

Mexico City, Mexico

Mexico City's Green Plan: EcoMobility in motion



Mexico City, one of the largest and most polluted cities in the world, is demonstrating that an agenda shift toward environmental sustainability is possible. The transportation and mobility strategy, part of the city's Green Plan, offers an integrated approach to improve transportation infrastructure and awareness-raising campaigns for citizens of a 21st Century mega-city.

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Abstract

The transportation and mobility component of Mexico City's *Plan Verde* (Green Plan) agenda, designed to lead the city toward a state of EcoMobility, was launched in 2007. The Plan is based on a five component strategy to reduce traffic congestion and cut greenhouse gas (GHG) emissions. The strategy has resulted in a set of programs to improve cycling and pedestrian conditions, as well as the public transport system. Citizens are also being educated on sustainable mobility's role in fostering a healthier, safer city. The Plan emphasizes local action in particular, for example the *Hoy no Circula* (Today Don't Drive) and *Muevete en Bici* (Get on Your Bike) programs.

The importance of a green transportation plan

Pollution levels pose serious health risks in Mexico City. Until a few years ago, ecological experts estimated that spending a day in Mexico City was equivalent to smoking about 40 cigarettes. The city's physical geography also contributes to the problem; the lower atmospheric oxygen levels at Mexico City's altitude (around 2,200 m above sea level) causes incomplete fuel combustion in engines – this translates to higher carbon monoxide emissions and other compounds. Intense sunlight and heat exacerbate the problem by transforming volatile organic compounds and nitrogen oxides into smog.

The Green Plan is responding to these challenges with an integrated approach wherein results are already apparent: The city's ozone level exceeded the Mexican national standard (0,100 parts per million) for 333 days in 1990, while in 2009, the number of days declined to 180.

As more individuals choose green modes of transportation, global GHG emissions, local traffic congestion and air pollution will be reduced. Other important achievements might include a decrease in traffic fatalities and more lively streets and neighborhoods. Reforming car-oriented cultures is a major challenge for cities around the world. There are many reasons for this, including infrastructure planning that caters to the automobile, socio-economic developments (i.e. social status related to car ownership and the growth of a middle class who can afford a car) and insufficient alternative modes of transportation.



Population

8,841,916 million (Federal District)

Municipal budget

Approx.MXN\$129,434 billion (2010)

\$10,518 billion USD

€7,742 billion Euro

Land area

1,485 km²



**Global Alliance
for EcoMobility**

Case Study



Mexico City's Green Plan

The Green Plan is a 15-year mid-term plan (2007-2022), created with the intention of implementing Mexico City's environmental agenda. The Plan encompasses a wide range of programs and activities to address climate change, reduce GHG emissions and encourage citizens to adopt EcoMobility-friendly behaviour. The actions are addressed under seven headings:

- Land conservation,
- livability and public space,
- water supply,
- transportation and mobility,
- air pollution,
- waste and recycling,
- energy and climate action.

The Green Plan is built on eight pillars: guaranteeing resources in quality and in time; updating the legal framework and enforcing current rules; promoting long-term campaigns for environmental education and communication; making initiatives and budget more transparent to citizens; creating a council to monitor and evaluate the progress of the Plan; promoting agreements between the municipality and the central government; learning from similar initiatives internationally and stimulating citizen participation.

Most of these goals are intended to be completed, or be at an advanced stage, by 2012. The need to expedite this process may be partly for political reasons; the Plan is not legally binding and the responsible administration will be up for election in 2012.

The city context

Mexico City is North America's largest metropolis as well as the financial, political and cultural capital of Mexico. The entire metropolitan region has around 21 million inhabitants while the Federal District has 8.8 million inhabitants.

Transportation is an integral part of life in Mexico City as well as a serious logistical issue. Millions of city residents commute to and from work an average of 2.5 hours a day. The city operates around 28,000 microbuses which are outdated with respect to environmental efficiency and safety. The number of cyclists is increasing, but Mexico City's car-centered culture still makes cycling a dangerous mode of transportation.

The federal and local governments are constantly monitoring environmental conditions in the city and have implemented several initiatives to reduce air pollution and decrease traffic congestion. Improving the city's public transportation system is a major priority since the system contributes to roughly half the city's total GHG emissions. Mexico City's efforts have been recognized internationally for sustainability achievements.

Mexico City's Green Plan: Moving forward with a sustainable transportation policy

The Green Plan is aiming to improve the efficiency of Mexico City's public transportation system and promote non-motorized means of transportation – essentially, EcoMobility – in order to reduce GHG emissions and vehicle congestion on roads. Offering more environmentally-friendly transportation options to citizens is a major component of the Plan.

Improvements to the city's public transportation system focus on two key areas: Subway expansion and bus route expansion. The plan proposes to add a 12th line to Mexico City's subway system which is already one of the biggest underground systems in the world. According to a Line 12 feasibility study, estimated demand for the additional line is greater than 367,000 passengers per day on working days.

With respect to buses, the Plan calls for three additional bus corridors to be added to two pre-existing transport channels. Mexico City's Metrobus system provides rapid service using bus-only road lanes. Metrobus has enjoyed success since its 2005 launch and the same bus program has been implemented in other cities. In addition, the Plan advises replacing the city's old, polluting microbuses, with larger, eco-efficient vehicles.

Almost 50 percent of Mexico City's private school students arrive to school each day by car. These cars comprise 25 percent of the vehicles circulating in the city. In response, the Plan introduced the “compulsory pupils transport” program (*Programa de Transporte Escolar*, PROTE) to lower the number of private vehicles on Mexico City's streets and encourage students to travel by foot, bicycle or public transportation.

The Plan also asks for improvements to the city's walking and cycling conditions. The “pedestrianization” of the city's historical centers and of some of its neighborhoods began in 2010. Cycling-friendly infrastructure was introduced by increasing the length and number of bike lanes – an endeavor called *Programa de*

A decorated bus system

The Mexico City Metrobus system (or Bus Rapid System, BRT) won the 2009 Roy Family Award for Environmental Partnership from the Harvard Kennedy School of Government. The BRT reduces air pollution and GHG emissions, while improving the quality of life and transportation options in one of the world's largest cities.

The *Muevete en Bici* program was honored in October 2008 by the World Health Organization in the 2008 "Active Cities, Healthy Cities" contest. The contest was designed to recognize the efforts of government, communities and the private sector in Latin American cities to develop initiatives that promote healthier lifestyles.

Corredores de Movilidad No Motorizada (Non-Motorized Lanes Program) which also includes an educational program, *Muevete en Bici* (Get on your Bike).

On certain Sundays part of the Paseo de la Reforma, the biggest city centre street, is blocked to cars in order to provide space for recreational activities among pedestrians and cyclists. The Plan also introduced a bicycle sharing system located in strategic places downtown; *Ecobici* (EcoBike), was launched at the beginning of 2010 and allows people to borrow bicycles for short periods at an affordable price. Bikes can be returned to one of 85 stations in the city center. The stations are usually situated close to public transportation stops to allow functional interchange between different means of transportation.

The road component of the Plan has already made significant progress with *Hoy No Circula* (Today Don't Drive). The program aims to relieve traffic congestion and improve air quality by prohibiting a segment of automobile traffic one day a week. The Plan extended the *Hoy No Circula* program to Saturdays (*Hoy No Circula Sabatino*).

The Plan also aims to improve existing road infrastructure, for example, with road adjustments in order to solve 350 conflicts point in the city or the introduction of intelligent traffic lights along the main street.

Transportation in Mexico City's Green Plan

The transportation section of the Green Plan is structured as follows:

A 15-year mid-term plan which integrates EcoMobility principles, for example, enhancing infrastructure for cyclists, pedestrians and public transportation.

The ambitious strategy has five sub-components, or goals:

1. Improve the quality and availability of public transportation;
2. Lower the number of private vehicles on the roads
3. Promote non-motorized means of transportation;
4. Speed up mobility on the road;
5. Foster a road culture that respects cyclists and pedestrians.



Metrobus

Results and impacts of the project in the community

Results are already apparent in all five areas of the Plan only three years into its implementation:

- **Improvements in the quality and availability of public transportation:** The Metrobus currently has two different lines and shuttles about 473,000 passengers daily, 15 percent of whom indicated they previously commuted by car. As a result, Mexico City's carbon dioxide emissions have decreased by 80,000 tons annually. The bus system has been extended by 50km and a third bus corridor is now under construction. The goal is to build five corridors by 2012, in addition to constructing a 12th subway line – a process that began in 2008. Mexico City has replaced roughly 470 unsafe, polluting minibuses with 128 long buses that use cleaner diesel technology.
- **Lowering the number of vehicles in circulation:** The Programa de Transporte Escolar started through a rule that prohibited parents from bringing their children to school by car. It was launched in 2009 in only a few private schools, with new ones added gradually: As of September 2010, 21 schools are now involved. The program met several obstacles during its implementation, however, for reasons related to safety and cost.



Muevete en Bici Sundays

- **Promoting non-motorized means of transportation:** Mexico City's bicycle lanes have been extended by 31km and the Sunday *Muevete en Bici* program has become popular among citizens. *Ecobici*, the city's bicycle rental program, registered 4,000 users within its first three months of operation. There have been an estimated 50,000 bicycle trips taken in the city using *Ecobici* bikes.
- **Speeding up road mobility:** The *Hoy No Circula Sabatino* program cut roughly 960 tonnes of pollutants (mix of hydrocarbons, carbon monoxides, nitrogen oxides) each Saturday, and reduced the daily average number (excluding Sundays) of cars on Mexico City's roads by 342,000.

- **Fortifying a new road culture respectful for bikes and pedestrians:** Mexico City's traffic code was adjusted in 2009 to improve safety conditions for pedestrians and cyclists. Two main factors contributed to the success of the Green Plan's transportation component: Improvement of the public transportation system – including its level of eco-efficiency – and initiatives promoting cycling and walking.

Lessons learned

Megacities such as Mexico City require well-connected and fully integrated public transportation systems to support citizens' quality of life. Introducing a Metrobus system, microbus replacements, and a subway expansion all contribute to lowering GHG emissions and traffic congestion.

The *Ecobici* program **diversified the public transportation system** and widened its accessibility by situating bicycle stations close to bus and subway stops. Public transportation and bicycles are both considered to be affordable in Mexico City – an important consideration, as over 60 percent of Mexico City's Federal District residents are considered 'poor' or 'moderately poor'. *Muevete en Bici* Sundays are very popular because they offer citizens the benefit of car-free days as well as social and cultural opportunities

Another relevant aspect is the 15-year length of the Plan. **Mid-term frameworks allow more precise goal-setting** for environmental issues wherein processes are usually slow and gradual, for example, broad behavior changes or big adjustments to infrastructure. The Green Plan allows for long-term strategizing with a holistic view to policy making and resource planning.

Some of the Plan's programs did not achieve intended results. It is important to underline, though, that the Green Plan is an ambitious document, whose goals would even be considered a challenge among richer and smaller cities. Improvements to infrastructure, while already showing positive results, are not advancing on schedule.

The *Programa Transporte Escolar* (PROTE) met with considerable resistance from families and schools. Some possible reasons for this program's limited success are: It was only aimed at private schools and not public schools and there was a lack of incentive – students were required to pay for public transportation without being offered compensation. The program was also written and launched without stakeholder involvement and was implemented as an ordinance. Also, the program did not have a public education component – an important element at the core of the Green Plan.

Planning and public participation are crucial ingredients to the success of a city's eco-transportation plan. Careful consideration about available resources as well as context help to form realistic plans wherein challenging goals motivate stakeholders. Public participation builds support for activities, helps educate wider audiences and facilitates useful information exchange about local conditions.



Ecobici bikes

Replication

The Green Plan's potential for replication consists of the following aspects:

- Adopting an integrated strategy, with a holistic approach that considers infrastructure and its inter-linkages, as well as the social significance of transportation in the local context. The Plan concentrates on infrastructure improvements as well as on awareness-raising and education.

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- Long-term commitments which allow a city to plan a detailed initiative over several years.
- Well-defined goals with specific targets, even if targets are incorporated into a broader policy framework.

Decades of car-oriented strategies make it difficult to shift toward more ecomobile transportation patterns. This is why the Green Plan is an important and inspiring document: It indicates the potential for major environmental initiatives to be adopted by other megacities around the world.

Sources

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