

## Governance of Metropolitan Transport in Latin America: 3 case-studies



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# Introduction

## Challenges and mobility governance in Latin America

Latin America is the second most urbanized continent of the planet, with a current population of 525 million people. It follows the world trend towards accelerated urbanization, and it is foreseen that 87,8% of its populations resides in cities by 2050. Facing this rapid growth, it is necessary for public administrations to answer in a sustainable and planned way to its populations' needs.

Mobility is at the crossroads of main urban challenges in terms of sustainable urban development: social inclusion and improvement of inhabitants' quality of life; environmental sustainability and financial viability. However, urban mobility systems in Latin America present worrying dynamics. Indeed, as shown by the Interamerican Development Bank (IDB), there is a tendency towards a 5% per year increase of the motorization rate (private vehicle and motorized two-wheelers) on the continent, which generated high levels of congestion and air pollution. Because of it, transport represents 37% of the total CO2 emissions in Latin America (compared to 27% worldwide). This trend is reflected in the changing modal split in the continent's cities, where public transport use is declining (Figure 1), creating difficulties for the financial sustainability of the systems. Finally, public systems answer with difficulty to the population's needs for their bad quality in terms of travel time, frequencies, cleanliness, safety, and their high cost for households<sup>1</sup>.

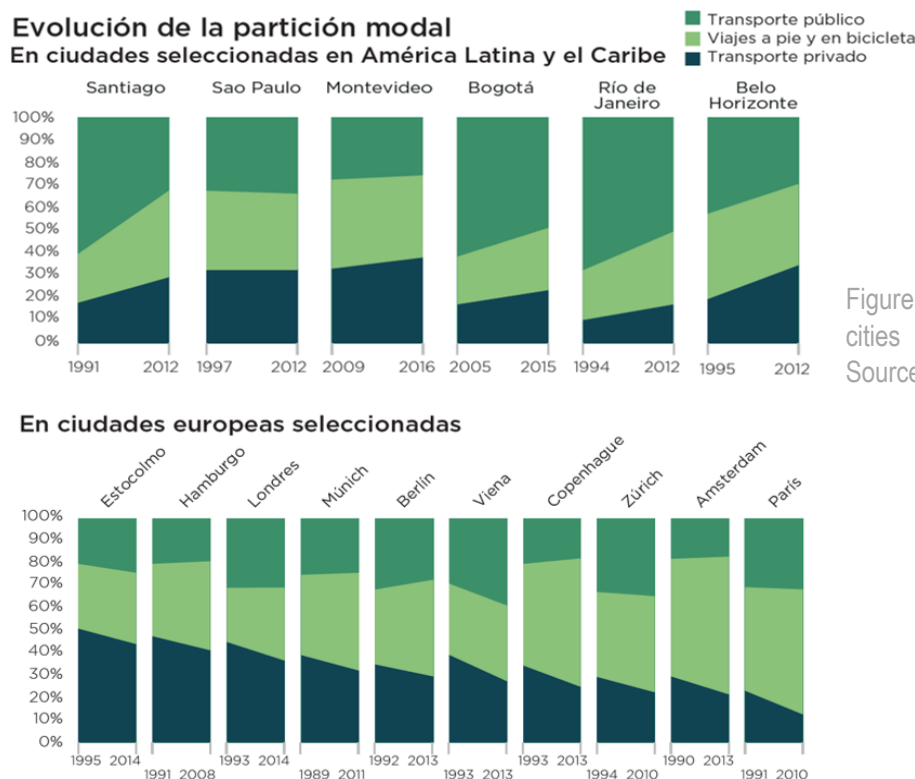


Figure 1: Change of the modal split in cities of Europe and Latin America. Source: BID.

<sup>1</sup>[https://publications.iadb.org/publications/spanish/document/Hechos\\_estilizados\\_de\\_transporte\\_urbano\\_en\\_Am%C3%A9rica\\_Latina\\_y\\_el\\_Caribe\\_es\\_es.pdf](https://publications.iadb.org/publications/spanish/document/Hechos_estilizados_de_transporte_urbano_en_Am%C3%A9rica_Latina_y_el_Caribe_es_es.pdf)



In the face of these challenges, the issues for the continent lie in the development of sustainable urban mobility systems based on the articulation of urban planning and transportation policies, in the implementation of prioritized and integrated multimodal systems, in the development of an adequate supply in terms of quality, in frequency and volumes, in the promotion of alternative non-motorized modes. For the organization of these systems, there is a need for strong operators with clear contractual responsibilities and powerful transport authorities on the territory.

Progress is visible in that direction. The continent has successful public transport models and innovative initiatives, such as the development of BRT systems, the innovative use of urban cables (world’s first was installed in Medellin, Colombia) and the increasingly integrated organization of transportation in metropolises.

Regarding the institutional organization of transport in a functional territory, which usually corresponds to several jurisdictions, there were several pioneering experiences since the 1980s, such as the metropolitan urban transport companies in Brazil. However, it is only recently that there has been an infatuation for the implementation of Metropolitan Transport Authorities, whether it is at the level of a concrete organization of experiences on the territories or at the level of its support and promotion by international institutions (i.e.: BIM, WB, CAF, EU). Literature on those examples remains mostly inaccessible, though.

This article aims to document three institutional models of transport systems organization at the metropolitan level in Latin America: The Metropolitan Public Transport Council (DTPM) in Santiago de Chile, the Metropolitan Transport Consortium (CTM) in Recife, Brazil, and the Metropolitan Area of the Valle de Aburra (AMVA), Colombia.

## Analysis Criteria

Several entities are involved in the organization of a mobility system on a territory. The Transport Authority is a guarantor of the system’s coherence and the supply of a public service that is affordable, equitable and of high quality to the population, regardless of the economic profitability of certain services. In this task, it works together with administrations, public, private, or mixed entities which are constructors, managers, and operators of the transport systems. In order to set the transport system in motion in its area of action, those entities are organized to carry out four major tasks.

The **definition of main political orientations** corresponds to a strategic vision over the long term of the mobilities system by decision-makers of the area. They define mobility goals (modes to be developed on the area, the level of private sector participation, land planning, major investment projects, etc.) usually contained within mobility policies or global plans. The second dimension (tactical) consists in **transforming those objectives in concrete propositions for mobility planning** (roads, infrastructure projects and development of the existing network, fares definition, frequency of the operation, standards for the quality of service, etc.) Finally, the third dimension (short-term) corresponds to an operational level, where systems are built, managed, and supervised. Within this operational level, we can find the **production of those services** as well as the **daily management and operation of the system** to supply the population with the transport service.



Level	Goal	Description
<b>Strategic level</b>	<b>Which vision do we want to reach? (Long-term)</b>	<ul style="list-style-type: none"> <li>· Elected officials support a city model</li> <li>· They give main orientations</li> <li>· They approve the technical solutions suggested by the technical team</li> </ul>
<b>Planning and tactical regulation level</b>	<b>Which services allow to reach this vision? (Mid-term)</b>	<ul style="list-style-type: none"> <li>· They evaluate the population's need in terms of mobility</li> <li>· They identify necessary transport infrastructure projects and plan or reorganize bus lines according to necessities</li> <li>· They define the fare policies</li> <li>· They ensure of the financial balance of the system</li> </ul>
<b>Operational level</b>	<b>How do we produce those services? (Mid and short-term)</b>	They carry out the contracts and supervise: <ul style="list-style-type: none"> <li>· the technical studies of the work</li> <li>· the companies building the infrastructure</li> <li>· the rolling stock suppliers</li> <li>· the operators of transport systems</li> </ul> it is the owner of infrastructures and must be responsible for the management of its assets
	<b>Operation (Short-term)</b>	They operate transport systems

Figure 2: The three layers of public transport organization. Source: Own creation based on the Van de Velde<sup>2</sup> and dvdh.fr scheme.

<sup>2</sup> Van de Velde, D., (1999) “Organizational forms and entrepreneurship in public transport part 1: classifying organizational forms”, *Transport Policy* 6, pp. 147–157



In order to understand how the systems’ regulation, management and operation entities are organized to successfully supply the population with the service, 5 criteria were defined to analyze the three case-studies:

- Reading the national legal framework allowed us to understand how competences in transport matter are divided between the different legal levels (national, regional, and local) and to which extend there is a metropolitan scale instituted in the law. Indeed, there are several models of metropolitan governability, ranging from inter-institutional cooperation agreements to institutional arrangements such as metropolitan governments or sectoral intermunicipal authorities (e.g., transportation)<sup>3</sup>
- Description of the territory and its transport system are important to know the purpose of the transport authority’s action.
- To understand how it works, it is important to present its institutional form (in particular its governance system) as well as its financial, human, and technical resources.
- Finally, it is necessary to study the limits of authority’s powers and functions and its articulation with other public and private agents in the transport system.

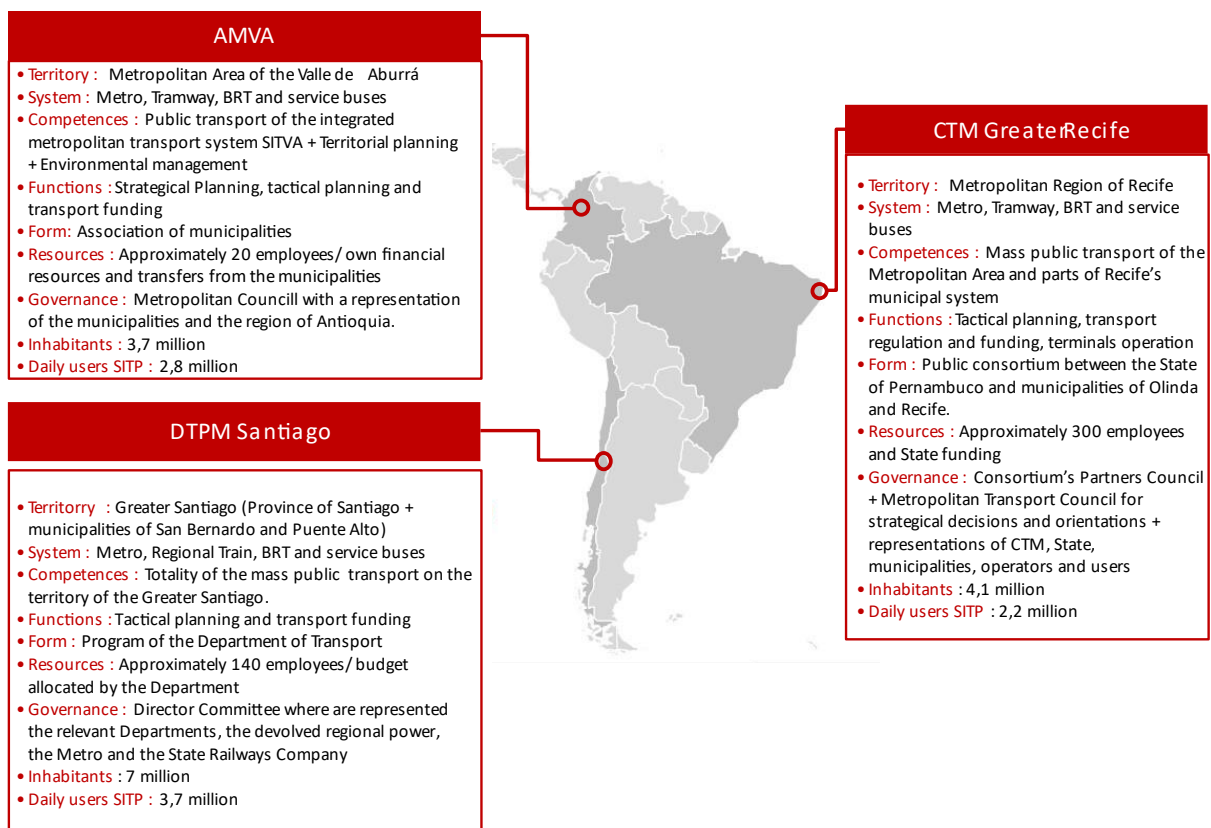


Figure 3: Three cases of Metropolitan Transport Authorities in Latin America. Source: Own realization.

<sup>3</sup> See Lefèvre, C. (2005) and Lanfranci *et al.* (2018)

# Greater Santiago, Chile

## A centralized national framework

Chile’s political and administrative organization is structured around a strong national government; regional governments are directed by a regional intendant designated by the President of the Republic and are composed by an elected regional Council; provinces play a consulting role, they are governed by a provincial presidential delegate and finally, on the municipal scale, municipal administrations are constituted by a mayor and an elected municipal council. Despite the “decentralizing spirit” of the 1980’s Constitution, decentralization of powers towards local entities is very limited and Chile remains the most centralized country in Latin America, with most of its public services administrated by departments and their devolved bodies.

Therefore, it is the Department of Transport and Telecoms which is in charge of legislating, planning, regulating and controlling public transport through the Sub-secretariat of Transport (*Subsecretaria de Transporte SUBTRANS*)<sup>4</sup> and its joint bodies and programs. In every region and for every department, there are devolved bodies for public services management: the regional Department secretariats (*Secretarias Regionales Ministeriales SEREMI*). The SEREMITT, in the case of the Department of Transport and Telecoms, apply the legislation developed by the Department in their regions, define and run the programs. The SEREMITT legislate public transport services by approving and registering the conceded and non-conceded<sup>5</sup> public transport services for their region into the National Registry of Passengers Transport Services (*Registro Nacional de Servicios de Transportes de Pasajeros RNSTP*).

Cities, on their side, have diverse functions when it comes to transport and transit. They apply norms on their area created by the Department, run, and give their opinion on road safety measures written by the SEREMITT, they define traffic orientations, they realize the signage of public space and issue drivers’ licenses<sup>6</sup>. In terms of public transport and mobility, they can give non-binding technical opinion over the service registry of the RNSTP and can carry out special programs for mobility (special free transport service to connect the hospital to the city, non-motorized mobility projects, etc.<sup>7</sup>). For urban planning, they establish the Municipal Regulating Plan that has a prescriptive nature<sup>8</sup>, plan land use and zoning, plan the location of community facilities, parking, the hierarchy of the road and the setting of urban boundaries

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<sup>4</sup> In accordance with the provisions of Art. 3 of Law 18.696, the Department of Transport and Telecoms is the body responsible for establishing the conditions and dictating the regulations under which the public passenger transport services will operate.

<sup>5</sup> Decree 212 from 1992 on the regulation of national passenger’s public transport national services and the article 3 of Law 18.696 establish that paying passenger transport services are freely organized within the framework of the regulation established by the Department. For specific cases, services are conceded. For example, in case of road congestion, environmental deterioration or people’s safety conditions, the Department can organize road use for certain services through a public tender.

<sup>6</sup> Ley Orgánica Constitucional de Municipalidades N°18.695

<sup>7</sup> See for example the “*Plan Integral de Movilidad 2019*” of the City of Santiago.

<sup>8</sup> Ley general de Urbanismo y Construcciones, artículo 41.



## A special organization in the capital

The capital has the only integrated transport system in Chile, *Transantiago*. For this reason, the Department has developed a special program for the organization and the funding of transport in the Greater Santiago: The Metropolitan Public Transport Council (*Directorio del Transporte Público Metropolitano, DTPM*) whose main goal is to make sure of the coherence and integration of the metropolitan transport network. With the creation of this network, public subsidies were created to ensure of the system's balance.

To ensure a balance between the Metropolitan area of Santiago and other areas of the country, a law was drafted, the National Passenger Transportation Subsidy Act<sup>9</sup>, that creates the Division of Regional Public Transports (*División de Transporte Público Regional, DTPR*) to support the use of public transport in the country. The DTPR organizes subsidies in the different regions to supply isolated areas of the country with means of transport, lower public transport costs for adults and university students, implement free locomotion services for students in reserved sectors, renovate buses and finance new road infrastructures in the rest of the country.

## The Metropolitan Public Transport Council - DTPM

With the existence of a metropolitan territory that grew out of the provincial limits and kept on growing fast, there was a necessity for a management scale covering the entire territory to create an integrated transport system with the subway as the central axis and a BRT articulated around it.

Within the frame of the Urban Transport Plan of the city of Santiago 2000-2006 (PTUS) the Committee of Ministers for the Urban Transport of the city of Santiago was created in 2003<sup>10</sup>. The executive secretary was formerly the General Coordinator of Santiago's Public Transport. Since 2007, with the creation of the integrated system *Transantiago*, the integrality of the system's planning is now the responsibility of the Department of Transports and Telecoms.

Later, with the objective of improving service quality, it was necessary to strengthen regulation, control, and supervision functions of the system. Therefore, in 2013, the Metropolitan Public Transport Council (*Directorio de Transporte Público Metropolitano DTPM*)<sup>11</sup> was created, as a program of the Sub-direction of Transports of the Department replacing the Committee of Ministers. Today, the DTPM has responsibility over the metropolitan transport in the greater Santiago's agglomeration.

## Santiago's Public Transport System

The mass transport system covers all the agglomeration of the Greater Santiago (Figure 4), an area of 2353km<sup>2</sup>, including the 32 municipalities that form the Santiago Province, more San Bernardo, and Puente Alto, respectively in the provinces of Maipo and Cordillera that are part of the agglomeration, which thus contains then 7 million inhabitants.

<sup>9</sup> Law 20.378 de 2009.

<sup>10</sup> Instructivo Presidencial n°1 del 7 de abril de 2003

<sup>11</sup> Instructivo Presidencial n°2 del 16 de abril de 2013





In 2018, 5,7 million users were registered<sup>12</sup>, with approximately 1100 million trips, which represent 3,7 million daily trips on the metropolitan transport network. The system counts on a subway, constituted by a network of 119,2km, 118 stations, divided in 6 lines that run through 26 municipalities of the metropolitan region and carries daily around 2,5 million passengers. This represents 44,2% of the trips made in the network. Santiago’s Metro was inaugurated in 1975 and is considered as one of the most modern system of the continent.

Figure 4: Urban sprawl of the Greater Santiago. Source: Google Maps



Figure 5: Map of Santiago’s Metro. Source: metro.cl.

This network is completed by 380 bus lines of the *Transantiago* system, nowadays called *Red*, that operate on the whole territory and carry out more than 3 million trips a day (54,7% of total trips). Six private companies operate this bus network under concession contract with the Department of Transports and Telecoms. Concessionary companies must supply with a service that is conform to directives of an operating program defined by the DTPM.

Finally, a suburban train -*MetroTren Nos*- inaugurated in 2017, runs through the agglomeration from the center to the South (from Alameda toward Nos), it is operated by the company *TrenCentral*, subsidiary company of the *EFE Group (Empresas de Ferrocarriles del Estado)*. Its network extends over

<sup>12</sup> All the data about the system comes from the 2018 Activity Report.



20,3 kilometers, contains 10 stations and transports more than 63 000 people per day, representing 1,2% of the trips on the metropolitan territory.

Fares are integrated through the card system *bip!* (Since 2007 and the implementation of *Transantiago*) and varies according to two elements: the combination of modes and the travel time (rush hours or not). In 2018, the *bip!* card became the only means of payment in all the integrated system.

The system is partly funded by the collected fares and partly thanks to the National Passenger Transportation Subsidy Act<sup>13</sup>. Initially, it was oriented to compensate the implementation of a social fare, however, since 2015 this subsidy covers the high level of the system's deficit (in 2018, it reached 579 000\$, the equivalent to 45% of the system's operation costs)<sup>14</sup>.

## Functions of the DTPM oriented towards tactical planning of the metropolitan network

The Council's goal is to articulate, coordinate and ensure the follow-up of actions, programs and measures that are distributed between private and public stakeholders in order to manage in a centralized manner Public Transport in the Greater Santiago.

The DTPM does not carry out long-term planning strategies of the transport network, which is the responsibility of the Division of Planification of the Department (SECTRA) which carries out transportation master plans for all the cities of Chile. Its functions are focused on tactical planning, with a major role on planning surface bus services of the *Red* system (ex-*Transantiago*). It designs the grid and the operation conditions in order to ensure the integration (physical, fare, operational) of buses with rail modes.

The DTPM articulates and oversees the stakeholders responsible for management and operation of transport services (7 bus operators, Metro and *TrenCentral*), as well as complementary services (marketing and loading of transport cards, financial administration<sup>15</sup>, technological equipment on board the vehicles) (Figure 6).

<sup>13</sup> Law n°20.378 and its modifications.

<sup>14</sup> [http://www.dtpm.cl/descargas/memoria/Informe\\_Gestion\\_2018\\_DTPM.pdf](http://www.dtpm.cl/descargas/memoria/Informe_Gestion_2018_DTPM.pdf)

<sup>15</sup> The DTPM only oversees the transport budget distribution to the operators. There is one independent administrator, the *Administrador Financiero de Transantiago* (AFT), which is responsible for the administration, custody and accounting of the system's resources, the distribution of resources among operators and complementary service providers.



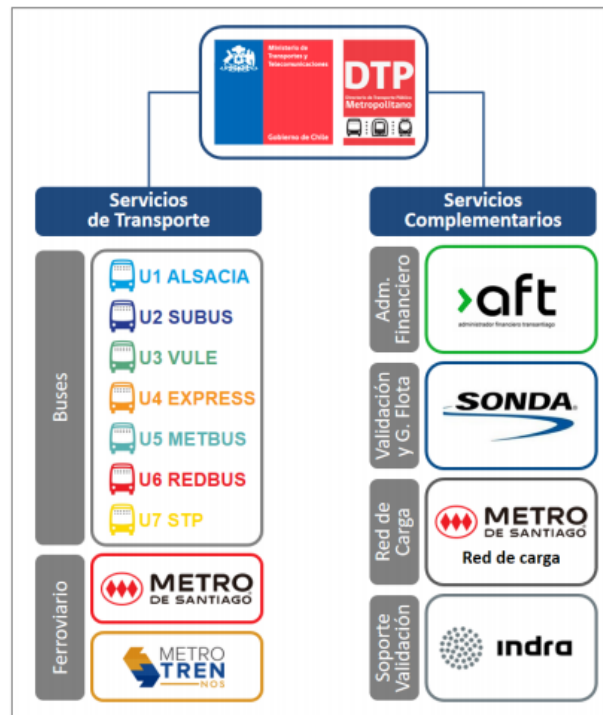


Figure 6: Stakeholders' system scheme. Source: DTPM

*Metro de Santiago* and *TrenCentral*, the state subsidiary company in charge of *MetroTren Nos*, manage their respective systems in addition to the planning of new routes, in coordination with the SECTRA. They are the owners of the infrastructure and rolling stock.

*Metro S.A.* is also responsible the production of the *bip!* card, its commercial and reloading system, as well as the implementation of transport allowances (specific commercial offers linked to the card, packages) in collaboration with private companies under contract.

Therefore, the main functions assumed by the DTPM are:

1. To offer the Department of Transport and Telecoms' authorities studies, plans for public tenders on public transport as well as the administrative, economic, and financial conditions for those tenders, and also the necessary budgetary program to conform to the Urban Transport Plan developed by the Department's Planning Division (SECTRA).
2. To coordinate the bidding process for bus routes and the contracting out of public transportation services, as well as the review of specifications and contracts related to complementary services.
3. To serve as a coordination instance for the authorities and engaged entities in the definition and operation of programs, plans and measures applied to the Public Transport System of the city of Santiago.
4. To revise, actualize and renovate the Master Plan for Public Transport Infrastructure and to coordinate the operation of works embedded in this Plan for operators, and to operate the minor public transport works.
5. To ensure the correct operation of the system, through a follow up of objectives and deadlines defined for the operation of those programs, plans and measures.



## DTPM Resources and governance

In order to perform these duties, the DTPM can count on a team of approximately 140 employees divided into 6 technical departments and 4 transversal coordination units (figure 7). The Direction of Planning and Infrastructures evaluates plans for the Metropolitan Public Transport and implements diverse investment initiatives in the frame of the infrastructure’s master plans. The Direction of Operations and Maintenance is responsible for monitoring and supervising daily operation of services. The Direction of Smart Transport Systems develops ICT projects and ensures the continuity of operation of the networks, in addition to being the counterpart of the technology service contracts needed by the system (as the company *Sonda* that supplies technological services for the validation and position of the bus fleet).

As a program of the SUBTRANS, the operation of the DTPM is part of the Department’s yearly budget, defined at the national level.

Regarding its governance, the DTPM has an executive body, the Director Committee, that meets monthly with the following participants: the Minister of Transports and Telecommunications who presides over it, the Minister of Housing and Urban Planning, who is its Vice-president, the Minister of Public Works, and the Governor of the Metropolitan Region. Also taking part as permanent guests: the Sub-Secretary of Transport, the Sub-Secretary of National Properties and the leader of the Division of Planning and Development of the Subsecretary of Transport, as well as the President of the Metro and the President of *Ferrocarriles de Estado* (EFE). It is important to note the preponderance of the national level in the Committee and its devolved representation in the region as well as the fact that municipalities are not represented despite their work in collaboration with the Department and the DTPM for the implementation of transport projects.

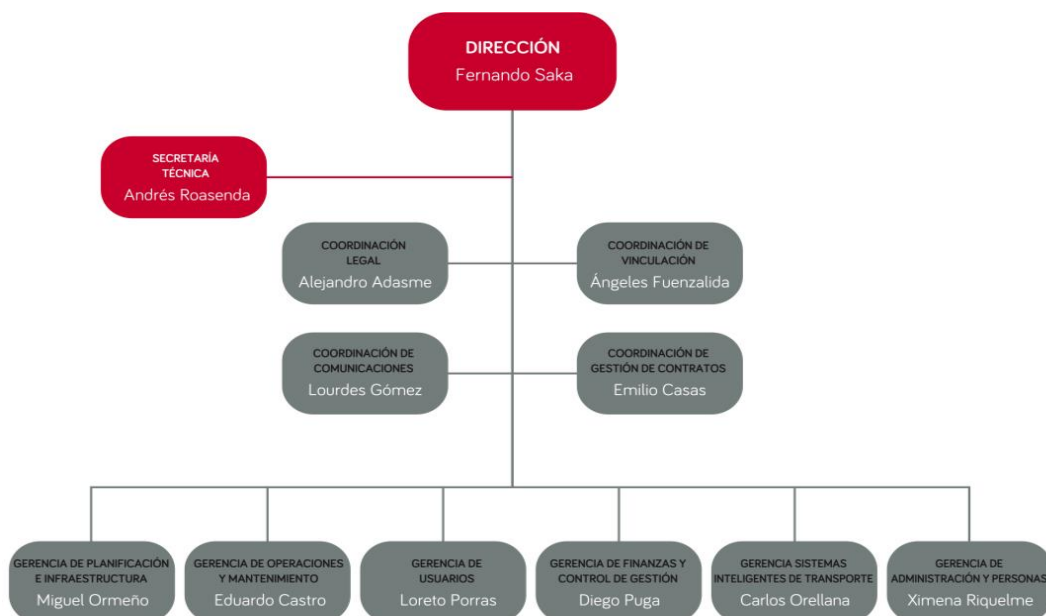


Figure 7: Organization chart of the DTPM. Source: DTPM.



## Challenges and on-going processes in the transport planning in Santiago

Since the implementation of the *Transantiago* system in 2007, the main achievements led to the current operation of an extended integrated system that includes three modes. It is integrated physically, operationally and at the fare level through a single payment method.

Continuous improvement of the system has been achieved through an ongoing process of renegotiating provider contracts and the improvement of quality criteria. Indeed, planning of the *Transantiago System*, initially designed as a self-sufficient system, led to errors in the sizing of the bus fleet and territorial coverage and had great difficulties in its implementation stage.

To this end, contingency measures, network reorganization, investments and public subsidies have been implemented since 2007. In particular, between 2010 and 2012, new contracts came into effects with the operators and the bus fleet was renewed. The development of public transport improvement plans led to the development of new bus infrastructure (separated lanes, bus lanes, bus stops, etc.) However, the metropolitan system keeps on fighting big issues, particularly about respect of quality standards by certain operators, frequency levels or regularity, travel times, level of fraud of the system (26% on the first semester 2019), high operating costs and the level of need subsidiaries (there is an estimation that over the last 10 years, public subsidies to the *Transantiago* reached the 5 172 million dollars)<sup>16</sup>.

To this end, the DTPM currently oversees the transition of *Transantiago's* system towards the Metropolitan mobility network's system with the implementation of new technical standards. First, for buses, a fleet renewal process started with more comfortable buses (internal design), more modern (less polluting, less noisy and with Wi-Fi onboard), safer buses (CCTV)<sup>17</sup> and the renovation of bus stops to improve their lighting, accessibility, and urban integration.

Faced with the difficulty of guaranteeing quality of service under the previous concession mode which left little room for action with operators who did not comply with the quality of the operation, there is currently the implementation of a new tendering model for the operations and the fleet so that the operators can manage the fleet and terminals, which are owned by the system.

At the level of institutional organization, the DTPM is seeking to gain power over the SUBTRANS, which runs the program in order to obtain stronger financing tools and therefore provide with an increasingly qualitative service.

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<sup>16</sup> Data comes from <https://www.24horas.cl/nacional/los-numeros-y-polemicas-de-los-10-anos-del-transantiago-2296438> ; <https://www.bbc.com/mundo/noticias-america-latina-50124583>, <https://www.latercera.com/la-tercera-domingo/noticia/caro-metro-santiago-andamos-las-otras-ciudades/869505/>

The system's deficiencies and the relatively high cost of Santiago's public transportation system (9th in a comparative analysis of 56 countries in terms of transportation costs by population income level) made the October 2019 fare restructuring unsustainable, which was the starting point for massive mobilizations by Chilean civil society in October and November 2019.

<sup>17</sup> By 2022, there should be an 80% renewal of the bus fleet, which is underway with a fleet renewal in 2018 that incorporated 200 electric buses and 490 green buses, as well as the incorporation of 35 new cars into the Metro system.



# Metropolitan Region of Recife, Brazil

In Brazil, States' governments play a preponderant role in transport planning at the metropolitan scale. However, multi-levels governance models are emerging and associate States to Municipalities for the provision of common services. The Consortium of Metropolitan Transport of the Greater Recife is a pioneering model in that way.

## Legal Framework in terms of Public Transport in Brazil

The distribution of competences in the field of transport is established in the Federal Constitution of 1988, which gives the Federal State power over interstate and international<sup>18</sup> land passenger transportation, in addition to being the entity with the power to legislate on national transport policy guidelines. In their jurisdictions, municipalities provide public services of local interest<sup>19</sup>, in particular public transport which is mentioned as a matter of essential character. The responsibility for transportation of intermunicipal or metropolitan nature lies with the Federated States.

At the metropolitan level, where passenger movements between municipalities' administrative territories are important, there is an overlapping of competences which creates a competition between municipal and state systems leading to a fragmented transport system. To overcome this phenomenon, a metropolitan governance scale was legally instituted<sup>20</sup>. Metropolitan regions were born with the 1967 Constitution<sup>21</sup> with the goal to carry out common services of metropolitan interest between municipalities of a socio-economical community. In 1973, 8 metropolitan regions<sup>22</sup> were instituted, including Recife's (*Región Metropolitana de Recife*, RMR). Metropolitan regions have a deliberative council with 5 members nominated by the State, which has the administrative and technical competence, as well as an advisory board with municipalities' representants, each body being presided and financed by the State.

Services of metropolitan interest include transport and road system, among others (water, hygiene, waste management, management of water and environmental resources, planning of the economic and social development, metropolitan land use services)<sup>23</sup>. Since 2015, to strengthen interstate governance in land development, Metropolitan Regions and agglomerations must present an Integrated Urban Development Plan (PDUI)<sup>24</sup>.

The joint provision of services of metropolitan scope is materialized in practice through experiences such as agreements or intermunicipal agencies, basin committees, etc. which arise from the municipalities' need to coordinate their actions. In 2005<sup>25</sup>, the Federal State created a legal-institutional instrument that provides a framework for these inter-institutional regulations: the public multi-federative consortia. Established between different federal entities (between municipalities,

<sup>18</sup> Art. 21 and 22 of the Federal Constitution of 1988.

<sup>19</sup> Art. 30 of the Federal Constitution of 1988.

<sup>20</sup> Best, 2012

<sup>21</sup> Art. 164 of the Federal Constitution of 1967

<sup>22</sup> Supplementary law n°14 of 1973

<sup>23</sup> *Ibid.*

<sup>24</sup> Law 13089 of 2015.

<sup>25</sup> Law 11.107 of 2015.



between municipalities and States, etc.), they allow for the joint management of a public service on a defined territory. Different from a cooperation convention, a public consortium has a legal personality and can only be established between political entities (and not in between public and private entities). Political entities can freely establish a consortium, only by following certain rules<sup>26</sup>: municipalities can associate with each other or with the State which contains them but cannot associate with a different State.

Regarding the financing of public consortia, each political entity commits to transfer the necessary resources needed for the consortium’s spending, proportionally to the importance of each partners’ budget. The consortium counts on a legal representant elected among leaders of the executive power of the associated political entities.

In Brazil, there are more than 490 public consortia<sup>27</sup> to manage service relating to health, environment, waste, or tourism. In the field of public transport, the Consortium of Metropolitan Transport of the Greater Recife was the first experience, followed by the ABC<sup>28</sup> consortium, which organizes transport in a sub region of the Sao Paulo Metropolitan Region.

## The model of Public Transport Consortium CTM – Grand Recife

### From the EMTU to the CTM: towards a model of multilevel governance

The Metropolitan Transport Consortium (CTM) Greater Recife was created in 2008<sup>29</sup>, as multifederative public company with a legal personality of private law. Its objective is the associate management of public services of mass passenger transport in the RMR (STPP/RMR), composed by 15 municipalities of the State of Pernambuco which represents more than 4 million inhabitants. It carries daily 2,2 million passengers, of which 400 000 use the Metro of Recife<sup>30</sup>, with a total revenue of 70 million reais per month (12,2 million USD)<sup>31</sup>.

The CTM is a consortium created between the State of Pernambuco, the municipality of Recife and the municipality of Olinda that have respectively 57, 37 and 7% of the share capital. In practice, the State of Pernambuco is the only partner that contributes to the CTM’s budget. The objective at the creation was that progressively all the municipalities of the RMR get shares of the CTM, temporarily detained by the State of Pernambuco, but nowadays, none of the other municipalities joined the consortium. In case a new municipality would want to join the consortium, there will be a share capital transfer from the State of Pernambuco towards the new member according to a predefined percentage, based on

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<sup>26</sup> Decree n°6017 of 2007.

<sup>27</sup> According to a census made by the National Municipalities Confederation in 2018.

<sup>28</sup> Association of 7 municipalities of the State of Sao Paulo, transformed into a consortium in 2008 <http://consorcioabc.sp.gov.br/o-consorcio>

<sup>29</sup> Constitution Contract of the CTM : <http://www.granderecife.pe.gov.br/sitegrctm/wp-content/uploads/2019/02/CONTRATO-DE-SOCIAL-CONSTITUIÇÃO-CTM.pdf>

<sup>30</sup> <https://www.cbtu.gov.br/index.php/pt/sistemas-cbtu/recife>

<sup>31</sup> <http://urbana-pe.com.br/sobre/o-sistema-de-transporte>



the participation of the trips managed by the municipalities on the territory of the RMR<sup>32</sup>. Even with the arrival of new municipalities, the State of Pernambuco must possess at least 40% of the share capital<sup>33</sup>.

With the creation of the CTM, was also created the Metropolitan Transport Board that runs at the state level of the Regulatory Agency for delegated public services in the State of Pernambuco (ARPE). The CTSM is composed of the technical and political representants of the associated administrations in the CTM and its CEO, in addition to other members that take part in the STPP/RMR: unions of public transport operators, CBTU-Metrorec (Local subsidiary of the Brazilian Urban Train Company) and four users’ representants. Municipalities of the RMR that could integrate the CTM in the future also have some representation in the CTSM but without voting right. The CTSM is the metropolitan body that take decisions and give orientations for the STPP/RMR, in accordance with regulations and general norms elaborated by the Deliberative Council of the RMR.

Therefore, the CTSM, as decision-making body and the CTM, its technical arm and executor, form an organization system for transport at the metropolitan region scale. This system replaced the Metropolitan Company of Urban Transports (EMTU/Recife), the state body which performed supervisory, coordination and control functions of the services and the operation of the transport system in the RMR since its creation in 1979. The transition process was led with the goal to move to a shared management between the Stat and the associated municipalities as partners of the consortium. The evolution from the old institutional model to the new one was implemented through the management of a transition committee for the migration of services and jobs.

## Competence of the CTM/CTSM: the RMR’s public passenger transportation system

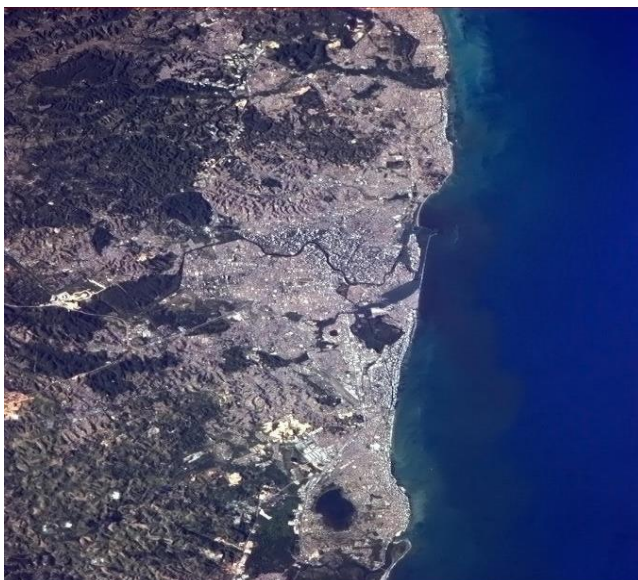


Figure 8: Satellite picture of the RMR, extended over 3126km2. Source: Google Maps

The CTM is responsible for supervision and integration of all modes that belong to the public passenger transportation system (STPP/RMR).

The STPP/RMR includes the Integrated Structural System (SEI) oriented towards mass transit and the complementary system in the territories that cannot count on an access to the SEI.

The SEI (Figure 9) is divided into three sub-systems: one railway system made of two metro lines and a tramway all managed and operated by the CBTU, the BRT system *Via Livre* with two perpendicular corridors,

<sup>32</sup> Clause 7.2.5 of the Consortium Agreement

<sup>33</sup> Clause 7.1.3 of the Consortium Agreement

and bus lines of reduced capacity for the inter-municipal and municipal scale<sup>34</sup>. Those services form a set of 185 radial lines (towards the center of Recife) and perimeter lines serving 10 of the 15 municipalities of the RMR through linkage or feeder services. Services form an integrated network through the CTM’s intermodal stations.

The CTM also organizes parts of the SC, especially the conventional metropolitan bus routes that are destined to be largely replaced by the SEI. Since 2009, all of the SEI system and the parts of the SC organized by the CTM are integrated on the fare level, through an electronic payment card VEM (*Vale Eletrônico Metropolitano*).

In its task of organizing the STPP, the CTM articulates with the municipality of Recife and the other RMR municipalities that didn’t join the consortium. Indeed, under the SC, Recife, through the Traffic and Transport Authority (CTTU) retains jurisdiction over municipal low-capacity bus routes in hard to reach areas and over traffic matters. Similarly, the other municipalities not associated with the consortium retain municipal jurisdiction over transportation and transit in their territories.

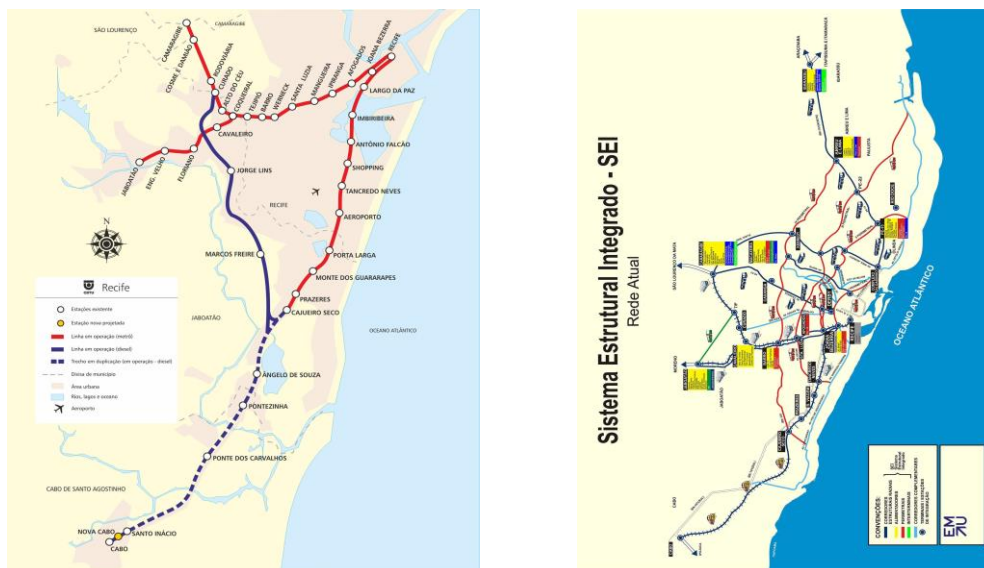


Figure 9: Map of the railway network and map of the routes and terminals of the SEI. Source : EMTU.

## CTM functions articulated to other entities

The CTSM fulfills strategic fare policy approval functions and establishes the service standards and guidelines that must be met by system operators, based on proposals made by its technical arm, the

<sup>34</sup> Municipal services under the jurisdiction of the CTM are limited to the systems of Olinda and parts of the municipal services of Recife.



CTM. The decision made correspond to the guidelines produced by the RMR’s deliberative council and the guidelines contained in the RMR’s Integrated Urban Development Plan<sup>35</sup>.

On its side, the CTM has functions of tactical planning and daily management of the Passenger Public Transport System (STTP). Its main functions are to plan and manage the STTP, to contract and oversee the operation of bus services, to manage and exploit the integration terminals, to manage the STTP budget and support the CTSM in its activities through technical proposals<sup>36</sup>. Distribution of functions between the two entities is oriented towards the regulation of the STTP by the CTSM and the management by the CTM.

With the creation of an integrated metropolitan system, there was a requirement to move from a business and service authorization model to a service concession system through public bidding.

The CTM establishes concession contracts with the 10 bus system operators and the two consortium *Conorte* and *Mobibrasil* of the BRT system *Via Livre*. During the contract’s operation, the CTM maintains inspection, oversight and control of service delivery, and the concession companies must assume the risks of their management’s success or failure.

For the railway system, the functions performed by the CTM are limited to the implementation of the system’s integration in collaboration with the CTBU. It does not define metro fares and doesn’t operate terminals that belong to the railway system. The CBTU owns the infrastructure and the rolling stock, it defines the system’s development plans according to the Integrated Urban Development Plan and operates the system.

Finally, although only two municipalities participate in the CTM, it has a region-wide reach, supporting all municipalities in the transportation planning exercise.

## CTM Funding and Resources

The CTM has more than 300 employees, who are partly former EMTU employees (whose number is decreasing), and new employees. In order to organize the transport system, the administration is organized into 5 sectors: engineering and handling for the infrastructure of terminals and stations and projects and works management; the System Planning Department; the Operation Department which oversees contracts, operation funding and monitoring, and terminal management; a Department in charge of operational management for property management and the financial and HR management. It is headed by a President Director elected by the General Assembly, itself composed by the consortium’s members. The number of votes is proportional to the shareholders’ quotas of the members, according to the consortium contract. In practice, the municipalities of Olinda and Recife have the right to vote even if they have not made their contribution to the company’s share capital.

CTM’s financial resources come from revenues derived from the sale of public transport trips, the contributions from the consortium’s associated entities, the provision of other services, fines, compensation and grants. In practice, contributions from the municipalities of Recife and Olinda are very limited or non-existent and it is the State of Pernambuco that provides the resources necessary

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<sup>35</sup> The Secretariat of Urban Development and Housing of the State of Pernambuco, through its Planning and Investigation Agency, is responsible for drafting the Integrated Urban Development Plan for the RMR in a concerted manner.

<sup>36</sup> All the functions of the CTM are described in the pages 9 to 11 of the Constitution Contract.



for the operation of the system, for investments and for the functioning of the administration of the Greater Recife.

## Ongoing issues and processes in the transportation organization of the Greater Recife

The main objective by implementing and integrating metropolitan transport system is to create a win-win situation for users, operators and the administration. The quality of services improves because costs are optimized and because it is easier to get funded thanks to a strong and consolidated body, compared to a patchwork of municipalities that organize themselves in an isolated way. For users, the integrated system resulting of the consortium’s organization allows greater flexibility and a better experience of mobility (access to all of the territory, social inclusion, integrated fares). Finally, for operators, it allows an easier access to resources for the maintenance and renovation of facilities, and guarantees the safety of payments for the provided services through stable concession contracts.

However, several of these developments were materialized before 2007 under the EMTU and several challenges that the newly formed consortium had to overcome are still there. The will to establish a shared governance between the state and the municipal level in practice didn’t necessarily materialized. The state level is still predominant in the CTM conceptual model, as it is a major partner and because the metropolitan development orientations are designed at the level of the Deliberative Council of the RMR, council that is nominated and headed by the State of Pernambuco. In practice, the CTM is mostly led by the State as Recife and Olinda never really took part in the institution’s share capital and financial contribution.

Moreover, the main challenge of the CTM is to achieve the effective adhesion of all municipalities to consolidate a single collegial management of the STTP. However, municipalities of the RMR did not demonstrate the will to associate, for fear of handing over the transport jurisdiction to a metropolitan entity that could have a centralized vision, far from reality and the necessities of the territories.



# Metropolitan Area of the Valle de Aburra, Colombia

## Legal Framework for the constitution of a Metropolitan Transport Authority in Colombia

Colombian law defines the competent authorities for transport according to jurisdictional levels<sup>37</sup>: the Department of transport acts on national jurisdiction, it is the reference authority for intermunicipal transport of short, medium and long distance; Mayors of municipalities and districts are the authorities for the municipal and district jurisdictions, without the right to authorize services further than their jurisdiction’s territory. The regional scale doesn’t have competence over transport planning, except in smaller municipalities which do not have an administration strong enough, for which the County Government assumes the role of a municipal transportation authority.

However, strategic documents, such as the Mission of the City System<sup>38</sup>, evidence the rising agglomeration and regionalization dynamics in Colombia. There are functional territories composed of several municipalities that often lack an institutional framework to coordinate dynamics at a supra-municipal level, particularly in terms of transportation, territorial development and environmental resource management<sup>39</sup>. Regarding this reality, Colombian law provides for a series of instruments : the Associated Territorial Schemes, provided for in the Organic Law of Land Planning (2011) allowing territorial entities to join forces to manage and plan urban functions at the supra-municipal and supra-regiona level, the Plan Contracts<sup>40</sup> make it possible to coordinate and strengthen the action of the National Government with the territorial entities through business plans and joint investments.

In the specific case of transport planning at the supra-municipal level, the law provides for two forms of association for territorial entities: the Metropolitan Areas and the Regional Transport Authorities.

In Colombia, as in Brazil, a metropolitan scale was born with the constitutional reform of 1968 which led to the creation of Metropolitan Areas (AM)<sup>41</sup>. Law 1625 of 2013 updates the figure of the AM, issuing rules to provide them with a political, administrative and fiscal regime, serving as a management instrument to fulfill its functions. The Metropolitan Areas are described as “administrative entities under public law, formed by a set of two or more municipalities integrated around central municipality, linked together by territorial, environmental, economic, social, demographic, cultural and technological dynamics and interrelationships which, for the planning and coordination of its sustainable development, land use planning and the rational provision of public services require a coordinated administration. This law allows to take into account the territorial dynamics beyond the political and administrative organization, allowing the formation of AM between

<sup>37</sup> Art. 10 of Decree 170 of 2001: “which regulates public service of metropolitan, district and municipal motorized passenger land transport

<sup>38</sup> Mission DNP, 2012

<sup>39</sup> CONPES 3819, 2014

<sup>40</sup> Laws 1450 and 1454 of 2012

<sup>41</sup> Existence and functioning are described in Decree 3104 of 1979, Art. 319 of political Constitution of 1991, Law 128 of 1994 and finally Law 1625 of 2013.



municipalities of a same county or of different counties, taking into account the possibility of agglomeration beyond a county delimitation.

The AM counts on a decision-making body called “*Junta Metropolitana*”<sup>42</sup>, a Metropolitan Council, whose members are the municipalities’ mayors, a representant of the central city Council, representants of the other city councils and a delegate of the national government that only has one non-voting role.

Among the different attributions given to the AM, although they are multipurpose associations, functions in the field of transport can be distinguished<sup>43</sup>. In their jurisdictions, they must elaborate metropolitan mobility policies, plan and regulate the provision of public urban transport service for physical, operational and fare integration between the different transport modes, in coordination with the different mass transport systems and integrated transport systems. They perform license granting functions, vehicle registration, tariff fixations, routes modifications, implementation and collection of sanctions...

In addition, the AMs must formulate and adopt the Integral Metropolitan Development Plan (which must be in line with the National Development Plans and the plans of the territorial entities), a strategic metropolitan land use plan and, since 2019<sup>44</sup>, a metropolitan plan for Sustainable and Secure Mobility.

The AMs do not automatically become Transport Authorities, for it is necessary to obtain an agreement of will from the mayors of the municipalities and the transfer of its competences in this field through the legal institution of the function<sup>45</sup> so that it remains a single metropolitan entity in matters of collective passenger transport.

This figure, beyond its advantages for the effective governance of metropolitan affairs, was historically difficult to implement in the territories, by lack of political will from the municipalities to join forces and transfer competences and resources as well as for the complexity of the legal constitution process because they need the approval a public consultation<sup>46</sup>. Since the creation of the Metropolitan Area of the Valle de Aburra in Antioquia in 1980, only six agglomerations have adopted this figure and can organize transportation at a metropolitan level.

In the face of this difficulty, and to answer the necessity to organize regional transport in Colombian agglomerations that do not take into account the AM, were created the Regional Transport Authorities (ART) by law in 2015<sup>47</sup>. Municipalities whose urban mobility spread out of their own legal frontiers and organized under a legally constituted territorial associative scheme<sup>48</sup> can request the national government for the creation of an ART with the following functions:

1. Regulate the public transport service

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<sup>42</sup> Functioning detailed in art. 14 and 15 of Law 1625 of 2013

<sup>43</sup> Art. 7 and 20 of Law 1625 of 2013.

<sup>44</sup> Art 96 of Law 1955 of 2019

<sup>45</sup> Each Colombian AM constituted as Transport Authority has a metropolitan agreement that delivers it.

<sup>46</sup> In Law 128 of 1994, art.5, section 5a: “The text from the project of constituting a Metropolitan Area will be submitted to a public consultation that will be approved by a positive vote from the majority of voters.”

<sup>47</sup> Art. 183 of Law 1753 of 2015 that publishes the National Development Plan (2014-2018)

<sup>48</sup> Administrative and planning regions, programming and management regions, associations of departments, metropolitan areas, associations of special districts, administrative and planning provinces, associations of municipalities defined in Law 1454 of 2011.



2. Grant licenses and permits
3. Integrate at the operational and fare level the different modes and modalities
4. Guarantee the articulation of plans, programs, and projects included in the different cities' Master plans, as well as those included in their planning tools in accordance with the Department of Transports' guideline.

Despite the existing legal framework, this measure was not implemented in 2019 by the Colombian Territories. However, there were experimentations in agglomerations of Cali, Tunja, AMVA, Armenia, Bogota, Barranquilla, Bucamaranga, Apartado and Tolima.

The AMVA is the most successful case of a Metropolitan transport organization, among other metropolitan facts, which is the reason why it is interesting to describe its functioning.

## The Model of the Metropolitan Area of the Valle de Aburra (AMVA)

The AMVA was created in 1980<sup>49</sup> and associates the 10 municipalities of the Valle de Aburra that are Medellin (the central city), Barbosa, Girardota, Copacabana, Bello, Itagui, Sabaneta, Envigado, La Estrella and Caldas, representing 3,726,219 inhabitants in 2018 on an area of 1,165.5 km<sup>2</sup>.

### Competences of the AMVA: a metropolitan association with several purposes

The AMVA, as a territorial associative scheme of multiple competences takes on competences in mobility, environmental management, security, and metropolitan land planning (water, transport, metropolitan facilities, social housing, urban and rural land use). This broad competence sceptor allows to make sure of the coherence between territorial development and the metropolitan transport organization.

It inherited from the Transport Authority competence progressively: first as a Transport Authority for mass public transit at the metropolitan level (only transport between cities), then as Mass Transit and Transportation Authority<sup>50</sup> and finally as a proper Transport Authority since the law of 2013 (taking responsibility for all the components of mobility regulation). Thanks to its subdirection of mobility, it ensures the articulation and coherence of every metropolitan transport sub-systems managed and operated by the different public and private entities. The sub-direction is also in charge of logistical planning, road safety and regional connectivity, in addition to infrastructural programs for non-motorized mobility.

Nowadays, the AMVA organizes on its territory the Integrated Transport System of the Valle de Aburra (SITVA). The SITVA (figure 10) with a total length of 73km, is composed of two metro lines, four cable lines (*MetroCable*), a tramway, a two-lane BRT system complemented by 35 feeder bus lines and integrated routes, a public passenger transport system (buses that cross at least two municipalities but are not integrated either in terms of fares or physically), and finally, a self service bicycle system

<sup>49</sup> County Ordinance 34 of 1980

<sup>50</sup> Resolution 1371 of 2008 from the Department of Transport.



(*EnCicla*). The system has a total of 298 million passengers per year. The access to the whole system except the non-integrated bus lines is through a unique CIVICA card, implemented by the metro starting from 2007. The public company currently works on extending the use of the card to all the public transport lines, taxis and other public services.

In its role of Metropolitan Transport Authority, the AMVA must articulate to cities that still have competences over traffic and municipal-scale bus lines that are not part of the SITVA. Indeed, despite Law 1625 of 2013, the AMVA becomes in theory the only Transport Authority on the territory, but the competences’ transfer by municipalities and necessary administrative modifications are slow and complex processes, that depend on the mayors’ political will. For example, despite being by law a competent transport authority to regulate individual public transport service (taxis), in facts the AMVA does not perform any taxi regulating functions because municipalities resisted to delegate this competence, also because of legal-type difficulties to change taxi licenses from a municipal scale to a metropolitan one. Reduced human<sup>51</sup> and financial capacities of the transport sub-direction reinforces this need for inter-institutional cooperation.

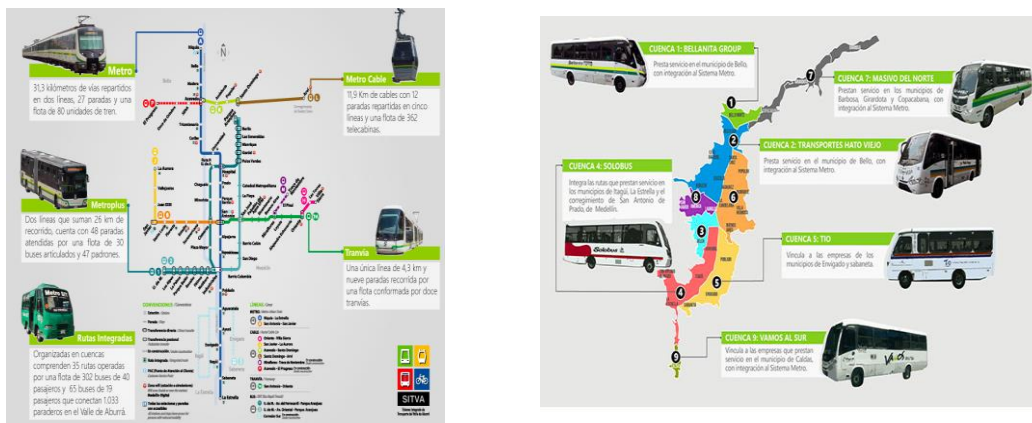


Figure 10: Map of the services and lines. Source: AMVA

## AMVA Governance and resources

The Metropolitan Council (*Junta Metropolitana*) is the entity which defines the AMVA’s policy and program orientations. It is headed by the mayor of Medellín. The Governor of Antioquia or his representative, the Mayors of the other municipalities, a representing councilor of the Council of Medellín and a representing councilor of the other City Councils of the Metropolitan Area are also present. The Council elects the Director of the AMVA, responsible for carrying out the directions taken by the Council.

About mobility governance, the Metropolitan Council for Passenger Public Transport was created in 2008<sup>52</sup>. It is the assessor body of the administrative authorities. It is composed of the AMVA director

<sup>51</sup> With 10 civil servants and a support team, the mobility sub-direction represents less than 4% of the civil servant staff of the AMVA.

<sup>52</sup> Metropolitan Agreement No.4 of 2008



and the mobility secretariats of the ten municipalities from the Valle de Aburra who meet up at least once a month to take part in mobility and planning policies.

The technical team of the AMVA is reduced regarding mobility organization and land planning, with less than 20 persons. Historically, *Metro of Medellin* focused teams and technical capacities of transport organisation but roles are progressively balancing.

The AMVA has two types of financial resources. Its own tax revenues represent the biggest financial source, around 70%, generated in their majority by the status of Environmental Authority by the AMVA (environmental tax) gained in 2004. It also obtains resources from fines, permits, licenses and the collection of fees<sup>53</sup>. The second source resides in the contributions of each municipality<sup>54</sup> with a large predominance of Medellin's, reaching 81% of the total contributions in 2014<sup>55</sup>.

In 2015, AMVA's total budget was estimated to 264,926,400,000 Colombian pesos (US\$ 78 million), with approximately 15% oriented towards mobility<sup>56</sup>.

## AMVA functions: from strategic planning to tactical regulation

The AMVA takes on the role of Mass Transport Authority in 2008, even though the Metro system was created in 1995. Before 2008, the Metro consolidated technical capacities and organization experiences of the metropolitan transport, as well as assuming in certain cases additional functions when there was a legal vacuum on the institutions legally responsible for planning, managing and controlling mass transport.

Nowadays, the AMVA is responsible for land planning and the definition of major strategic orientations for the development and functioning of the SITVA. It defines the metropolitan system of roads and urban public transport in the Metropolitan Strategic Plan for Land Planning. Through the Mobility Master Plan and the Metropolitan Bike Plan, it give the guidelines and defines regional mobility programs.

It also takes on tactical planning and system regulation functions (definition and approbation of lines, frequencies and fares for example), as well as functions of operation control and surveillance. Companies create their service plan which are accepted and supervised by the AMVA. In those tasks, when services are provided on the area of influence of the Metro system, the AMVA and the Metro collaborate to ensure the system's coherence.

The AMVA doesn't take on operation functions in the metropolitan transport system. It coordinates the action of entities responsible for managing and operating sus-systems present on the territory.

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<sup>53</sup> As an "Autoridad Ambiental", environmental authority, the AMVA collects fees from economic agents that discharge pollutants into the water in its territory.

<sup>54</sup> Art.25 of Law 14554 of 2011: « (...) each municipal council, at the initiative of its mayor, shall issue an agreement, indicating the sources of contributions to which the municipality commits for the financing of the functions of the entity, as well as the percentages of such participation"

<sup>55</sup> Activity report of 2014: <https://www.metropol.gov.co/area/Documents/informes-de-gestion/anuales/informe-de-gestion-2014.pdf>

<sup>56</sup> Medellin Como Vamos, Universidad EAFT, (2016) "Informe de la Mesa de Trabajo: Movilidad en la Valle de Aburra".



Indeed in Colombia, the creation of mass transport systems requires the establishment of a managing entity responsible for managing and supervising the operation and/or running of the system, in addition to a Transport Authority responsible for regulating and monitoring the system and controlling the activities of the managing body<sup>57</sup>. The logic behind these two entities answer to a logic of countervailing powers for the system’s good control: an entity cannot be both judge and party.

In the AMVA, the Metro of Medellin is the management body and operator of the Metro, Metrocable and the tramway. It is owned by the municipality of Medellin and by the Governorate of Antioquia, 50% each. It supervises construction, manages and operates systems under its responsibility. By its 20 years long experience in planning, construction, operation and management of mass transport systems in Medellin, it plays a major role in planning the SITVA, in partnership with the AMVA. It is in charge of collecting parts of the system’s money through the CIVICA card and the private operators’ payment.

Metroplus is the second management body present on the territory, which was in charge of the BRT system’s construction. The BRT’s operation is nowadays the responsibility of the Metro, by its long experience as a public operator of the mass transport system on the territory.

The project promoted by the government of Antioquia to build a multipurpose regional train is currently in the hands of the company *Ferrocarril d’Antioquia*, of which the AMVA owns 24% of the capital in a model similar to the implementation of the BRT by MetroPlus.

Finally, the operation of the integrated and complementary feeder bus system organized in basins is the responsibility of private companies.

## Challenges and ongoing processes in transport planning in the AMVA

In the progressive construction of the metropolitan transport system, the AMVA faced several problems. First, the association of municipalities of the Metropolitan area was a difficult process mostly due to the centralism of Medellin and the Envigado’s exit in 1983 which remained outside of the AMVA for more than 20 years, before returning in 2016. The lack of municipal will to centralize the transport competence and to make the AMVA the unique authority in the territory was also a complex challenge. The other difficulty for AMVA since it was instituted as a Transport Authority was to equip itself with internal technical capacities and to win legitimacy to consolidate as a Transport Authority, given that the regulation change that gives it public transport jurisdiction is recent (2013). This challenge was reinforced by the presence of Metro de Medellin, historically strong entity, legitimized on the territory and which concentrated technical capacities for planning and management of metropolitan transport<sup>58</sup>.

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<sup>57</sup> Decree 1008 of 2015, Chapter IV, paragraph 1: “The territorial or administrative entities shall establish the transport authority responsible for the planning and regulation of mass systems and determine the entity responsible for implementing actions for the integration evaluation and monitoring of the operation of mass passenger transport by light rail, tramway and *tren-tranvia* (...).”

<sup>58</sup> Medellin como Vamos, Universidad EAFT, Op. Cit.



Dependency towards political will, technical capacity building<sup>59</sup> and the articulation with Metro, which operated several times in a disarticulated manner, were important challenges for the AMVA. However, nowadays, its role and its collaboration with other entities of the territory, municipalities and technical entities are always stronger and more stable. The SITVA is the most remarkable transport system in Colombia with innovative projects recognized worldwide. They are continuing the integration process of the different basins and other public services, and they are developing programs to establish quality standards for all services of the metropolitan territory (co-creation of maintenance models between AMVA, Metro, and private operators, awareness-raising activities and citizen culture with civil society and private operators, etc.) Moreover, ensuring the coherence between transport competences, land planning and metropolitan infrastructure projects is a big advantage for this institutional organization model.

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<sup>59</sup> World Bank (May 2016), "Elaboración de análisis comparativo de esquemas de autoridades regionales de transporte", *Informe 1 del Acuerdo de Asistencia Técnica para el Diseño de Autoridades Regionales de Transporte para Ciudades Colombianas*.



## Conclusion

In conclusion, models of Recife, Medellin and Santiago show distinct organizations from other Metropolitan Transport Authorities among large Latin-American cities, where passenger transportation is more or less regulated, concentration of powers and functions in a single Authority varies as does the degree of involvement of national, regional and local levels.

Generally, passenger public transportation in Latin America is organized by a political and administrative scale matching the service’s geographical frame: municipal or “urban” scale services are under the jurisdiction of municipalities, whereas inter-municipal services are under the jurisdiction of regional or national levels. It is the case in Peru<sup>60</sup>, Argentina<sup>61</sup>, Mexico<sup>62</sup>, Bolivia<sup>63</sup> and Brazil<sup>64</sup> where cities organize transport in their jurisdiction, regions organize inter-municipal and inter-regional transport and the national level organizes inter-regional and international transport, as in Colombia<sup>65</sup>, Venezuela<sup>66</sup> and Ecuador<sup>67</sup>, where municipalities are transport authorities in their jurisdictions and the State is the authority for all inter-municipal services. Within this panorama, Chile<sup>68</sup> and Panama<sup>69</sup> present exceptional cases, because powers over transport was not decentralized and sector is still integrally organized by the national government.

However in large cities of the continent, particularly capitals, recognizing the metropolitan facts and the need to find special mechanisms to govern and provide common services in a coordinated way, several experiments with metropolitan governments or regional transport authorities have taken place. Our three case studies prove it and allow to draw some conclusions.

Firstly, it is interesting to note that, in the three cases, **an authority responsible for organizing transport on a territory is established**, it corresponds to a set of municipal jurisdictions. Authorities are not created to regulate lines or for transport projects but to organize transport in a functional territory in a holistic view of the transport system<sup>70</sup>. Therefore, the three metropolises succeeded to

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<sup>60</sup> See the *Ley General de Transporte y Tránsito Terrestre* n°27181 and the *Reglamento Nacional de Transporte* n°27871

<sup>61</sup> See Art.75 of the 1853 Constitution and Law n°12.346 creating the National Commission for Transport Coordination (*Comision Nacional de Coordinacion de Transportes*)

<sup>62</sup> See Art.115 of 1917 Constitution as well as applicable standards in every Federated State. Mexico, the Constitution modified in 2016 embeds the metropolitan government level

<sup>63</sup> See General Transport Lay 165 of 2011

<sup>64</sup> See the competences attributed by Brazilian 1988 Constitution in the art. 21, 22 and 30.

<sup>65</sup> See art. 10 of Decree 170 of 2001 regulating the Public Service of Metropolitan, District and Municipal Motor Transport of Passengers

<sup>66</sup> See the competences attributed to the municipalities in article 178 of the 1999 Constitution

<sup>67</sup> See the Organic Law of Land Transport, Transit and Road Safety no.398 of 2008 and the Constitution of 2008

<sup>68</sup> See art. 3 of Law No. 18.695, Constitutive Law of Municipalities.

<sup>69</sup> See the Land Transport and Transit Agency in the *Manual de Organización del Sector Público de la República de Panamá*

<sup>70</sup> Different to cases such as the City-Capital Region Bogota in Colombia, in which there is no supra-municipal coordinating body and where different authorities co-exist on one territory for transport projects: the County Government is the authority for the regional train project *RegioTram* whereas the City of Bogota has authority over the Metro project.



build and unify under one authority, integrated multi-modal systems around structuring railway axes including feeder services to ensure coverage of the system on the whole territory.

**Competences’ spectrum varies** with each organization. In the three cases, these are mass and feeder public transport authorities, which do not have competences over individual public transport and traffic regulation. The AMVA in Colombia is the Authority with the broader field of competence, because it is a metropolitan association with a multi-purpose vocation. It allows to ensure a good transport coordination with mobility in its integral vision, land planning and road management. Santiago’s DTPM and Greater Recife’s CTM are bodies entirely dedicated to mass public transport. Regional authorities are generally linked to municipal authorities that maintain jurisdiction over traffic, taxi services and land-use planning for exemple.

The functions performed by these entities **are concentrated in the transport “tactical” functions**, their main task being the system’s integration, through key-functions such as the definition of a fare policy, planning and regulation of bus lines ensuring the physical and operational integration of the system and fiscal functions. Regarding the strategical planning, only Medellin’s AMVA has the function to write the Metropolitan Mobility Plan. In Brazil, the Integrated Urban Development Plan of the Metropolitan Region of Recife is elaborated by the Secretariat of Urban Development of the State of Pernambuco, although it is drafted in a concerted manner with all the relevant actors including Greater Recife. In Chile, the Department, through its planning direction SECTRA, establishes the Transport Master Plan on all the national territory. Finally, in none of the cases do authorities have operational functions. Different from countries such as France, where it is commun to count on a single operator for the whole mobility system, the cases studied show a fragmentation of stakeholders involved in the management, supervision and direct operation of the systems. The case of Medellin is the most integrated with Metro de Medellin, which is the manager and public operator of most of the SITVA system. However private operators and management bodies take part in the construction and operation of complementary systems and feeder lines of the SITVA. In Chile and Brazil, railway systems management bodies depend on the national level. The role of Greater Recife’s CTM and Santiago’s DTPM is focused on planning, regulating and contracting of the surface transport network services (bus and BRT) and they guarantee its integration with the railway system.

Finally, the **functioning (resources and governance system) of the organizations is quite variable**. Regarding the funding of the authority, being a Department program, the DTPM in Chile is financed by a Department Budget whereas in Recife and Medellin, the Authority receives its resources because it carries transport jurisdiction, as well as transfers from the associated territorial entities. Human resources of the DTPM and Recife count hundreds of people which contrasts to the very reduced AMVA team. This is due to the variation of functions of these entities, the AMVA being limited to regulation and land-use planning functions whereas the DTPM and the CTM are management entities of the transport system. Regarding institutional governance, it is very different in Chile, where the national level is predominant and the municipal level is not represented (it only gives its non-binding opinions on transport projects). In Recife and in the AMVA, municipalities are represented in the decision-making body. In Medellin, municipalities are the strong administrative level with a great predominance of the central city of Medellin, for AMVA’s financing or its representation in the governance system. In Recife, the regional level (State of Pernambuco) is dominant in theory and practice, even though there is a growing desire to encourage municipal participation with the Metropolitan Transport Consortium model. Finally, it should be noted that in the case of Recife, users and private operators are represented and can vote within the authority giving the system’s



orientations of metropolitan transport (CTSM), different from numerous transport authorities in the world which are exclusively institutional.

Recife, Medellin and Santiago are cases where the metropolitan authority allowed the construction of a multi-modal transport system that is integrated and modern, despite the past and present challenges of governance, planning, operation and maintenance. This trend is developing on the continent, with metropolitan planning experiences in the majority of Latin-American Capitals. Indeed, according to a CIPPEC investigation in 2015, half of the continent’s urban agglomerations of more than a million inhabitants have metropolitan coordination types of arrangements. 60% with agreements between territorial entities and 40% creating ad hoc entities<sup>71</sup>. Transport is the third sector to be coordinated by this metropolitan coordination bodies, after land-use planning and water and sanitation. It should be noted that successful cases of metropolitan governance such as the Metropolitan District of Quito<sup>72</sup> created in 1993, works as a single level integrated government, with its own fiscal base and taking on competences of a city/district/county about, amongst other, metropolitan transport. Other cases exist even if they are still in construction such as the Unique Transport Authority for Lima and Callao<sup>73</sup>, created by law in 2018 to coordinate transport between the two cities with a predominant role of the national government and the Metropolitan Transport Agency of Buenos Aires<sup>74</sup> which integrated the State, the Province and the Municipality of Buenos Aires, which, despite the ambition of its conception is currently a consultative body with little power.

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<sup>71</sup> Lanfranchi & Bidart, 2016

<sup>72</sup> <http://www.quito.gob.ec>

<sup>73</sup> <https://busquedas.elperuano.pe/normaslegales/ley-que-crea-la-autoridad-de-transporte-urbano-para-lima-y-c-ley-n-30900-1727064-7/>

<sup>74</sup> <http://www.atm.gob.ar/>



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