sharing system	2,942,175 USD
<b>3. Public transport and intermodality</b>	<b>942,590,406 USD</b>

<sup>1</sup> Originally, the budget was split into two sections. A number of measures' costs were calculated in the local currency (CUP) and the remaining ones in euros. This division was proposed to link the measure with potential sources of finance available (domestic or international). The table shows the total cost for each measure converted into USD.

Measure	Cost Estimate
Improve gender equality in the public transport system	10,417 USD
Implement the fleet renewal plan and guarantee the fleet's sustainability	631,292,963 USD
Plan the public transport network restructuring	266,802 USD
Develop social networks for electric three-wheelers	4,736,641 USD
Implement mass-transit axes and structure public transport's network	118,715,163 USD
The operation, information, technology and fare integration of the public transport system	20,488,098 USD
Physical integration: Develop Passangers Urban Stations	167,080,322 USD
<b>4. Urban logistics</b>	<b>77,216 USD</b>
Creation of on-loading and off-loading zones	66,798 USD
Strengthen the freight transport management policy and relocate the stores	10,418 USD
<b>5. Mobility management and road safety</b>	<b>4,896,356 USD<sup>2</sup></b>
Make a Road Safety Plan with a Zero Vision focus	10,418 USD
Reduce speed limits on the roads with the most traffic violence	10,418 USD
Design safe crossing roads with signalling and traffic lights	781,333 USD
Reorganise road space and generate low-traffic zones	(already contained in other measures costs)
Improve road maintenance and connectivity	4,083,769 USD (per year)
Parking policy	10,418 USD
<b>6. Electric mobility and transport decarbonisation</b>	<b>4,034,883 USD</b>
Develop an electric mobility action plan	10,418 USD
Decarbonise the omnibus fleet	4,003,629 USD
Promote electric mobility	10,418 USD
Decarbonise urban logistics and promote intermodality	10,418 USD

The following table summarises the total capital expenses (CAPEX) estimates for different types of measures in the SUMP.

Urban transport investment measures	CAPEX Estimate (USD M)
Public transport and NMT	961,432,420 USD
Street shaping urban roads and traffic management	4,083,769 <sup>3</sup> USD
Other measures (Transport electrification)	4,003,689 USD
<b>Total</b>	<b>969,519,818 USD</b>

<sup>2</sup> This total includes only one year of the Improve road maintenance and connectivity measure to simplify calculations

<sup>3</sup> Cost estimate per year

## Projected impacts

Indicator	Impact 2030 (SUMP vs BAU)	Baseline - 2021	Projected 2030 BAU	Projected 2030 SUMP scenario
Total annual GHG emissions (Mt CO <sub>2</sub> eq)	Not quantified	1,72 Mt CO <sub>2</sub> eq <sup>4</sup>	Not quantified	Not quantified
Annual transport related GHG emissions per capita (kg CO <sub>2</sub> eq)	Not quantified	805 kg CO <sub>2</sub> eq / capita	Not quantified	Not quantified
Modal share	TOTAL: +0.86%	Formal public transport: 43.6%	Formal public transport: 43.8%	Formal public transport: 44.5%
Increase of the modal shares of trips by public transport, walking and cycling		Walking: 46.2%	Walking: 46.2%	Walking: 46.2%
		Cycling: 1.1%	Cycling: 1.1%	Cycling: 1.1%
		TOTAL: 90.9%	TOTAL: 91.1%	TOTAL: 91.8%

## Perspectives for implementation

### The SUMP development enabled the participation of both institutions and citizens

The development of the SUMP was a collaborative effort that involved various stakeholders, including a Technical Committee and the city's residents. The Technical Committee, a consultative and executive body comprising experts from different fields, provided invaluable support in making strategic decisions. To ensure the plan reflected the needs and aspirations of the city's residents, a range of participatory activities were organised, such as work meetings, participatory workshops, discussion tables, interviews, and focus groups. These initiatives gave the citizens a voice, allowing them to actively contribute to developing a more sustainable and inclusive transportation system for their city.

## Insights from practice: lessons learned from the SUMP process

### Immense financial contributions are needed to ensure SUMP implementation

Havana's SUMP, completed in 2022, aims to improve the city's transport system by expanding public transport services, promoting cycling and walking, and optimising traffic flow. It is expected to address various city challenges, such as traffic congestion, air pollution, and inadequate public transportation services. The successful adoption and implementation of the SUMP are expected to improve the quality of life for Havana's residents and enhance the city's economic competitiveness.

Implementing the SUMP requires a significant investment that exceeds the previous 20 years' level, with a more robust national contribution in foreign and national currency. Achieving this effort involves a structural change in financing in the transport sector and a well-defined national contribution in the SUMP action plan, including infrastructure and road safety.

<sup>4</sup> Estimation by the MobiliseYourCity Secretariat based on SUMP deliverables.