

# **Non-Motorized Transport Policy for Aguascalientes City, Mexico**

Mexico, 2019







# **Contents**

Introduction	3
Preliminary Information	4
Action Plan 2018-2019	4
Foreword and NMT Vision from the State Government of Aguascalientes	5
Methodology	6
National Context	7
Aguascalientes Context	8
Economy	9
Population	10
Urban Growth	11
Mobility	12
State Mobility Plan	14
Road Infrastructure Network	15
Public Transport Routes	16
Road Accident Rate	17
Non-Motorized Transport in Aguascalientes	25
NMT Road Accident RateError! Bookmark not	defined
Bicycle Infrastructure Network	25
Cultural and Educational Programs	26
Non-Motorized Transport Projects and Public Policies in the Metropolitan Aguascalientes	
Events and Workshops	29
Strategies	32
Conclusions and Next Steps	42







### Introduction

In recent years in Mexico, the interest and importance in establishing sustainable urban mobility solutions has grown for the improvement of existing problems such as poor air quality and congestion, and to mitigate the effects of climate change. Many cities have begun promoting and investing in Non-Motorized Transportation (NMT) as a multi-faceted sustainable solution. Fostering NMT investments and policies are integral as they present numerous benefits for the environment, air quality, road safety and access to basic services.

In Aguascalientes state, the government has been working on various Non-Motorized Transport projects, with the aim of establishing an NMT infrastructure network as well as improving the connectivity and accessibility with other public transport modes through NMT to promote intermodality. Additionally, they have recognized the importance that design plays when establishing new mobility interventions, to provide safe roads for all users.

The collaborative efforts of UN Environment, Share the Road initiative and World Resources Institute Mexico supported the development of this public policy that will that will help the city to make decisions about Non-Motorized Transport.

As a first step, an assessment on the current situation of urban mobility in general was made, followed by the specific situation regarding Non-Motorized Transportation in Aguascalientes. Additionally, a workshop was held on the subject in the city, attended by an array of stakeholders coming from government institutions to civil society. During the two day workshop, the participants performed a series of activities to be able to identify the necessary projects or actions to generate a city vision with the respective actions to develop the NMT Plan for Aguascalientes City.







# **Preliminary Information**

In order to structure and develop the NMT Plan for Aguascalientes City in Mexico, supporting information around existing public policies was researched, such as: urban mobility plan, land use plan, green plan, mobility law, traffic light and sign regulations, road safety plans and regulations among other documents and information to provide an up-to-date assessment and follow-up on the strategic vision, planning and actual status of the city projects and public policies.

### **Action Plan 2018-2019**

Based on the WRI team's international experience, as well as information collected in the Workshop: "Non-Motorized Transport Policy for Aguascalientes City", the following structure was proposed for preparing the Action Plan.

- 1. Assessment and diagnosis
- 2. Events and workshops
- 3. Information analysis
- 4. Strategies
- 5. Conclusions

In this document, each of these points will be elaborated on, with the objective of providing more detailed information on the metropolitan area of Aguascalientes City, establishing clear and concise strategies to reach an "Action Plan for Aguascalientes City".







# Foreword and NMT Vision from the State Government of Aguascalientes

The state government of Aguascalientes formed a collaborative relationship with the World Resources Institute (WRI) and the United Nations Environment Program to develop a Non-Motorized Transport public policy through local capacity building and developing instruments for policy and planning.

Since the addition of Mexico to the New Urban Agenda and the publication of the New General Law on Human Settlements, Land-Use Planning and Urban Development, the Government of Aguascalientes has been working on:

- Infrastructure Network for Non-Motorized Transport. The gradual implementation of 208 km of bicycle lanes in the metropolitan area of Aguascalientes City has been projected to be completed by May 2022.
- Intermodality with the SITMA. The Integrated Multimodal Transportation System of Aguascalientes (SITMA) project includes infrastructure dedicated to Non-Motorized Transport such as cycle paths, horizontal and vertical signs, bicycle parking, safe crosswalks, and universal accessibility at stops, stations and terminals.
- Accessible corners. The intersection intervention project for municipality centres and the metropolitan area improves safety and accessibility conditions.
- Street Design Manual (Manual de Diseño de la Vía Pública in Spanish). The Aguascalientes
  government will publish a manual to be used by all municipalities in the state, based on the
  Street Design Manual (Manual de Diseño de Calles in Spanish) for Mexican cities created by
  SEDATU, uniting design criteria and road construction and taking into consideration the real
  needs of users in pedestrian, cyclist and accessibility spaces.
- Mobility Law for Aguascalientes state. The creation of a Bill that guarantees the human right to mobility and establishes the state's Mobility Hierarchy to benefit the most vulnerable road users, which is an unprecedented legal instrument of the state.

Therefore, the state government of Aguascalientes received support to develop a public policy for Non-Motorized Transport that encourages cities in Aguascalientes to improve public space conditions for vulnerable road users and guaranteeing the right to mobility for all.

The collaboration with WRI Mexico further supported these works by enhancing the technical capabilities as well as incorporating civil society in this process. We also express our commitment to collaborate and promote these types of initiatives.

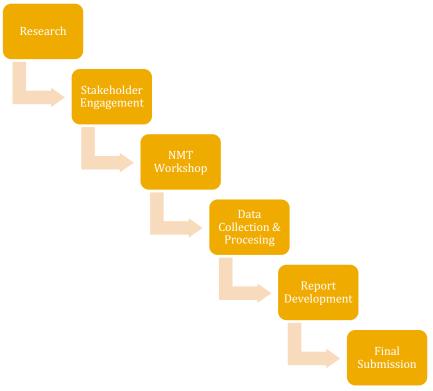






# Methodology

The methodology used during the development of this document is presented below:



- 1. **Research**. General research on Aguascalientes state and city was made, with a focus on public policies, particularly on urban mobility and NMT for the metropolitan area following the topic of mobility, to be able to arrive at the topic of NMT in the metropolitan area.
- 2. **Stakeholder Engagement**. Based on the research, and with the help of the General Mobility Coordination (CMOV from the initials in Spanish) Aguascalientes state, the stakeholders were identified, mapped and contacted for the engagement process.
- 3. **NMT Workshop.** Based on the preliminary research results and the stakeholder engagement process, a two-day workshop was held in July 2018 in order to develop a public policy on NMT for Aguascalientes City. This workshop aimed to develop specific NMT actions for implementation in the short and mid-term to improve the conditions for walking and cycling in Aguascalientes City and the metropolitan area.
- **4. Data Collection & Processing.** The information obtained during the workshop was compiled and processed in order to identify and organize specific data and the identified solutions presented by participants to generate an action plan.
- 5. **Report Development.** A final report was developed, containing the general diagnosis and current state of urban mobility and NMT in Aguascalientes City, followed by the related current public policies and plans, as well as the next steps to follow to develop and implement the actions of the NMT plan.
- **6. Final Submission.** The development process of the report will be reviewed with the stakeholders in the city for their final approval.







### **National Context**

The inclusion of NMT in public policies and programs is relatively new in Mexico and was greatly neglected previously due to the high rate of private motor vehicle use in cities. As a result, the majority of funding allocated to urban mobility projects has been used for improvements to road infrastructure. Most cities lack the necessary infrastructure to allow for safe pedestrian and cyclist trips, either due to poor conditions, poor road design, lack of signage or the inexistence of space allocated to pedestrians and cyclist. In addition, if the infrastructure exists, the space is commonly misused or obstructed, complicating possible trips and forcing users to occupy other road space.







Figure 1 Poor NMT conditions in Mexican cities, (source: WRI Mexico)

On the other hand, as NMT is gaining importance around the country after being included in the National Development Plan 2013-2018, many cities have begun promoting these modes through the construction of routes and infrastructure networks, the establishment of bike sharing systems, educational and cultural programs for citizen socialization, among others.









Figure 2 Bicycle lane example in Mexico City, (source: WRI Mexico)

# **Aguascalientes Context**

In Mexico, Aguascalientes state is located in the centre of the country, bordered on the north, northeast and west by Zacatecas state; to the south-east and south by Jalisco state. The area of Aguascalientes state is 5,680.330 km2, which represents 0.3% of Mexico's area.









Figure 3 Location of Aguascalientes state with respect to the Mexican Republic, (source: Elaborated by WRI based on Carto)

#### **Economy**

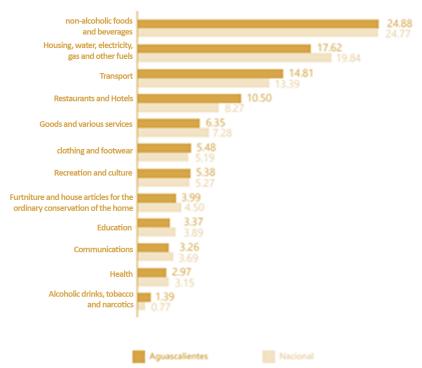
Aguascalientes City and its metropolitan area is one of the fastest growing economies in Mexico. The Gross Domestic Product (GDP), represents 1.2% of the national GDP (2015), of every 100 pesos contributed to the economy of Aguascalientes 49.65 are for tertiary activities, 46.66 for secondary and 3.69 for primary. The most important branch of activity is the manufacturing of automobiles representing 29.7% of the total production value. Of every 100 economically active people, 97 are employed.







### Average family expenditure per 100 pesos



Graph 1 Average family expenditure per 100 pesos Source: INEGI

#### **Population**

Aguascalientes state has undergone exponential transformations over the last century. The population in 1910 was 120,511 and since has increased 10.89 times, with the resulting population being 1,312,544¹. In the state, 81% of the population is urban and 19% is rural, with 66.83% of the population located in the state capital. The metropolitan area of Aguascalientes consists of three municipalities: Aguascalientes, Jesús María and San Francisco de los Romo. The annual population growth of the metropolitan area is 4.07% on average. The table below shows the population growth in Aguascalientes City by decade from 1850 to 2015.

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<sup>&</sup>lt;sup>1</sup> Instituto Nacional de Estadística y Geografía (INEGI), 2016.







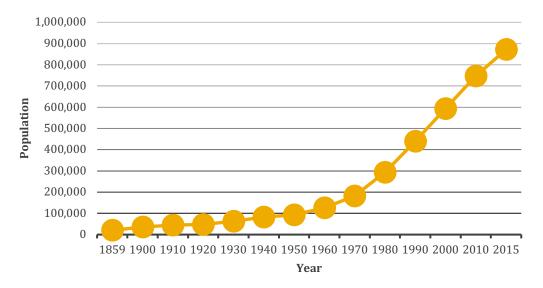


Table 1 Population growth from 1859 to 2010 by decade. (source: Instituto Nacional de Nacional de Estadística y Geografía).

#### **Urban Growth**

In the period from 1990 to 1995 a significant percentage of the urban sprawl grew, especially in the east of the city, where the land is composed of hills with slopes greater than 12%, which represent a greater cost to urbanize, combined with the type of social housing constructed. It has been observed that in different periods and diverse circumstances, the urban area grew concentrically; meaning, originating from the historical centre and expanding outwards in all direction towards the periphery. However, the urban growth did not reach the eastern and northern areas until the middle of the 20<sup>th</sup> century. The southern area of the city was last to experience urban growth. The following map illustrates the urban growth in Aguascalientes City from 1900-2010.







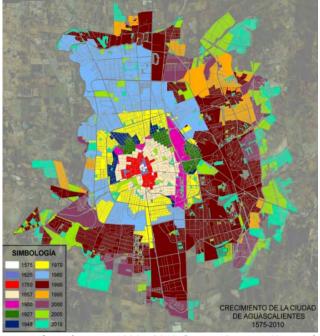


Figure 4 Growth of the urban area from the years 1900 – 2010, (source: Instituto Nacional de Estadística y Geografía)



Figure 5 Urbanization in the eastern area of Aguascalientes, (Source: El heraldo de Aguascalientes, 2018)

### Mobility

The inefficient urban management caused a breakdown of the urban layout in this area, resulting in a chaos that greatly hinders the implementation of urban projects such as corridors and / or sustainable urban mobility axes. As a consequence of rapid population and urban growth, the ability to obtain a car, as well as the deficient public transport service, has generated problems such as road congestion and pollution. In addition to this, there is a lack of infrastructure and conditions for







the displacement of vulnerable groups, it is important to have policies and projects that promote Non-Motorized Transport in a comfortable and safe way for all road users.

Based on the population count from 2015, the total number of automobiles in Aguascalientes was 543,800, resulting in a motorization rate of 416.8 (vehicles / thousand people).

The metropolitan area of Aguascalientes has a total of 1,220,000 trips / day registered, which are equivalent to 1.3 trips per person.<sup>2</sup>

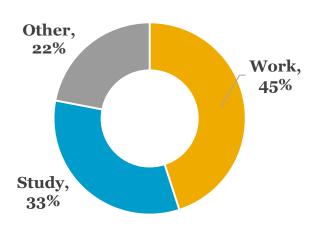


# 1,220,000 trips/day 1.3 trips/person



The main trip purpose in the metropolitan area is going from home to work representing 45% of the total trips, followed by home-study trips at 33% and finally, the remaining 22% represents the other trip purpose destinations.





Graph 2Main trip purposes PIMUS 2013, (Source: PIMUS 2013, AM AGS)

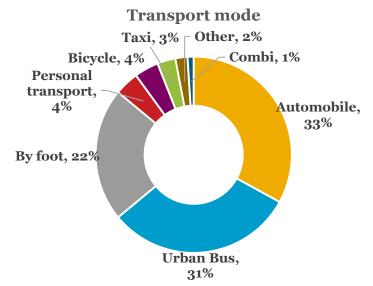
Regarding the multimodal share of the metropolitan area of Aguascalientes, car use predominates at 33%, followed by the urban bus with 31%, followed by trips on foot with 22%, then tied at 4% are bicycles and personal transport, and lastly combis (paratransit) representing 1% of the total modality.

<sup>&</sup>lt;sup>2</sup> Datos 2013, Study carried out by IDOM, to be integrated in the Comprehensive Sustainable Urban Mobility Program of the metropolitan area of Aguascalientes.









Graph 3 Main transport modes in Aguascalientes, Source: PIMUS 2013, AM AGS

The average distance from the city centre to the city limits changed from 1.5 km in 1950 to 2.5 km in 1970, 4.5 km in 1990 and 7.5 km in 2010.

#### **State Mobility Plan**

The State Mobility Plan emerges as an instrument for Urban Mobility to plan and implement comprehensive solutions that address and reduce negative externalities at the state level regarding: urban mobility conditions, road safety, air quality, accessibility and equity for the citizens.

The project done with UNEP, took various actions to support the development of the State Mobility Program, which promotes the access to knowledge and training of municipal, state and academy authorities to benefit the Aguascalientes population.

The Law of Mobility for Aguascalientes state takes into account the development of a State Mobility Program whose objective is to shape the Aguascalientes Mobility Strategy, which is divided into axes, one of which is focused on NMT and vulnerable groups in the state.









Graph 4Aguascalientes Mobility Strategy, source: Secretariat of Mobility of Aguascalientes, 2018

Once the State Mobility Program has been completed, it will be subject to review and subsequent approval by the State Mobility System. This system is integrated by the organic and articulated set of its members, procedures, instruments and policies, and aims, among others, to act as the body that promotes planning, coordination, linkage and agreement among programs, actions and investments of the federal, state and municipal governments, through the instruments that define the public policies regarding mobility, whether they are derived from this law or from the specific regulations regarding planning. Once approved, the document will be published in the Official State Newspaper and will request to be registered by SEGUOT in the State Urban Development Planning System of Aguascalientes.

#### **Road Infrastructure Network**

One of the characteristics of the road network infrastructure in Aguascalientes City are the concentric ring roads; since they are important for daily use and the impact that they have either due to the urban expansion or the limitation in terms of mobility, as it can be a great barrier mainly for the people that move by foot or by bicycle, as the necessary road safety is not provided.









Figure 6Road network of Aguascalientes City (source: Carto)

#### **Public Transport Routes**

In the Aguascalientes and Jesús María municipalities, there are 44 public transport routes, with an average frequency of 11 minutes and an average journey time of 2 hours and 9 minutes. For more information, consult the page of the General Coordination of Mobility of Aguascalientes state <sup>3</sup>.

 $<sup>3 \ \</sup>underline{\text{http://www.aguascalientes.gob.mx/CMOV/transporte/DGTPrutasdetransporte.aspx}}$ 







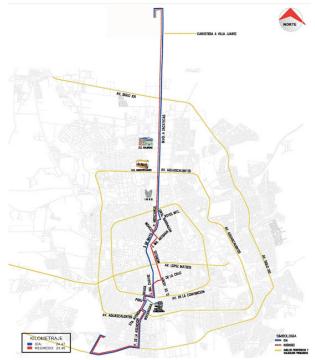
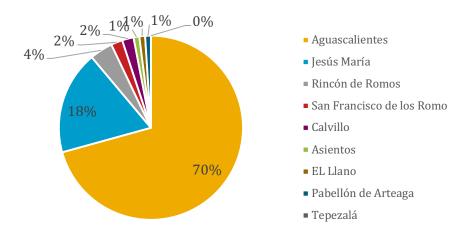


Figure 7 Transport route of Route 1 Aguascalientes (source: http://rutasaguascalientes.blogspot.com)

#### **Road Accident Rate**

Based on the report regarding the situation of road safety in Mexico 2017, Aguascalientes state had 4,116 road accidents, with 229 resulting in deaths, of which 115 were pedestrians and 10 were cyclists. From the total accidents, those in Aguascalientes involved 80 pedestrians and 8 cyclists, and those in Jesús María involved 8 pedestrians and 1 cyclist. Of the total accidents, 88% were concentrated in these two municipalities.



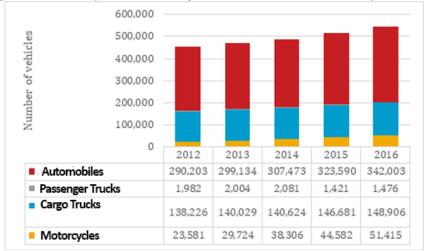
Graph 5 Distribution of accidents by municipality, 2016, (source: Report about the situation on road safety, Mexico 2017)





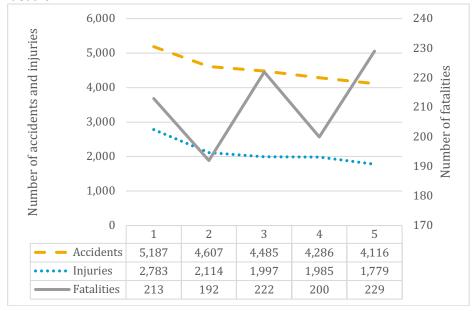


In 2016, the number of vehicles increased by 1.7% and 1.3% compared with 2012 and 2015. The number of registered motorcycles showed a greater increase, at 15.3% compared with 2015.



Graph 6 Distribution of the number of vehicles according to type, 2012 to 2016. (source: Report about the situation of road safety, Mexico 2017)

In relation with 2012, there was a decrease in accidents by 20.6%, a decrease in injuries by 36.1% and an increase in deaths by 7.5%. In comparison with 2015 there was an increase of 14.5% in the number of deaths.



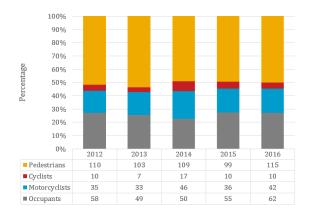
*Graph 7 Number of accidents, injuries and deaths, 2012 to 2016. (source*: Report about the situation of road safety, Mexico 2017)

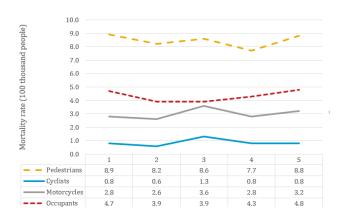
In 2016, the amount of deaths increased by 14.5% in comparison with 2015. Of the total deaths, 50.2% correspond to pedestrians. Regarding 2012, motorcycle deaths increased significantly by 20%.



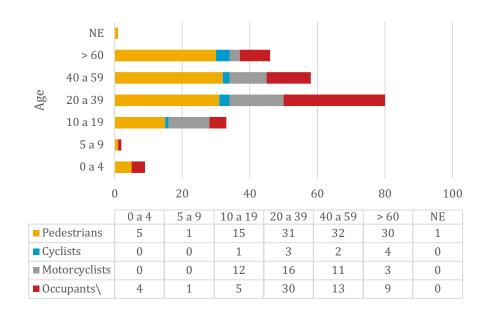








*Graph 8 Distribution of deaths by user type, 2012 to 2016. Graph 9 Evolution of the mortality rate by type of user, 2012 to 2016. (source:* Report about the situation of road safety, Mexico 2017.)



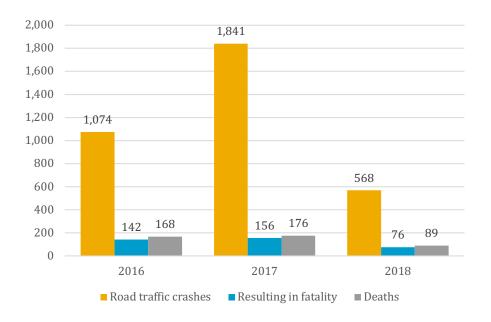
*Graph 10* Distribution of deaths by user type and age group, 2016, (source: Report about the situation of road safety, Mexico 2017)

The following information comes from different sources such as: local written press (Tribuna Libre, Semanario Policiaco, Heraldo Digital), reports from the State System of Medical Emergencies (SEEM for its initials in Spanish), Municipal Fire Department Civil Protection and Municipal Pre-Hospital Care, Federal Police, Relevant reports from the C-4 Telecommunications Centre and Traffic and Mobility reports from the Municipality of Aguascalientes; These encompass pedestrian and cyclist accidents.

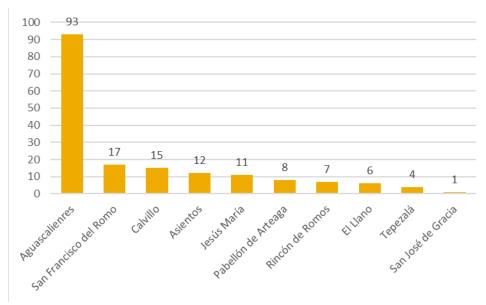








*Graph 11Road traffic crashes in Aguascalientes 2016 – 2017 and the first semester of 2018 (source*: Observatorio Estatal de Lesiones, ISSEA, 2016, 2017 and first semester of 2018)



*Graph 12Road traffic crashes with fatal results according to the municipality, during the year 2017.* (source: Observatorio Estatal de Lesiones, ISSEA, 2017)

Municipality	Total population	General Total	Fatality Rate
Aguascalientes	877190	93	1.060
Asientos	46464	12	2.583
Calvillo	56048	15	2.686







El Llano	20245	6	2.964
Jesús María	120405	11	0.914
Pabellón de Artega	46473	8	1.721
San Francisco de los Romo	46454	17	3.66
San José de Gracia	8896	1	1.124
Tepezalá	20926	4	1.911
Rincón de Romos	53866	8	1.485
Casío	15577	1	0.642

Table 2Road traffic crashes resulting in fatality according to the Municipality, from January to December 2017, Aguascalientes. Rate 10,00000 citizens (source: Observatorio Estatal de Lesiones, ISSEA, January-December 2017)

The types of road traffic crashes that most resulted in fatalities from January to December in 2017 were from collisions (77) followed by accidents (49) and turning off the road – overturn (13).



Graph 13 Road traffic crashes resulting in fatalities in Aguascalientes state according to the accident type, during 2017, (source: Observatorio Estatal de Lesiones, ISSEA, January-December 2017)

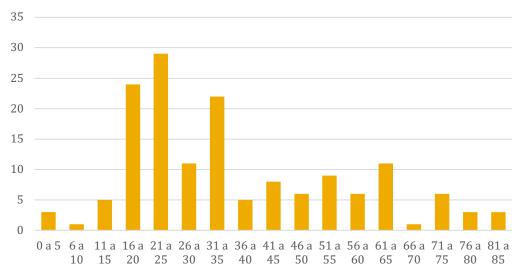
During the period from January 1<sup>st</sup> to December 31<sup>st</sup> of 2017, there were 176 deaths reported from the 156 motor vehicle accidents in Aguascalientes state, of which 80% involved males.

The age range where most incidents are observed in road traffic crashes with fatal results in Aguascalientes state is between 21 and 25 years with 29 registered events during the period from January to December 2017; followed by the group including the age range from 16 to 20 years (23).



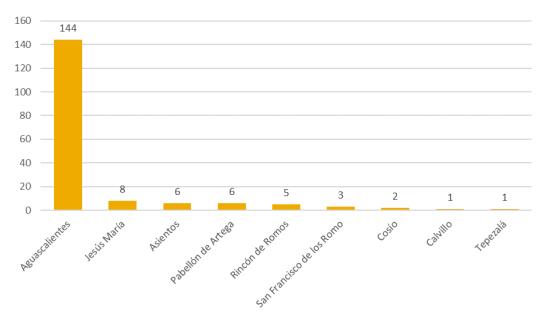






*Graph 14 Distribution of road traffic crashes resulting in fatalities in Aguascalientes state according to age ranges, during the year 2017. (source: Observatorio Estatal de Lesiones, ISSEA, January-December 2017)* 

During 2017, there were 1,845 road traffic crashes registered in Aguascalientes state, of which 176 involved pedestrians. Of the total road traffic crashes involving pedestrians, 50 resulted in death, with males representing 74% and females representing 26%.



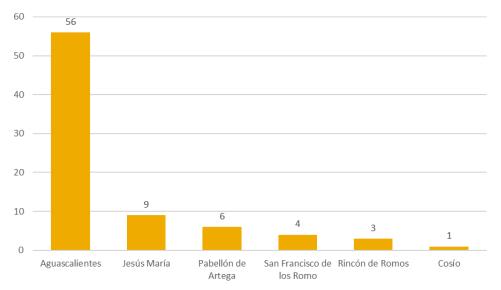
Graph 15 Road traffic crashes in which pedestrians were involved, according to the municipality, during the year 2017 (source: Observatorio Estatal de Lesiones, ISSEA, January-December)

Of the 1,845 road traffic crashes, 79 were cyclists in Aguascalientes state, of which 11 were fatalities with 82% involving males and 18% involving females.



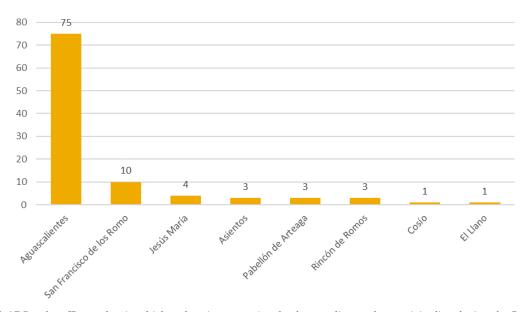






*Graph 16 Road traffic crashes in which cyclists were involved, according to the municipality, during the year 2017 (source*: Observatorio Estatal de Lesiones, ISSEA, from January-June 2018)

During the first semester of 2018 (January – June), 568 road traffic crashes were registered, of which 100 involved pedestrians, with the highest frequency taking places in Aguascalientes municipality. Of those, 27 were deaths, of which 67% were men.



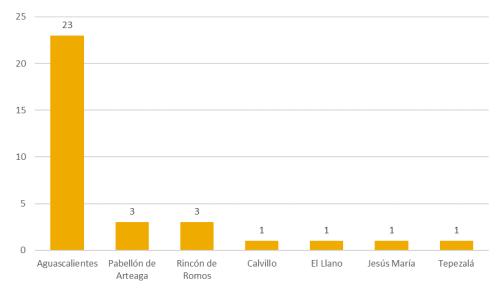
*Graph 17 Road traffic crashes in which pedestrians were involved, according to the municipality, during the first semester of 2018 (source: Observatorio Estatal de Lesiones, ISSEA, January-June 2018)* 

Of those 568 road traffic crashes, 33 involved cyclists, where 7 registered fatalities, 100% of which were males.









*Graph 18 Road traffic crashes in which cyclists were involved, according to the municipality, during the first semester of 2018 (source:* Observatorio Estatal de Lesiones, ISSEA, January- June 2018)







# **Non-Motorized Transport in Aguascalientes**

In recent years, Aguascalientes state has undertaken efforts to adopt and apply the concept of sustainable urban mobility at the metropolitan scale, as an emerging solution to mitigate negative externalities caused by the high use of motorized vehicles, population growth and urban sprawl in the metropolitan area of Aguascalientes, it must be addressed that these externalities are not exclusive to Aguascalientes City and its metropolitan area, but also in most cities in Aguascalientes state where urban development and urban mobility is growing fast.

#### **Bicycle Infrastructure Network**

The actual cyclist infrastructure network: "Is implemented through a network of segregated bike lanes and shared bicycle streets in the cardinal axes, privileging the areas of greatest demand and, above all, the safety of cyclists and pedestrians. The network was developed with the participation of Non-Governmental Associations. It is designed primarily for those who use bicycles as a means of transport to go to their place of work or study, and secondly for the users who use this means of transport in a recreational way. The network has a length of 206.72 kilometres and integrates the existing bicycle infrastructure of 36.70 km. It is divided into two levels: a primary network that unites the zones that generate cyclist trips on north-south and west-east axes and that are made in the short term; and a secondary network with intermediate and recreational routes to be built in the medium term. In consolidated areas where the road section does not allow the execution of a segregated lane for bicycle mobility, the shared lane typology can be used. In pedestrian areas (sidewalks and plazas), cyclists are allowed, as long as the level of service on the road allows it. It should have pedestrian preference, indicating the route with bicycle buttons every 2 meters, vertical signs and elements that prevent the use by motorized vehicles in these areas."









Figure 8 Cyclist infrastructure planning in the municipality of Aguascalientes. (SOURCE: CMOV Aguascalientes)

### **Cultural and Educational Programs**

The municipal bicycle school, has been open for four years, with between **19 and 25 thousand** people attending this bicycle school each year. This program was promoted by organized civil society and was financed by the municipal government, through the Secretariat of Municipal Social Development, during the administration from 2013 to 2016.



*Figure 9 The Aguascalientes municipal bicycle school* (source: pagina24.com.mx)

# Non-Motorized Transport Projects and Public Policies in the Metropolitan Area of Aguascalientes

	Aguascalientes			
Project	Public Policy	Goal Set	Resource	Actors
Mobility Law initiative for	State Development	Publication	Does not apply	CMOV, SEGGOB,
Aguascalientes state	Plan 2016 - 2022	of the		STATE CONGRESS
		Mobility		
		Law.		
Planning and construction	State Development	Creation of	2017: 8,307600	CMOV
of state cycling	Plan	297 km	(Circuit of Mobility	SOP
infrastructure	2016 - 2022		Cyclist TEC-UAA)	CPLAP
First Stage of the Non-	Municipal	10 thousand	There is no labelling	IMPLAN AGS
Motorized Transport Ring	Development Plan	linear		
	2017 – 2019 / Urban	meters built		
	Development			
	Program of			
	Aguascalientes City			
	2040.			
Urban network of bicycle	Municipal	5 km	There is no labelling	IMPLAN AGS
lanes and bicycle stations	Development Plan of			
	Aguascalientes 2017			
	- 2019			







30 km/hr speed zones	Municipal Development Plan	One thousand	There is no labelling	IMPLAN AGS
	2017 – 2019 / Urban	five		
	Development Program of	hundred		
	Aguascalientes City	meters		
	2040.			
Safe sidewalks	Municipal	26 thousand	In process	IMPLAN AGS
	Development Plan	square		
	2017 – 2019	meters		
Safe street crossings	Municipal	50 street	There is no labelling	IMPLAN AGS
	Development Plan	crossings		
	2017 - 2019			
Collaboration on the	Municipal	Document	There is no labelling	IMPLAN AGS
creation of the new urban	Development Plan			
mobility regulation	2017 - 2019			
(transit regulations)				
Elaborate the Non-	Municipal	Document	To be implemented	IMPLAN AGS
Motorized Sustainable	Development Plan			
Transport Strategy	2017 - 2019			
Shared bicycle system	Municipal	System	There is no labelling	CMOV
design	Development Plan	designed		IMPLAN AGS
	2017 – 2019 / Urban			
	Development			
	Program of			
	Aguascalientes City			
6.6 1: 1	2040.	<b>5</b> 1 1 1 1	<del>-</del> 1 · 1 · 1 · 1 ·	C1 4 C) /
Safe bicycle parking	Municipal	Elaborated	There is no labelling	CMOV
system	Development Plan	system		IMPLAN AGS
Considera Character	2017 - 2019	Elekerete d	<b>T</b> I ! I . I . II!	IN ADLIANT A CC
Complete Streets	Municipal	Elaborated	There is no labelling	IMPLAN AGS
	Development Plan 2017 - 2019	strategy		
Regulation of	Urban Development		There is no labelling	IMPLAN AGS
Aguascalientes Urban	Program of		There is no labelling	IIVIPLAN AGS
Mobility	Aguascalientes City			
Widdinty	2040.			
Implement an ecological	Urban Development	Intermittent		State and
means of transport called	Program of the City	term		municipal co-
bike-taxis for the interior	of San Francisco de			responsibility
of the city of San	los Romo 2015-2035			
Francisco				
Create a universal	Urban Development	Short term		Municipal
accessibility manual that	Program of the City			responsibility
indicates the basic	of San Francisco de			, ,
	los Romo 2015-2035			







guidelines of universal		
design for all ages		

Table 3 Assessment of Non-motorized transport and pedestrian public policies in the Aguascalientes metropolitan area. (source: existing public policies in Aguascalientes state.)







# **Events and Workshops**

In October 2017 during the XIII International Congress of Cities and Transport, the first stakeholder engagement event was organized by WRI Mexico and representatives of UNEP Mexico where the preliminary research results on the status on NMT were presented to transport and non-motorized transport officials from five Mexican cities (Colima, Aguascalientes, León, Guadalajara and Oaxaca) and other stakeholders from academic sectors and civil society to generate a discussion, shared experiences and information on their own context.

As part of the activities in 2018, WRI Mexico's Active Mobility team, along with the General Coordination of Mobility of the State of Aguascalientes (CMOV), organized the first workshop for the development of an NMT Public Policy for Aguascalientes City, on July 23<sup>rd</sup> and 24<sup>th</sup>, 2018. The aim of this workshop was to support the commitments made by the present administration, in compliance with the specifications of the General Law of Human Settlements, Land-Use Planning and Urban Development, as well as to support the development of the State Mobility Program; which promotes the access to knowledge and training of municipal, state and academy authorities, which would benefit the population of Aguascalientes, to generate public policy schemes for NMT that coordinate the implementation of actions in the short and mid-term to improve walking and cycling in the state of Aguascalientes, using Aguascalientes City and its metropolitan area as a point of reference.



Figure 10Participants of the NMT Workshop in Aguascalientes (source: Aguascalientes)

The workshop was held in the thirteenth forum of the Tres Centurias Aguascalientes Railroad Complex, Aguascalientes, where more than 52 people from 22 different organizations participated, including: state and municipal authorities, academia, professionals, members of cycling







associations, the media, the private sector and other stakeholders from civil society, that throughout the two days of work, analyzed and defined a vision of NMT for Aguascalientes City, as well as noting the possible supporting actions for implementation.

### **Expected results of the workshop**

- Bring together the relevant actors for their collaboration in efforts and actions that favor NMT.
- Establish a space for the open exchange between different stakeholders.
- Present the information on mobility in general with an emphasis on NMT in the metropolitan area of Aguascalientes.
- Discuss the potential for walking and cycling in cities.
- Identify plans, strategies, actions and actors to follow.
- Creation of roadmaps to determine times, activities and the people in charge.
- Policy development strategy for NMT in the metropolitan area of Aguascalientes.

Based on the diagnostic information and content developed in the NMT Policy for Aguascalientes City workshop, stakeholders identified the need to generate a common vision and objectives for NMT and road safety in Aguascalientes, including the following aspects:

- Identify and establish the coordination attributions of mobility at the state and federal level regarding the use of bicycles and the construction of pedestrian infrastructure.
- Identify and establish coordination dynamics among state Secretariats.
- Establish working groups and include the participation of civil society.
- Define comprehensive and systemic actions to improve pedestrian and cyclist road safety and accessibility conditions through various measures such as education, regulation and reinforcement, road design, network planning, speed management, temporary interventions, etc.
- Establish tangible and measurable commitments and actions to improve the accessibility and safety of vulnerable users especially for pedestrians and cyclists (including performance indicators).
- Establish timetables and road maps for the implementation of actions.
- Integrate the Action Plan with other mobility and development policies, programs and initiatives at the national, state and city level.

The project carried out in coordination with UN Environment was presented to the participants and the media, explaining the progress that had been made. The expected results of the workshop were described as well as the steps to be taken for the development of public policies for NMT for Aguascalientes City and the metropolitan area.

Following the opening presentation, the participants were invited to take part in an ice breaking activity to get better acquainted with the other members, where they were assigned mixed seating in five tables with the aim of distributing attendees with others with diverse backgrounds based on the different capacities and issues that would be addressed later on, focusing on five strategic axes:

1) Institutionality and Regulations, 2) Infrastructure and equipment 3) Road Safety, 4) Culture and







education and 5) Intermodality. In this activity, the participants drew a picture of the person seated to their left and noted below in a few words their main objective of the workshop.

As part of the workshop's methodology, several presentations were made by representatives of state government authorities, civil society, academia and WRI Mexico, to generate a diagnostic process on the current state of mobility and NMT in Aguascalientes City and the metropolitan area.

The workshop results were based on the team integration, in which each of the tables was given a topic for the development of strategic lines regarding the specific program, identifying the stakeholders, interest, influence, time, financing and the impact it would have. The strategic lines were: 1) Legal and mobility framework, 2) Infrastructure and Equipment, 3) Road Safety, 4) Culture and education and 5) Multimodality.

Based on the workshop, the strategic lines to be implemented were decided on, which would be aligned with the projects of the current administration and would be viable to implement in a short period of time.















# **Strategies**

Based on the assessment, the workshop and the information analysis, the following strategies were developed, with the aim of being able to implement them in a short period of time.

### 1. Legal and Mobility Framework

### • Mobility Regulation.

- Widdinty	negulation.
Objective	Generate the proposed initiative of the State Mobility Law, which guarantees the right to safe mobility for all road users.
Time	One year
Responsible	CMOV Aguascalientes
actor	
Stakeholders	CMOV, State Congress, Civil society, transport union, Secretariat of the Environment, Legal departments for public safety, public works, planning and projects, municipals, academia, research centres.
Related	Interinstitutional workshops (state, municipal and dependencies)
activities	Document drafts
	Socialization workshop
	Technical revisions
	Full approval
	Law proposal
	Publication
Risks	No approval
	Not completely accepted
	No interinstitutional participation
	No help from the congress
Impact	Beneficiaries (Aguascalientes state population) All road users: users with limited mobility, pedestrians, cyclists, public transport users, cargo and private transport.

### • Municipal Traffic Regulation.

- Widilicipa	in traffic negatation.
Objective	Generate a first mobility regulation for the metropolitan area that regulates
	norms and criteria for the creation and intervention of public roads.
Time	One year
Responsible	CMOV
actor	
Stakeholders	CMOV, Municipalities of the metropolitan area, city halls, public works and
	municipalities, civil society.
Related	Inter-institutional work workshop
activities	Work workshop with civil society







	Regulation initiative     Document draft		
	Exposure of needs by civil society		
	Revision, modification and approval of the regulation initiation		
	Approval		
	Publication		
Risks	No approval from congress		
	<ul> <li>Opposition of public road users (transport and civil society)</li> </ul>		
	Little interinstitutional and social participation		
	<ul> <li>No law and manual continuity due to administrative changes</li> </ul>		
Impact	The whole population in general (regarding health and economy), mainly public		
	road users and residents of areas that will be intervened on, the government		
	dependencies will have a series of design guidelines on which to carry out the		
	following Development Plans (support for the growth and sustainable orderly		
	planning of mobility in Aguascalientes). In general, the city will have an		
	improved air quality, environment and urban image.		

### • Technical Universal Accessibility Standard.

Objective	Generate a Technical Universal Accessibility Standard for the metropolitan area	
Objective	that regulates norms and criteria for the creation and intervention of public	
	,	
	roads.	
Time	One year.	
Responsible	CMOV,	
actor		
Stakeholders	CMOV, Metropolitan area municipalities, City halls, Public Works and	
	municipalities, Civil society.	
Related	Draft generation	
activities	Inter-institutional work workshop	
	Work workshop with civil society	
	Generation of the regulation initiative	
	Exposure of needs	
	Revision, modification and approval of the regulation initiation	
	Approval	
	Publication	
Risks	No approval from congress	
	Opposition of public road users (transport and civil society)	
	Little interinstitutional and social participation	
	No law and manual continuity due to administrative changes	
Impact	Beneficiaries (Aguascalientes state population) All road users: limited mobility	
	users, pedestrians, cyclists, public transport users, private and cargo transport.	







# 2. Infrastructure and Equipment

• Planning, construction and maintenance of state cyclist infrastructure.

	·
Objective	Connect a network of bicycle lanes uniting educational, recreation and work
	centres, to increase the volume of cyclists and improve safety.
Time	One year.
Responsible	Planning
actor	
Stakeholders	CMOV, Planning, SOP, SCT, Municipalities.
Related	Identification of intervention areas
activities	Project proposals
	Execution of work
	Resource management
Risks	No approval of the proposal
Impact	Beneficiaries (Aguascalientes state population) All road users: cyclists and
	interdisciplinary public transport.

### 3. Road Safety

### Information and Statistics Bank.

Objective	Generate a situational assessment based on statistics and projections in the short and medium term.
Time	One year
Responsible	Planning.
actor	
Stakeholders	SSPM, INEGI, IMPLAN y municipal planning bodies, observatories, municipalities
	and states, citizen councils, ISSEA, Red Cross.
Related	Data collection.
activities	Create an approved state database with the institutions
	<ul> <li>Process and analyse the data for information generation on a monthly</li> </ul>
	basis.
	Consolidate a geographic information system
	Inter-institutional linkage
Risks	Lack of inter-institutional coordination
Impact	The whole population

• Participatory Geometric Safe Design.

• Participa	tory decinetric safe design.
Objective	Increase the road safety for users mainly for people with limited mobility.
Time	One year.
Responsible	CMOV
actor	
Stakeholders	SEGUOT, IMPLAN y municipal planning bodies, SOP.
Related	50 thousand meters squared of safe sidewalks
activities	Fifty safe crosswalks
	Five kilometres of bicycle lanes
Risks	Lack of resources







	Non-compliance of the Contractor
Impact	The whole population

#### • Create citizen councils.

Objective	Contribute needs for decision making since they will be the main users and likewise execute public resources in an appropriate way.
Time	One year
Responsible	Citizens
actor	
Stakeholders	Population in general
Related activities	<ul> <li>Monthly meetings on topics related to the new road culture (people with limited mobility, general population, cyclists and vehicle drivers in general).</li> <li>Make strategic plans for new projects with corresponding authorities.</li> </ul>
Risks	Lack of resources     Not be taken into account by the corresponding authorities
Impact	Representative sample of the population

#### • New mobility culture.

• New IIIO	binty culture.
Objective	Train car drivers, public transport drivers, public servants and road users in general
Time	One year
Responsible	CMOV
actor	
Stakeholders	SSPM, citizen councils, IMPLAN y municipal planning bodies, Red Cross, ISSEA
Related	Provide copies of the new mobility law.
activities	Take guided tours in the mini-city for pedestrians and cyclists
	Awareness campaigns in middle school, high school and university
	youth about the seven risk factors
	Vulnerable population
	Child restraint system
	Distractors
	• Speed
	Alcohol and driving
	Safety belt
	Protective helmet use
Risks	Lack of assistance and interest on the part of citizens.
	<ul> <li>Not taken into account by the corresponding authorities</li> </ul>
Impact	The whole population of Aguascalientes state.







### 4. Culture and Education

### • Aguascalientes Open Street Program

	intes open street rogium
Objective	Encourage the use of public space for the creation of non-motorized dynamics and coexistence where the population can take advantage of public space for recreational, sporting and cultural purposes. Before the end of 2018 for Aguascalientes City and expansion to all municipalities according to the social demand of the project
Time	One year
Responsible actor	CMOV
Stakeholders	Social Development of the state, ATUSA, Los Arquitos Cultural Centre, Department of Physical Culture and Sports, Urban Control Department 7 Department of Urban Image, Icon Companies of Aguascalientes FICOTRECE, State government, Municipal government, IDEA, IMAC, IMPLAN, Cultural institute of Aguascalientes, ITA, Civil protection, SCT, State Secretariat of Environment, Secretariat of the Environment and Municipal Development, Secretariat of Public Works.
Related activities	<ul> <li>Generate alternate routes in parallel roads during the event's development that can be announced within the normal itinerary of the routes.</li> <li>Carry out a series of events together with the framework of the Open Street Program.</li> <li>Establish joint work methodologies that ensure an adequate road flow in harmony with the Open Street route.</li> <li>Develop alternate routes and strategies for the management of public transport before, during and after the hours of operation to provide a quality service that can be articulated with the Open Street route in a positive way.</li> <li>Generate strategies to promote municipal sports activities</li> </ul>
Risks	<ul> <li>Generate strategies to promote municipal sports activities</li> <li>Lack of budget, little inter-institutional linkage, exceeding operational capacity.</li> <li>Institutional management inability, incompatible regulations, lack of interest.</li> <li>Lack of assistance or interest, lack of coordination, lack of funds, operational rebase</li> </ul>
Impact	<ul> <li>Immediately it will impact 70 thousand people, as the project consolidates it will benefit the whole population in the metropolitan area of Aguascalientes.</li> <li>Benefits in culture, environment, physical activity, citizen participation, appropriation of public space, urban resilience, and road education.</li> </ul>







# Comprehensive Road Education.

Objective .	Encourage the change from the motorized mobility paradigm to develop
	processes of social inclusion of all forms of mobility through active education
	and re-education strategies for the metropolitan area of Aguascalientes and the
	state in a continuous and permanent manner.
Time	One Year
Responsible	CMOV
actor	
Stakeholders	CMOV, State Public Safety, Municipal Public Safety, Department of Road
	Education, Institute of Education of the State of Aguascalientes, Civil Protection
	of the State, IMPLAN, Civil organizations.
Related	Training of the private and public sector in comprehensive road
Activities	education at the federal level
	Coordination of national events in terms of road safety
	Integration of the development plan to universal mobility
	Road safety and education programs
	Creation of the institutional evaluation of integration of the
	development plan based on universal accessibility criteria
	Dependency evaluation in terms of integration of the development plan
	from universal accessibility criteria
	Establish universal accessibility guidelines for the state
Risks	Focus errors, staff mobility, institutional transversality
	That is not done.
	Lack of evaluation instrument, failure to comply with indicators, lack of
	interest.
	<ul> <li>Operational rebase, lack of funds, lack of response, apathy.</li> </ul>
	Lack of base indicators, incompatibility of measurement, complex
	measurement indicators, insufficient budget, excess of operational
	work
	Operational rebase, lack of funds, poor transparency, impeding the
	measurement of indicators and evaluation.
	Lack of evaluation instrument, failure to comply with indicators, lack of
	interest.
	That other dependencies do not comply with the published guidelines
Impact	Improvements to institutional management, regulations and basic
	guidelines, operability of government institutions.
	<ul> <li>Socialization of the benefits of NMT.</li> </ul>
	<ul> <li>Visibility of the problems associated with road violence.</li> </ul>
	<ul> <li>Generation of mobility culture starting in childhood.</li> </ul>







### Social Comptroller of Mobility.

Objective	Promote a participatory culture in the social regulation of comprehensive mobility from the implementation of digital tools for the metropolitan area of Aguascalientes and the state continuously and permanently.
Time	One year.
Responsible actor	Citizen Observatory of Urban Mobility
Stakeholders	Citizen Observatory of Urban Mobility, Civil Organizations
Related	Mobility Attorney's Office
activities	Accident rate data analysis
	<ul> <li>Proposal of urban interventions based on data analysis</li> </ul>
	<ul> <li>Socialization campaigns for crosswalk risks</li> </ul>
	Projects of participatory cartography, mapping of public space and
	digital social comptroller
Risks	<ul> <li>Lack of assistance and interest on the part of citizens.</li> </ul>
	Not be taken into account by the corresponding authorities
Impact	To the entire population of Aguascalientes state.

# 5. Multimodality

### • Safe Crosswalks.

Objective	Ensure pedestrian safety through geometric design and implementation (before
	the end of the administration) of a system that privileges pedestrians in the
	metropolitan area of Aguascalientes.
Time	One year
Responsible	CMOV
actor	
Stakeholders	CMOV, Municipal and State Public Works, Public safety, Municipal and State
	Planning, Civil society, Secretariat of the Environment, Urban development.
Related	<ul> <li>Pre-project assessment and design</li> </ul>
activities	Implementation of the Project
	Executive Project design
	Execution of the work
	<ul> <li>Observation and surveillance of the Project area</li> </ul>
	Secure resources
	Project socialization
	Project revision
	Project authorization
Risks	Project approval
	Not on time
	The work will not be consolidated
	<ul> <li>Not having a team for the execution</li> </ul>
	Not having an approved resource







Impact	It is aimed at all pedestrians, cyclists, public transport users, cargo transport
	users and private transport. The benefits are: saving lives, efficient transfers,
	ensuring the safety of all actors, encouraging pedestrians to use public roads
	and benefits in terms of public health.

### • Safe Sidewalks.

Objective	guarantee the safety of pedestrians through the geometric design and implementation (before the end of the administration) of a system that
	privileges pedestrians in the metropolitan area of Aguascalientes.
Time	One year.
Responsible	CMOV
Actor	
Stakeholders	Transit, CMOV, Municipal and State Public Works, Municipal and State Planning,
	Civil Society, Secretariat of the Environment, Urban Development.
Related	Project revision
activities	Pre-project and executive project design
	Project implementation
	Execution of the work
	Secure resources
	Socialization of the project
	Observe the project
	Project suggestions
	Project authorization
Impact	Pedestrians in general ensuring pedestrian safety and encouraging the use of
	public roads, making them more efficient and revising public health benefits.

# • Safe Bicycle Parking System

Objective	Design and implement a bicycle parking system that is safe and favours
	intermodality in the metropolitan area of Aguascalientes
Time	Before the end of the administration
Responsible	CMOV
actor	
Stakeholders	Transit, CMOV, Municipal and State Public Works, Public Safety, Municipal and
	State Planning, Civil Society, Secretariat of the Environment, Urban
	Development.
Related	Project revision
activities	Pre-project and executive project design
	Project implementation
	Execution of the work
	Observation and surveillance of the project area
	Secure resources
	Project socialization
	Project revision







Impact	All cyclists, encouraging the use of bicycles, ensuring the safety of bicycles and
	users, encouraging multimodality, discouraging vehicle use, reducing CO2
	emissions and public health benefits.

### • Shared Bicycle System.

Objective	Design and implement (before the administration ends) a shared bicycle system that favours intermodality in the metropolitan area of Aguascalientes.
Time	One year.
Responsible actor	CMOV
Stakeholders	Transit, CMOV, Municipal and State Public Works, Public Safety, Municipal and State Planning, Civil Society, Secretariat of the Environment, Urban Development.
Related activities	<ul> <li>Pre-project design</li> <li>Project implementation</li> <li>Project revision</li> <li>Executive project design</li> <li>Execution of work</li> <li>Observation and surveillance of the project area</li> <li>Secure resources</li> <li>Project socialization</li> <li>Observe the project</li> <li>Project suggestions</li> </ul>
Impact	It is aimed at all citizens who can and want to make use of them, benefits: reduced environmental impact, encourages bicycle use, public health benefits, encourages multimodality.

### • Multimodal Public Transport.

	• Wattimodal Fubile Halisport.		
Objective	Implement multimodal public transport (before the end of the administration)		
	that has universal accessibility, connected with the shared bicycle system and		
	safe bicycle parking with racks to transport bicycles within the metropolitan		
	area of Aguascalientes.		
Time	One year.		
Responsible	CMOV		
actor			
Stakeholders	Transit, CMOV, Municipal and State Public Works, Public Safety, Municipal and		
	State Planning, Civil Society, Secretariat of the Environment, Urban		
	Development.		
Related	Pre-project design		
activities	Project implementation		
	Project revision		
	Executive project design		
	Execution of work		
	Observation and surveillance of the project area		
	Secure resources		







	Project socialization
	Observe the project
	Project suggestions
Impact	It is aimed at all citizens who can and want to make use of them, benefits:
	reduced environmental impact, encourages bicycle use, public health benefits,
	encourages the use of public transport and bicycles.

### Bicycle Taxi System.

	axi System.
Objective	Design and implement a bicycle taxi system that favours intermodality, which allows efficient transfers and reduces the motorization index in the downtown areas of the Aguascalientes metropolitan area
Time	One year.
Responsible	CMOV
actor	
Stakeholders	Transit, CMOV, Municipal and State Public Works, Public Safety, Municipal and State Planning, Civil Society, Secretariat of the Environment, Urban Development.
Related activities	<ul> <li>Pre-project design</li> <li>Project implementation</li> <li>Project revision</li> <li>Executive project design</li> <li>Execution of work</li> <li>Observation and surveillance of the project area</li> <li>Secure resources</li> <li>Project socialization</li> <li>Observe the project</li> <li>Project suggestions</li> </ul>
Impact	It is aimed at all citizens who can and want to make use of them, benefits: reduces environmental impact, encourages bicycle use, public health benefits, encourages tourism, public health, the use of public space.







# **Conclusions and Next Steps**

- Non-Motorized Transport in Aguascalientes not only needs political will but also this Action
  Plan to help to identify specific actions and organize times and collaboration between
  different stakeholders in order to achieve more safe walking and cycling trips.
- Non-Motorized Transport in Aguascalientes, as many other cities in Mexico, needs to be
  considered as a very important part of the Sustainable Urban Mobility Solutions and other
  public policies on health, development, environment and economy. Due to the actual
  conditions in the city, most trips are still short, and therefore are easily accessible by walking
  and cycling when combined with public transport.
- In this way, walking and cycling in Aguascalientes City, and also in other cities in the state, is a way to retain and increase sustainable urban transport and the easiest way to provide cheap, safe and health access to opportunities in the cities.
- As the diagnostics for some of the programs previously described are still in progress,
  Aguascalientes City through the General Mobility Coordination will be finishing them to
  provide the complete information as well as implementing the most convenient actions
  from the strategies previously described that were developed in the workshop, with the aim
  of demonstrating some NMT benefits following the implementation and develop this
  document into other specific public policies.