

Mobility in Bogota

Making transportation smarter and more sustainable

Bogota, Colombia has made more progress than most cities in achieving the UN's SDGs, qualifying it as a "sprinter" among the 167 cities benchmarked in our survey. Its efforts around mobility are best in class.

Mobility is a key area of focus for cities globally as a result of the pandemic. Of the city leaders surveyed, 55% said the health crisis had caused them to reconsider mobility and transportation to accommodate changing citizen behaviors. Bogota's leader was one of them.

Grappling with congestion

With 7.8 million inhabitants and 1.2 million vehicles, the Bogota metropolitan area has been suffering from heavy traffic, congestion, and related pollution since the 1990s. According to the [2019 Global Traffic Scorecard](#), Bogota had the dubious distinction of having the worst traffic congestion in the world, causing drivers to lose an average of 191 hours a year on the road.

According to a [mobility survey](#) conducted in 2019 by the city, sustainable travel went from a 72% share of all city journeys in 2011 to 67% in 2019, a trend that worried city leaders. The same year, the city launched [an investment project](#) to develop a roadmap to determine the causes of this decline and promote more equitable and clean transportation.

The research showed that residents' experience with public transportation had become increasingly unsatisfactory, particularly for the most vulnerable citizens who had restricted access to the city's goods and services. Respondents cited the transportation system's low coverage and frequency as main problems, causing long waiting times and many transfers between different modes of transportation.

A multi-faceted approach

Equipped with this information, city leaders drew up a mobility plan that promoted several of the goals of the UN's Agenda 2030, including reduced inequalities, sustainable cities, and climate action. The city's resolutions included reducing the monetary burden of transportation for low-income households and improving the "time of access" to public transportation (a figure calculated based on the walking time to and waiting time at stations and stops).

In addition, Bogota's public transport authority added 596 electric buses to its fleet in the first week of 2021, bringing it to a total of 1,485 electric buses. This investment elevates Bogota to the city with the most electric buses in the world, outside of China. This will allow the city to eliminate [83,433 tons of carbon dioxide](#) and 9.63 tons of particle emissions each year.

Mobility in Bogota by the numbers

\$1.8bn
economic cost of traffic
each year

60%
% of vehicles on the road
that are private cars

191 hrs.

wasted in traffic on the road per driver each year



Real-time data is key for mobility solutions

Bogota has learned that data is a powerful tool for pinpointing and addressing its most pressing transportation problems.

According to Grace Quintana, a city leader in digital government and transformation, one of the biggest challenges to solving mobility problems was acquiring and utilizing the real-time data needed to create an efficient government plan.

The city created an open data model called GAQO, the acronym for Governance, Administration, Quality, and Optimization of data. The tool was designed to facilitate the use of data to solve any kind of problem in Bogota, particularly in the public sector. For instance, officials are in the process of implementing GAQO in the National Health Superintendency.

“GAQO created a roadmap detailing what our problems are and what kind of data can help respond to them. For instance, how many cars are in Bogota, where do accidents happen, at what time, what color are the cars,” said Quintana.

City officials conducted a mobility study utilizing GAQO that helped to determine a key data point to reduce congestion: 65% of car trips in Bogota involve only one or two passengers, a factor that increases traffic dramatically in a city where 60% of vehicles traveling on the road are private. The data revealed that heavy load vehicles were not primarily

responsible for Bogota’s traffic jams as was originally thought; instead, the main culprit was private cars.

Tapping IoT

To help with its data collection, Bogota has turned to IoT. In 2019, it partnered with World Sensing (a Spanish IoT company specializing in sensing solutions for smart cities) to develop one of the most advanced mobility management solutions in the world. It integrates data from traffic lights, bus stops, traffic cameras, bicycle lanes, and other elements to provide a comprehensive understanding of urban mobility that enables real-time management.

The data culled through these efforts allowed Quintana to pursue a range of solutions to address congestion as well as to reduce greenhouse gas emissions, improve the city’s air quality, and minimize road accidents.

“It’s important to make data open, available, and useful to people. GAQO ensures that no data is wasted and that we are utilizing it to satisfy the need for information and to solve issues. This model generates value for the government, giving us the ability to improve products and services.”

—Grace Quintana, City Leader, Bogota

Most important modes of transportation in Bogota



TAXI



RIDE-HAILING/RIDE SHARING



ELECTRIC VEHICLES



PUBLIC TRANSPORTATION

Most effective steps Bogota is taking to improve mobility

Use data and analytics for transportation planning	Work with nearby cities to develop trans-border transportation infrastructure	Work with freight delivery and local businesses on smart distribution solutions	Introduce policies to reduce emissions and improve air quality	Create a long-term multi-modal urban mobility vision and plan
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Mobility technology

Where Bogota is making large investments

Smart traffic signals/real-time traffic management	Real-time public transportation app/information	Public electric vehicle charging infrastructure
Mobility as a service (MaaS) apps	Digital transit payments/open-loop systems	Demand-based micro transit (ride-sharing, shuttle vans)