

## CASE STUDY

# Efficient City Transport for Those Who Do Not Own Cars



*The TransMilenio Bus Rapid Transit system is at the heart of Bogotá's strategy to serve the transport needs of a majority of the city's residents, who do not own a car.*

## Overview

A gold-standard bus rapid transit (BRT), TransMilenio is widely recognized as one of the world's best systems, with high-capacity, high-quality buses that make 1.6 million passenger-trips daily.

TransMilenio was launched in Colombia's capital, Bogotá, early 2000 as part of an urban master plan that prioritizes people over cars. Instead of building more roads to ease traffic congestion, the city government improved bus services, limited car use, and encouraged cycling and walking in the city center.

Bogotá's transport strategy has also reduced pollution from vehicles and earned carbon credits. TransMilenio is the first mass transit project to trade carbon dioxide emissions for cash under the United Nations' Clean Development Mechanism.

## Project snapshot

<b>Dates</b>	<ul style="list-style-type: none"> <li>• <b>1998:</b> Start of project</li> <li>• <b>2000:</b> Start of operations (Phase I)</li> <li>• <b>2006:</b> Phase II opens</li> <li>• <b>2013:</b> Phase III under construction</li> </ul>
<b>Cost</b>	<ul style="list-style-type: none"> <li>• <b>\$240 million (\$5.9 million per km as of 2013):</b> Phase I infrastructure cost / Financed through local fuel taxes (46%), national government grant (20%), a World Bank loan (6%), and other local funds (28%)</li> <li>• <b>\$545 million (\$13 million per km as of 2013):</b> Phase II infrastructure cost / Financed by national government (66%) and local fuel surcharge (34%)</li> <li>• <b>\$1.3 billion:</b> Phase III infrastructure cost</li> </ul>
<b>Institutions and Stakeholders</b>	<p><b>Financing</b></p> <ul style="list-style-type: none"> <li>• Local and national government</li> <li>• World Bank</li> </ul> <p><b>Executing agency</b></p> <ul style="list-style-type: none"> <li>• Bogotá city government</li> </ul> <p><b>Operating agency</b></p> <ul style="list-style-type: none"> <li>• IDU (Instituto de Desarrollo Urbano - Institute of Urban Development)</li> <li>• TransMilenio SA (BRT management agency) and seven bus operating companies</li> </ul>

## Context

Bogotá is not just Colombia's political and administrative capital but also its economic center. It is the largest city in the country with a population of 8 million people. Most of its low-income residents live on the outer edges of the city and rely on public buses to get to work and move around. There is no metro system.

To meet the growing transport needs of the city, the Japanese International Cooperation Agency (JICA) proposed in 1996 the construction of six highways and a metro system. The first highway, an elevated toll road, would cost over a billion dollars.



# Challenge

## Lack of safe and efficient public transportation

Before TransMilenio opened in 2000, commuters had little choice in public transportation. Unruly buses that stopped at any curb ruled, and clogged, the streets of Bogotá. Some of them were unlicensed. Bus drivers competed fiercely for commuters because they were paid based on the number of passengers they got. It was not safe to ride a bus.

## Worsening air pollution

Diesel-fed buses and traffic congestion increased air pollution in the city. Bogota has one of the highest levels of sulphur dioxide pollution of the cities in the Latin American Green City Index based on 2008 figures.

# Solutions

## Build a high-capacity, high-quality BRT

In 1998, Bogotá Mayor Enrique Peñalosa started a long-term public transportation strategy that provides mobility for all. Its centerpiece is a high-capacity BRT, which was faster and less costly to build than a metro system and elevated highways.

## Promote the use of mass transit and nonmotorized modes of transportation

To reduce traffic congestion and pollution, Bogotá's mobility strategy also included car restrictions, pedestrian walkways, and integrating bicycle paths, called Cicloruta, along the BRT corridors. In addition, the city plans to phase out diesel buses from its streets and replace them with hybrid and full electric models by 2024.



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## Numbers and facts

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Segregated busways with passing lanes at all stations and signal priority

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Bus stations are level with buses and weather-protected, and provide bicycle parking

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142 stations in operation

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11 BRT corridors

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105 kilometers of dedicated busways

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1,215 articulated BRT buses, plus 515 feeder buses

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Flat fare of 1,700 Colombian pesos (\$0.90 as of 2013) doesn't penalize poorer residents who live far away from the city center

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## Results



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## Key statistics

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1,650,000 trips a day

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37,700 peak ridership (passengers/hour/direction)

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16-30 km/hour downtown peak hour speed

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32% decreased average travel time

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15% - 20% increase in property values on land less than 1 km away from TransMilenio

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44% sulphur dioxide decreased after 1 year of TransMilenio operations

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9% car owners shift to public transport because of car restrictions coupled with easy access to transport alternatives

## Lessons

### Place people first

A city must be built around the needs of its people, not cars. Improving public spaces for pedestrians and bicycle riders along the BRT corridors is one of the key factors behind TransMilenio's success. It has made the mass transit system safe and accessible to all.

### Plan a multimodal transport system

Integrating TransMilenio BRT with Cicloruta, a bicycle path network of over 300 km, increased the use of both the BRT and bicycles in the city, reducing the number of cars on the road, traffic congestion, and pollution from vehicles.

### Secure leadership support

Strong support from Mayor Peñalosa and succeeding mayors was crucial to the success of TransMilenio BRT and the city's mobility strategy. The TransMilenio has been expanded in phases since it began operations in 2000. As of 2013, construction of Phase III, which will add two BRT corridors and 20 km, was underway.

# Resources

- Bogota BRT
- Bogota: TransMilenio + E-taxis
- Institute for Transportation and Development Policy. 2013. ADB-CAF South-South Cooperation Virtual Study Tour Final Report. Unpublished.
- The BRT Planning Guide: BRT Annex 1: BRT System Comparisons
- World Bank Urban Transport - Bogota TransMilenio

## Related links

Case Study: How Ciclovía's Car-Free Days Give Bogotá Room to Breathe

Case Study: CicloRutas Transform Bogotá into a Bicycle-Friendly City



Institute for Transportation and Development Policy

This case study is from a series of virtual study tours created by The Institute for Transportation and Development Policy (ITDP) as part of a South-South Cooperation Project that facilitates the sharing of best practices in sustainable transport.

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