

Antofagasta, Chile

Partner city

Status of the project: Completed Sustainable Urban Mobility Plan



Basic Information

Antofagasta urban area: 30,718 km²

Population: 388,545 | Growth rate: 2%

Region capital city

GDP per capita: USD 47,000

Modal Share:

Formal public transport: 25.08%

Walking: 28.31%

Cycling: 0.33%

Private cars: 35.13%

Taxis: 9.13%

Freight vehicles: 1.28%

Other: 0.74%

National GHG emissions per capita: 5.92 (tCO₂eq)

Exposure to climate change: MEDIUM

Context

Antofagasta spans 30 km in length and averages 2 km in width, where approximately 380,000 citizens residing there according to the 2017 census. The city, primarily reliant on the copper mining industry for economic development, attracts tens of thousands of migrants seeking employment opportunities. The intercensal variation (2002-2017) indicated a notable population increase of 22.99%, surpassing the national growth rate of 16.26%. Antofagasta experienced a significant population surge, adding 72,396 new inhabitants during the intercensal period. A considerable portion of these newcomers are immigrants drawn to the region by its climate and employment prospects.

Around 100,000 vehicles traverse the city daily, covering average distances ranging from 5.9 and 7.4 km. Geographic constraints and demographic pressures have pushed the city's expansion to the north and south, with more than 60% of the population residing in the northern sector. Nonetheless, the central area remains the focal point for services, employment, and economic activities, leading to congestion and straining the already inadequate transport network. The transport network has, in turn, only exacerbated urban development and land use challenges. The two branches of the private train that transports materials from the mines to the port pass through the heart of the municipal territory, dividing the city in two, interrupting traffic flows and consuming a large part of the urban territory with its right of way.

Faced with this, the Regional Government, in conjunction with the Local Government and other institutions, has promoted a series of mobility initiatives that complement the current public transport system and the urban transport master plan. However, these are not necessarily linked to each other, and their impact in terms of emissions is unknown.

The regional Government of Antofagasta has the mandate and responsibility to finance mass public transport infrastructure, not its operation. It has the authority to borrow from international finance sources. Systems and procedures are not yet in place to monitor, evaluate and report on urban transport development.

The SUMP process has already achieved important milestones. A Technical Board that institutionally and politically validates the development of the SUMP has been established, as well as a Social Board responsible for including the demands and perspectives of citizens and other stakeholders in the SUMP. The authorities also set up a website¹ that is the primary communication tool with citizens, hosting surveys and news.

Phases 1, 2 and 3 of the SUMP development process have ended. There is already a consolidated vision, objectives, indicators, and goals for the SUMP and a selection of measures. The SUMP's official launch happened in November 2022.

Support from the Partnership

Technical Assistance: Sustainable Urban Mobility Plan

Funded by: European Union

Funding amount: EUR 500,000

Implemented by: GIZ through the EUROCLIMA+ Programme

Local counterpart: Regional Government of Antofagasta

Supported activities:

- Develop an Integrated Sustainable Urban Mobility Plan incorporating environmental goals and implementing monitoring, reporting and verification (MRV) mechanisms to existing measures and individual modal plans.
- Support the integration of various modes of transport and enhance existing bike lanes, sidewalks and public transport infrastructure.
- Formalise the Technical Board for Sustainable Mobility within the city.
- Provide training for regional and municipal government officials.
- Foster citizen empowerment and ensure their access to decision-making processes, with a focus on investment initiatives.

Finance leverage: USD 2,313,292,800

Status of the SUMP process

Project start date: 2018 Q2

SUMP adoption date: 2022 Q4

Completed outputs:

- Status quo analysis, including emissions inventory
- Implementation of the communications and participatory process strategy, including the website and social media accounts
- Implementation and results of online surveys
- Implementation of the Technical Board
- Implementation of the Social Board
- MRV plan
- Phase I to IV completed

¹ www.movilidadantofagasta.cl

- Draft SUMP policy document
- Establishment of an [Observatory for Sustainable Urban Mobility](#) in the city of Antofagasta.
- Communications products (graphic summary of the policy text, short video, poster)
- Launch of SUMP implementation.

SUMP key measures and cost estimates

The following table highlights the most significant measures identified in the SUMP. The measures presented here are part of the prioritised set of measures².

Measure	Cost Estimate
Total prioritised measures	USD 1,222,680,555
Physical (infrastructure, rolling stock, etc.)	USD 1,202,049,946
Renewal of buses and collective taxi fleet	USD 417,000
Mass transit system	USD 576,666,667
Shelters and public transport transfer zones	USD 2,027,778
Network of high-standard pedestrian axes	USD 299,042,000
Extending the network of cycle lanes and cycle parking areas	USD 7,381,944
Urban renovation zones and incentives for residential use	USD 1,291,667
Traffic calming measures	USD 4,861,111
Enabling and consolidating urban transects	USD 78,889
Continuity of north-south road axes	USD 214,930
Integrated intermodal stations and terminals	USD 16,541,667
Technical (studies, plans, design)	USD 76,000
Restructuring of the taxi-bus service network	USD 76,000
Policy & regulation	USD 20,569,444
Parking management policy	USD 55,555
Incentives for the generation of centralities	USD 3,166,667
Fare and ticketing integration	USD 69,444
Integration of logistics in land-use planning	USD 576,389
Establishment of a regional metropolitan transport corporation	USD 76.389
Development of the Public Space Infrastructure and Mobility Plan	USD 16,625,000

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

Urban transport investment measures	CapEx Estimate
Public transport	USD 579,284,722
Active transport	USD 314,965,277
Disincentive car use	USD 17,888,888
Land use and public space	USD 430,152,777

² Measures that due to their technical, financial feasibility and GHG emissions reduction potential are indispensable to kick-off the implementation of Antofagasta's SUMP.

Urban transport investment measures	Cost Estimate
Freight and logistic transport	USD 716,027,777
Intermodality	USD 310,513,888
Governance	USD 16,701,388
Total	USD 2,385,534,722

Finance leverage

Leveraged financing (resulting or enabled by the SUMP preparation process)

Description	Source of financing	Status	Amount
State funding sources	Regional Government of Antofagasta	Planned	USD 497,011,200
State funding sources	Ministry of Housing and Urban Planning	Planned	USD 414,019,200
State funding sources	Ministry of Public Works	Planned	USD 406,896,000
Electrification of the freight train	Private company investment FCAB	Planned	USD 576,800,000
Concession mechanisms through public-private partnerships		Planned	USD 418,566,400

Associated financing (independently secured financing for measures related to the SUMP)

Package of measures	Measure	Investment	Concessional investment
Public Transport	Redesign of the service network of taxibuses	USD 62,755	
	Renewal of the vehicle fleet of taxibuses and collective cabs	USD 342,300	USD 342,300
	Mass transit system	USD 473,743,200	USD 399,350,000
	Shelters and transfer areas for public transportation	USD 1,665,860	
Active Transport	High-standard pedestrian axis network	USD 245,668,710	
	Expansion of the bicycle lanes and bicycle parking network	USD 6,064,415	
Car disincentive	Traffic calming measures	USD 3,993,500	
	Parking management policy	USD 45,640	
Land Use and Public Areas	Incentives for the generation of new urban centers	USD 2,601,480	
	Urban renewal zones and incentives for residential use	USD 1,061,130	
Logistic transport	Integration of logistics in land use planning	USD 473,515	
Intermodality	Integration of rates and payment methods	USD 57,050	
	Continuity of north-south road axes	USD 176,569,750	
	Enabling and consolidation of urban transects	USD 64,808,800	
	Integrated intermodal stations and terminals	USD 13,589,310	USD 12,151,650
Governance	Creation of a regional corporation of metropolitan transportation	USD 62,755	
	Development of the Infrastructure and Mobility Plan in the Public Space (PIMEP)	USD 13,657,770	
TOTAL		USD 1,004,456,530	USD 412,984,950

Projected impacts

Indicator	Impact 2030 (SUMP vs BAU)	Baseline – 2017	Projected 2035 BAU	Projected 2035 SUMP scenario
Total annual GHG emissions (Mt CO ₂ eq)	-0.36 Mt CO ₂ eq	0.343 Mt CO ₂ eq	0.400 Mt CO ₂ eq	0.364 Mt CO ₂ eq
Annual transport related GHG emissions per capita (kg CO ₂ eq)	Not quantified	815 kg CO ₂ eq / capita	800 kg CO ₂ eq / capita	600 kg CO ₂ eq / capita
Access Increase in the proportion of the population living within 500 meters or less of a public transport stop	Not quantified	80.4% (2018)	Steady	90%
Modal share Increase in the modal shares of trips by public transport, walking and cycling	Not quantified	63.3% (2018)	Gradually decreasing	70%
Road safety Decrease in traffic fatalities in the urban area, per 100,000 inhabitants	Not quantified	5.56 fatalities / 100,000 hab (2018)	Gradually increasing	3.50 fatalities/100 000 hab

Perspectives for implementation

Public authorities are working together to allocate funding for SUMP implementation

The regional Government worked during December 2022 with other central and local government public agencies to develop a programming agreement for financing the projects of the SUMP. A programming agreement is a financing agreement between two or more financial institutions, such as Ministries, Municipalities and Regional Governments, aimed at pooling resources for the achievement of an objective of high regional interest.

Insights from practice: lessons learned from the SUMP process

Global methodologies need to be adapted to the local context

Transport planning methods and tools used for SUMP development must meet the requisites of the Chilean national investment system; otherwise, projects cannot obtain financial resources from the central Government. Learning from Antofagasta's SUMP, the regional Government has overcome this problem in a new project when developing terms of reference for Calama's SUMP. The central Government accepts the planning methods and tools used so that projects can qualify for public resources.

Participation is a crucial component of the SUMP formulation, yet related strategies must be the most cost-efficient alternatives considering the available resources. It is important to consider public participation from the beginning of the SUMP process. This trade-off worked very well for the Antofagasta SUMP case, becoming one of the strengths of this experience. Public participation was particularly relevant for understanding the current problems and needs of Antofagasta's population.

Although the generation of two participatory roundtables (the Technical Roundtable and the Social Roundtable) was a successful process in Antofagasta, it required more resources and the need to cross-reference the work carried out in both spaces. Generating a single broad participatory roundtable (multi-sectoral, multi-level and multi-stakeholder) from the beginning of the SUMP can reduce costs and increase efficiency for process management.

It is vital to be able to communicate progress while the SUMP is under development so that people can become involved in it to generate a "collective awareness" about the urgency of acting in the transport sector to mitigate the climate crisis. Implementing the website and other digital tools proved to be of great help in this regard.

Even if it is not a binding policy instrument, ensuring budget allocation at different levels of government and governance bodies can uphold the SUMP

The Antofagasta SUMP is a non-binding public policy instrument, so its approval rests in the hands of the principal, which corresponds to the Regional Government of Antofagasta. However, to secure part of the public funding required for the plan, the Regional Government has committed to sign a "Programming Agreement", which is the general instrument through which Regional Governments engage shared funding with Ministries to finance local initiatives.

The Regional Secretariat of the Ministry of Housing and Urban Development has decided to give continuity to work carried out by the SUMP participatory roundtables, merging them and taking over their leadership. This leadership will make it possible to exercise control over the SUMP's implementation and continue empowering the stakeholders involved.

Sustainable urban mobility should be planned in interaction with other urban planning instruments and adapted to the local context

Antofagasta conceived its SUMP as compatible with other urban public policies, such as regeneration, housing or development plans, since authorities should not understand mobility from a single sectoral perspective. Several urban components influence urban mobility and vice-versa.

For the SUMP development in Antofagasta, the SUMP team harmonised the SUMP methodology proposed by MobiliseYourCity with existing transport or mobility planning processes and experiences in the local territory. Existing transport plans already addressed aspects such as modelling, indicators or measures' scope.

Antofagasta launches Chile's first SUMP mobility observatory

As part of the SUMP process, Antofagasta presented its Mobility Observatory, a platform that allows the visualization of the indicators of the SUMP, the first of its kind in a Chilean city. The observatory consists of a web platform that monitors the implementation of the Antofagasta SUMP and its strategic objectives. [Read more on EUROCLIMA+ website.](#)

Highlights in past years

Development of a Diffusion Report of Antofagasta's SUMP

An Antofagasta SUMP diffusion report was developed in November 2022. The purpose of this report is to provide information on the SUMP formulation process, its objective, key definitions, vision, measures, costs, roadmap, among other details.

Updated in December 2023