

The vital necessity of urban mobility in Brazilian cities

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SUMMARY

This article has the objective of presenting what is urban mobility and to show how public policy is primordial for the population's quality of life and for the planning of Brazilian cities. The right to come and go is a citizen's right that has been harmed for years by an urban policy aimed at improving private motorized transport. In the last seventy years, the policy of mobility in Brazil has been aimed at the motorized transport and its infrastructure. Only in 2012 with Law NO. 12.587 from the Política Nacional de Mobilidade Urbana (National Policy of Urban Mobility) can we see an incentive for non-motorized transport and collective transport. Even with this stimulus, little has been seen in terms of betterment in the eight years the Law has been applied.

KEYWORDS: Collective. Planning. Sustainable.

1 INTRODUCTION

Urban mobility has become a topic that has been debated very much in the last decade of 2010. This fact has happened mainly due to the consequences that came from the long years that the cities needed to worry about mobility while they were lost in the middle of political and socio-economic issues. Urban mobility is an essential right that the citizen has of coming and going and it is harmed once the prioritization of one private and individual transport system is put into practice over the real necessity of those who live there.

Brazil, like other developing countries, suffered from the rapid industrialization and growth of its cities, which caused several problems that affect people's lives. According to the 2010 Census, more than 80% of the population lives in urban centers and suffers from housing problems, lack of urban infrastructure, traffic jams, lack of security, lack of public transportation, among others. Thus, the lack of mobility is one of the difficulties encountered by Brazilians (NETTO; RAMOS, 2017).

At this time of turbulent growth in the country, it is important to note that it was a period in which the automobile industry expanded with several public policies in its favor. The construction and planning of several Brazilian cities favor motorized private transport, which was rooted in these public policies that favored this industry. However, this system currently suffers from not being able to meet the high demand present in cities, thus causing disorder that affects the population's quality of life.

It is important to understand that urban mobility is a key part of the urban planning process in cities and its inefficiency can cause problems that affect other areas of knowledge. In the article, it will be discussed how its deficiency has caused Brazilian cities, at present, to face traffic jams, insecurity, gas pollution, the scarcity of public transport, among other adversities. The policies implemented in the last eighty-six years on urban mobility in Brazil will also be explained. Federal Law No. 12,587, Law of Urban Mobility Policy created in 2012, that requires cities with a population above twenty thousand inhabitants to prepare a Mobility Plan will be prioritized (BRASIL, 2012a).

It is essential to understand that the urban mobility of a city is not the search for investments around modes of transportation, but the understanding of how the city works, how its planning is indispensable and how citizens exercise their right to come and go.

After carrying out this diagnosis of Brazilian cities, the assessment of whether or not current governments are really concerned with creating laws that reinforce the use of non-

motorized transportation, that encourage the use of collective public transportation, and aim at equity regarding mobility in cities.

METHODOLOGY

First, what urban mobility is and its importance for the population's quality of life will be explained. Following that, what has been done in Brazilian cities regarding mobility will be explained, showing the problems and the main policies related to the subject. Subsequently, the *Lei da Política Nacional de Mobilidade Urbana* (PNMU) (National Urban Mobility Policy Law), its mandatory nature and what has been implemented in cities in the last eight years will be analyzed. So, the chronology of this study is from the years 1934 to 2020, investigating what was done in the country of Brazil.

The object of this study is the urban mobility of Brazilian cities. A qualitative and quantitative research was carried out, with an analysis of all the Federal Laws that have already been published regarding urban mobility in the country, as well as a study of the PNMU Law, considering what was carried out within the period of said Law implementation. The consulted agency was the *Ministério de Desenvolvimento Regional* (Ministry of Regional Development).

The research carried out has both a descriptive nature, as it presents a survey on what urban mobility is, as well as an exploratory nature for having conducted research related to the implementation of Urban Mobility Plans. The variables analyzed were: the number of cities that have a Mobility Plan and where the cities that have the Plans are concentrated.

RESULTS

Explaining the concept of urban mobility is the first step towards understanding its indispensability in city planning. Urban mobility is:

[...] an attribute of the territory that concerns easy access to different areas of a city; it must be understood in a broad way, articulated with the very shape of the city, as the result of a set of transportation, circulation, accessibility and transit policies, in addition to other urban policies. (PEREIRA, 2014, p. 74) *translated citation*

Urban mobility promotes not only the right to come and go but also the right to the city. Through urban mobility, people can have access to all their functions. It allows access to health, education, work; it allows people to have access to all other rights.

Thinking about urban mobility is much more complex than just thinking about paved roads or transport. Therefore, planning for mobility encompasses several sectors and also causes impacts, be they positive or negative. This is one of the reasons why mobility is an issue in the 21st century. The urban mobility that has been applied, or the neglect of it, has caused cities, today, to suffer from the consequences.

The aim is to change and improve what has been done, thus seeking positive urban mobility for the city. Several authors state it as the search for the entitled "sustainable urban mobility". This is conceptualized by Carvalho (2016b, p. 16-17):

One can think of sustainable urban mobility within the broader concept of sustainable development, which refers to the promotion of a balance between satisfying human needs and protecting the natural environment. The satisfaction of human needs implies that goods and services must have an offer available and compatible with the demands of the population, and that offer must be stable and regular over time. All of this in such a way that the environmental impact does not compromise the future capacity to satisfy the demands of the next generations.
translated citation

The word “sustainable” within “sustainable urban mobility” must be understood as an intention, bringing the meaning of “mobility that deserves to be sustained” in favor of a common good (BOHUSCH; SCHEIBE, 2014, p. 166).

Sustainable urban mobility prioritizes the well-being of individuals. Therefore, it prioritizes transport that does not pollute the environment, the acknowledgment of pedestrians and cyclists, public spaces, and especially of people. For decades, only motorized transport was valued. The real need of the people ended up being overlooked, not heard. The exaltation of a machine has caused the quality of life to worsen and this decade-long aggrandizement has made cities today in need of help. There was a need to assume all the problems that the cities went through or still go through so that urban mobility is noticed as an essential part of city planning.

Brazil is a developing country that has valued motor vehicle transport for decades. This preference starts from the 1934 Constitution itself, which was committed to the construction of highways in the country (RUBIM; LEITÃO, 2013).

This priority lives on through the 1950s when Juscelino Kubitschek took over as president of the country and established fifty years of progress in five years as the motto of his economic policy. Promising economic growth and industrialization in the country, the then-president uses the introduction of the automobile industry as an engine of this industrialization (NETTO; RAMOS, 2017).

The authors emphasize that, from this period on, public policies were all aimed at encouraging motor vehicles, giving priority to cars and motorcycles. Between the 1960s and the 1990s, there was no incentive and investment in public transport as a State Policy in Brazil. (NETTO; RAMOS, 2017).

It was during these decades that the country experienced strong and rapid growth in urban centers. Brazil went from an agrarian country to an urban country. There was a mismatch between accelerated urban population and territorial growth, and the lack of investments in mass and non-motorized transport infrastructure. According to the 2010 Census, more than eighty percent of the Brazilian population lives in urban centers and the country has thirty-six municipalities that have more than five hundred thousand inhabitants (CARVALHO, 2016a).

The *Constituição Federal* (CF) (Federal Constitution) of 1988 defined that instituting guidelines for urban development, including urban transport, would be the jurisdiction of the Union. Several bills were formulated after the approval of the CF to establish guidelines and rules regarding transport and mobility, but it was in 1995 that laws relating to mobility were enacted. The first was Law No. 8.987, of February 13, 1995, entitled the *Lei das Concessões* (Concessions Law), which provides for the regime of the concession and permission of public services. A Law that has great importance for mobility was the *Lei do Estatuto da Cidade* (City Statute Law), No. 10.257 of July 10, 2001, which established general guidelines for urban policy. As for mobility, it established the mandatory Public Transport Master Plans for Brazilian

municipalities with a population above five hundred thousand inhabitants. In 2001, Law No. 10.233 was created, which created the *Agência Nacional de Transportes Terrestres* (National Land Transport Agency) - ANTT (LIMA NETO; GALINDO, 2013).

On May 28, 2003, the Ministry of Cities was created with Law No. 10.683, which had as one of its jurisdiction the sectorial urban transport policy with the function of promoting programs, subsidy policy, planning, regulation, standardization, and management of the application of urban transport resources (BRASIL, 2003).

When observing the laws from 1934 to 2003, all established guidelines and goals refer only to transport, mobility and non-motorized forms of transport are not mentioned. This proves that the country, for years, encouraged motorized transport as the only form of investment in the municipalities.

The use of the term mobility started in 2005, by Resolution No. 34 of the *Conselho das Cidades* (Council of Cities), which renamed the *Plano Diretor de Transporte Público* (Public Transport Master Plan) to the *Plano Diretor de Transporte e Mobilidade* (Transport and Mobility Master Plan) (PDTM). This also determined its content and provided for the prioritization of the collective over the individual, non-motorized, and pedestrian modes (LIMA NETO; GALINDO, 2013).

In 2007, the Ministry of Cities released a guidance manual for the municipal management agencies on the development of the Transport and Mobility Master Plans, supported by the principles of sustainable urban mobility (LIMA NETO; GALINDO, 2013).

In the period between December 2008 and March 2010, and from May 2012 to December 2013, the Federal Government reduced the rate of the Industrialized Product Tax (IPI) for automobiles, thus providing an incentive to the demand for private motorized transport to stimulate the economy (ALVES; WILBERT, 2014).

In 2010, the *Programa Pró-Transporte* (Pro-Transport Program) was implemented by Normative No. 22 of May 10. The Program was intended to increase urban mobility, accessibility, urban public transport, and the efficiency of service providers, to give greater social reach to the applications of the *Fundo de Garantia de Tempo de Serviço* (Guarantee Fund for Time of Service) - FGTS (BRAZIL, 2010). In 2012, the *Programa Pró-Transporte* (Pro-Transport Program) was regulated by Normative No. 41, of October 24 (BRASIL, 2012b).

As much as the discussion about sustainable urban mobility was already known, government officials continued to invest in vehicle consumption policies. The public authorities corroborated for years with the expansion of the number of roads for motor vehicles and incentives for the acquisition of these, either through consumer policies such as the IPI or with financing and exemptions (CARVALHO; BRITO, 2016).

So many years of investment in private motorized transport have led to the detriment of other forms of transportation. Instead of investments directed to the population's needs (quality public transport, accessible sidewalks, cycle paths), cars were increasingly encouraged. This action, along with the attempt to increase the price of the public transportation fare, culminated in 2013 with the *Movimento Passe Livre*. The population took to the streets showing dissatisfaction with the policies hitherto applied in the country and guaranteeing free public transport for all. This revolt was strong in the main capitals of the country, and the fare increase that had been proposed by the governors in several cities of the country was revoked.

2012 was of significant importance for urban mobility in Brazil, even though the uprising took place a year later. It was then that the *Programa de Aceleração do Crescimento* (Growth Acceleration Program) (PAC) 2 Medium-sized Mobility was launched. The program granted seven billion reais to finance projects to improve traffic in cities populated with 250 to 700 thousand inhabitants. On the one hand, it was a significant policy for urban mobility. On the other hand, it was a program that did not include cycle-paths financing, which can be considered a setback in the search for sustainable urban mobility (BOHUSCH; SCHEIBE, 2014). As for the PAC, in 2011 PAC 2 Large Cities Mobility had already been created by Ordinance 65, which provided financing for municipalities with more than 700 thousand inhabitants (LIMA NETO; GALINDO, 2013).

In 2012, the highlight was the creation of the PNMU Law, Federal Law No. 12.587. This law established the guidelines that regulate and plan urban mobility in Brazilian municipalities, and the incentive to travel through non-motorized and public transport. It establishes mandatory Mobility Plans in municipalities with a population of over twenty thousand inhabitants (BRASIL, 2012a).

There are indeed similar points in the preparation of the Mobility Plans with the old PDTM, but the Urban Mobility Master Plan (PDMU) was considered an advance because it has greater coverage, delimits obligatoriness in a greater number of municipalities, and establishes a clear determination of its guidelines.

Another important investment by the Federal Government was in major events hosted in the country, those being the World Cup in 2014 and the Olympics in 2016. Through PAC 2 modalities, millions of reais had been invested in productions for cities that hosted these events, and part of these investments was destined for urban mobility. It is regrettable to understand that hosting major events was necessary for the Federal Government to provide funding for urban mobility in cities (GALINDO; LIMA NETO, 2019).

With the passing of these major events in the country, the Pro-Transport Program was reformulated on May 17, 2017, by Resolution No. 848. The Normative No. 27 of July 11, 2017, makes the regulation. With its reformulation, it aims to promote the implementation and requalification of systems and improvements in people's urban mobility. It is divided between two groups, with Group 1 consisting of municipalities with 250 thousand inhabitants or less, and Group 2 consisting of municipalities with a population greater than 250 thousand inhabitants. Pró-Transporte finances proposals within these six modalities: collective public transport systems; road qualification; non-motorized transport; studies and projects; Urban Mobility Plans; and institutional development. The resources of this Program come from the Current Operational Budget and the current FGTS Multiyear Budget (BRASIL, 2017b).

In 2018, the Bicycle Brazil Program (PBB) was implemented by Law No. 13.724 of October 4, 2018. The PBB aims to encourage bicycles as a means of transportation and instituted its implementation in all cities with more than twenty thousand inhabitants. Its guidelines are: the creation of a culture favorable to cycling trips as an efficient and healthy way of traveling; the reduction of pollutant emission rates; improving the quality of life in urban centers and the health conditions of the population; the development of actions aimed at improving the cycle mobility system; the inclusion of this in the spatial and territorial planning actions and the

society's awareness of the undesirable effects of car usage in urban locomotions, to the detriment of public transport and non-motorized alternatives (BRASIL, 2018).

Despite the relevant advances in policies regarding urban mobility, it is still necessary to understand that they need to get off the ground. Cities and Brazilian culture itself still cherish cars. The government continues to carry out projects and incentives to motorized transport even with the presence of the PNMU. Several municipalities have not yet complied with their mandatory Plans, as explained later. There is still a long process for the implementation of sustainable urban mobility in Brazilian cities. Since, unfortunately,

City halls, guided by developmental ideals, often see the expansion of roads and parking lots as a way of solving existing mobility crises. This type of urban policy is legitimized by the population. The vast majority of people, seduced by the dream of owning a car - stimulated by financing/indebtedness – ever so closer to the budget, are not reluctant to accept that the growth in the number of avenues, in addition to 'modernizing' the urban environment, is also capable of decongesting cities. Thus, a favorable scenario for using individual cars is established, but harmful to the ideal of sustainable urban mobility. (CARVALHO; BRITO, 2016, p. 121). *translated citation*

It can be emphasized that the creation of the PNMU was a milestone for urban mobility in Brazil. All this relevance is given because it was the first policy in the country to encourage cities to implement measures that are consistent with the development of sustainable urban mobility.

Federal Law No. 12.587, of January 3, 2012, is an instrument of the development policy that aims to integrate the different modes of transportation and improve the accessibility and mobility of cargo and people in Brazilian municipalities. It has in its composition an incentive to non-motorized modes of transportation and collective transport (BRASIL, 2012a).

The PNMU's principles are: universal accessibility; equity in citizens' access to public transport; sustainable development of cities, in socioeconomic and environmental dimensions; efficiency, effectiveness and social control of the planning and evaluation of urban transport services; democratic management and social control of PNMU planning and evaluation; security in the displacement of people; fair distribution of benefits and burdens arising from the use of different modes and services; equity in the use of public spaces for circulation, roads and public areas; efficiency, efficacy and effectiveness in urban circulation (BRASIL, 2012a).

One of the differentials of this policy, in addition to its content, was also its mandatory nature. The PNMU establishes that certain cities formulate a Mobility Plan compatible with their respective master plans, which must be reviewed and updated within a period not exceeding ten years. These cities include those with more than 20 thousand inhabitants; cities that are part of the Metropolitan Region (RM), integrated regions of economic development and urban agglomerations with more than one million inhabitants; cities that are part of areas of tourist interest, including coastal cities with altered mobility on weekends, holidays and vacation periods (BRASIL, 2012a).

To collaborate in the formulation of the Mobility Plan, the *Secretaria Nacional de Mobilidade e Serviços Urbanos* (National Secretariat for Mobility and Urban Services) offers financial assistance with FGTS funds for municipalities within the Avançar Cidades - Urban Mobility Program (BRASIL, 2017a).

In 2015, the PlanMob Guide was published by the Ministry of Cities as a way of advising city managers. The Guide contains basic concepts for the formulation of the Mobility Plan and also guidelines for data collection to identify factors that influence mobility in the cities. (BRASIL, 2015b).

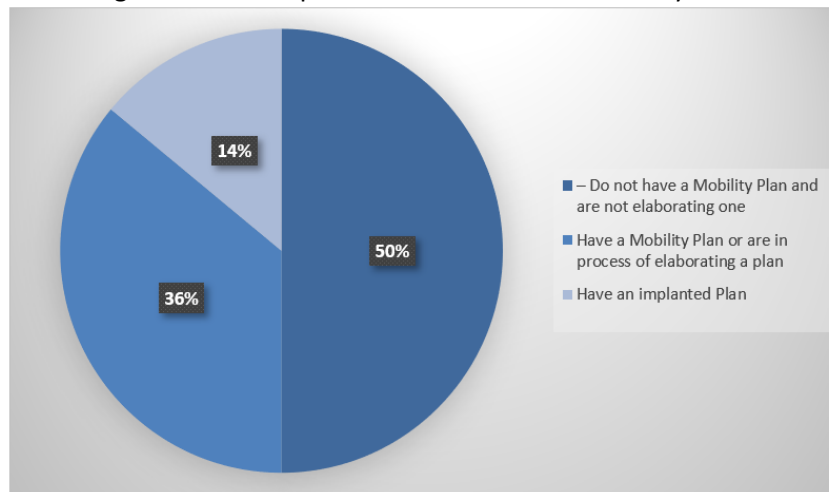
What can be concluded is that the secretariats and managers of the Federal Government have taken an important step towards the development of sustainable urban mobility in the country. A wide source of information and financial resources was made available for the municipalities to develop the Mobility Plan. Despite the positive effort that the Federal Government has had, some cities have not yet formulated their Plans according to the *Secretaria de Desenvolvimento Regional* (Regional Development Secretariat). The Plans are mandatory and should have been produced in the last eight years since the creation of the PNMU. What happened was that there was an extension through laws during those years, the last extension being Law No. 14.000. This 2020 law again extended the period in which city mobility plans must be drawn up and approved. According to the law, the municipalities with more than 250 thousand inhabitants have until April 12, 2022, and the municipalities with up to 250 thousand inhabitants have until the date of April 12, 2023, to comply with the requirement of the PNMU (BRASIL, 2020a).

These ten years of extension that the Federal Government opened for the municipalities allow the managers to be uninterested in elaborating the Mobility Plans. Once again, making the population suffer. The *Secretaria Nacional de Mobilidade e Serviços Urbanos* (National Secretariat for Mobility and Urban Services) (SEMOB) surveyed 3,476 municipalities plus the Federal District (DF) to obtain information on the Urban Mobility Plans. According to IBGE data, in 2019, Brazil has 5,569 municipalities plus the DF, of which 3,476 falls within the mandatory PNMU (BRASIL, 2020b).

The SEMOB survey obtained information from only 2,315 municipalities, which is equivalent to 67%. Of these municipalities, only 324 reported that they have the Urban Mobility Plan in place, that is, 14%. It is not a significant number, since these 324 cities correspond to 37% of the Brazilian population. Therefore, only a little over a third of Brazil's population is entitled to a Plan that favors the movement of individuals around the city (BRASIL, 2020b).

Another relevant information is that of these three hundred and twenty-four cities, 255 of them are in the South and Southeast of Brazil, corresponding to 79% of the municipalities that declared to have an Urban Mobility Plan. The survey also exposed that 840 municipalities announced that they have a Plan or are under preparation, representing 36% of the survey respondents, as can be seen in Figure 1 (BRASIL, 2020b).

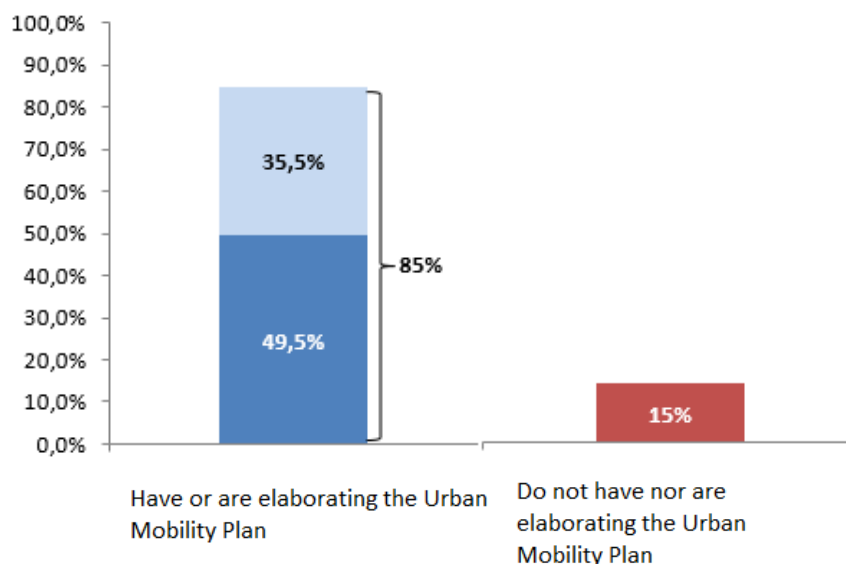
Figure 1 – Municipalities and their Urban Mobility Plans



Source: adapted from Brazil (2020b).

It is also clear from the SEMOB research that the appreciation of policies related to urban mobility occurs in the cities that have the largest number of inhabitants. It is probably due to the greater demand for transportation modes and mobility problems in daily commuting. Considering only the municipalities with more than 250 thousand inhabitants in the survey, those that declared they already have the Mobility Plan in place or are in the process of elaboration makeup 86% (Figure 2). Showing that in these municipalities there is a greater concern with mobility (BRASIL, 2020b).

Figure 2 – Percentage of municipalities that have or are elaborating the Urban Mobility Plan (over 250 thousand inhabitants)



Source: Brazil (2020b).

In 2018, a National Urban Mobility Survey was carried out by the Ministério de Desenvolvimento (Regional Ministry of Regional Development) to follow the advances obtained

after the PNMU was implemented in 2012. According to the survey, concerning urban infrastructure for pedestrians, relatively low numbers were presented to what should have been achieved, since the PNMU has a guideline to incentive non-motorized modes of transport. Only eighteen municipalities claim to have dedicated pedestrian roads, averaging 3.2 kilometers. The average is better for the infrastructure of bike lanes and cycle lanes, consisting of 38.6 kilometers (BRASIL, 2019).

Table 1 – Municipalities and their Urban Mobility Plans

Urban Infrastructure (2021-2018)	Average of what was built (in KM)
Pedestrian (temporary)	5.4
Pedestrian (permanent)	3.2
Cycle tracks	35.5
Cycle lanes	38.6
Bus lanes	27.7
Bus tracks	17.1
BRT's	23.4

Source: Brazil (2019)

CONCLUSION

Urban mobility is essential in the planning of Brazilian cities and for the well-being of the population. This is how the right to come and go is exercised and also the access to the other rights that the population has. However, the population ends up not enjoying their rights due to insufficient and unskillful policies that have been applied for years in the country.

It was observed that, for years, the name “mobility” had never even been used in the laws and regulations present in Brazil. The understanding was perpetual that transportation was crucial and that policies aimed at it were needed. And with all the investment and reduction policies, the appreciation would be only for individual motorized transport. So, for a long time the car was praised.

It is important to note that during all these years, people's needs have gone almost unobserved. Research has shown that the majority of the population does not travel in cars, but on foot or by public transport. What, then, would be the real reason behind investments in policies aimed at transport that are not adhered to by the entire population? What reason is there for the non-existence of policies aimed at this population that travels on foot or by public transport?

The milestone in Brazilian mobility policy was the creation of Law No. 12.587, of the Política Nacional de Mobilidade Urbana (National Urban Mobility Policy). The Law determined that several municipalities elaborate the Mobility Plan. However, many of the Brazilian municipalities do not have and are not in the process of developing the Urban Mobility Plan foreseen by the PNMU. As a result, they no longer receive funds from the Federal Government to improve urban mobility. With the research previously presented, it was seen that the number of these municipalities is high, and those that end up paying the price for the lack of these Plans are the people who live in the municipalities. The population suffers because

they are the ones who face various adversities in their daily commute that could be solved with policies that value the real need for mobility.

The PNMU presents guidelines and objectives that seek, in fact, to improve the quality of life of the population. But it is seen that this intention ended up remaining in written Law, not being part of the planning of the municipalities. Eight years have passed since its publication, and there is no concern about the applicability of the Law. The questions that can be asked are: to what extent is there an initiative by municipal managers to prepare the Mobility Plan? How long does it take for cities to be able to take advantage of this Plan?

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