Bogotá, Colombia

Building a plan to transform non-motorized transport in Bogotá

In recent years Bogotá has experienced a profound transformation towards non-motorized transport (NMT) in its infrastructure planning and policies. This case study provides background information on how these policies were implemented, how they have developed since their initial implementation in 1998, what obstacles were identified, how they were overcome and which lessons can be learned.

165 ICLEI Case Studies August 2013

Abstract

The transformation of Bogotá's urban transport has had various components, one of which is the implementation of bicycle-related infrastructure, policies and promotion strategies. The key issues for Bogotá have been integrating these policies into a wider sustainable urban transport context, adapting existing regulations and policies to a NMT-promoting agenda, and overcoming political barriers in order for projects and policies to have continuity between each political term of office. Various stakeholders have been involved in this process; and their participation has in fact been strengthened throughout the past decade.

The model used for work done in terms of urban planning in Bogotá, such as the Bike Path Master Plan can be replicated in cities with similar socio-economic characteristics: it can be realized with low budgets especially when compared with other heavy infrastructure projects.

Importance of the issue

The theme of non-motorized transport (NMT) policy is important in Bogotá because it provides a historical background to all the changes in transport policies and projects in the city. It is also very relevant globally as Bogotá provides an example to other cities interested in implementing similar policies. Bicycle-related developments in the city (e.g. the establishment of 350+ km of bike paths) have increased citizens' access to goods and services, reduced their travel times and improved their perception of their travel mode (bicycle use has increased from, 0.5% in 1998 to circa 5% in 2010).

In essence, bicycling is a transport mode that has the following advantages: it is environmentally friendly, cheap, efficient, fun and versatile. Although its use is recommended for short trips (about 4.5 km on average) it can be combined with other modes of transport for longer trips providing an excellent alternative to the private car. Furthermore, the physical exercise provided by using the bicycle enables a healthy lifestyle, by reducing heart disease etc. Bicycles consume much less public space than most other vehicles, and by virtue of the low purchase and maintenance costs, it is also a mode of transport that is more accessible to vulnerable groups (elderly and children) or the poor strata of the population.

Population

7,463,592 (2011)

Land area

1,776 km2 (total area) and 307 km2 (urban area)

Municipal budget

9.7 billion US$ (2011)

The City of Bogotá is a member of ICLEI since December 2009.

Case Study

The city context

Bogotá is the capital and largest city of Colombia. Motorization in the city, as in the rest of the country, has reached record levels since 2006 (every year a new local record is broken in terms of car sales). The Urban Development Institute (IDU) and the Secretary of Mobility (SDM) are in charge of all mobility projects (IDU in charge of Infrastructure development, SDM in charge of regulation and traffic), and in recent years the city has had various transport projects which have been mostly directed towards increasing public transport. The TransMilenio bus rapid transit (BRT) system is one example, in addition to increased efforts to develop non-motorized transport .

During the period reviewed here, from 1998-2011, the city has had 4 different mayors (Enrique Peñalosa 1998-2000, Antanas Mockus 2001-2003, Luis Garzón 2004-2007 and Samuel Moreno 2008-2011). Since 1998, the city has undergone a complete transformation of its public space (i.e. destroyed or inexistent sidewalks were redeveloped, parks were built, dusty areas were transformed into dynamic public spaces).

Urban planning instruments

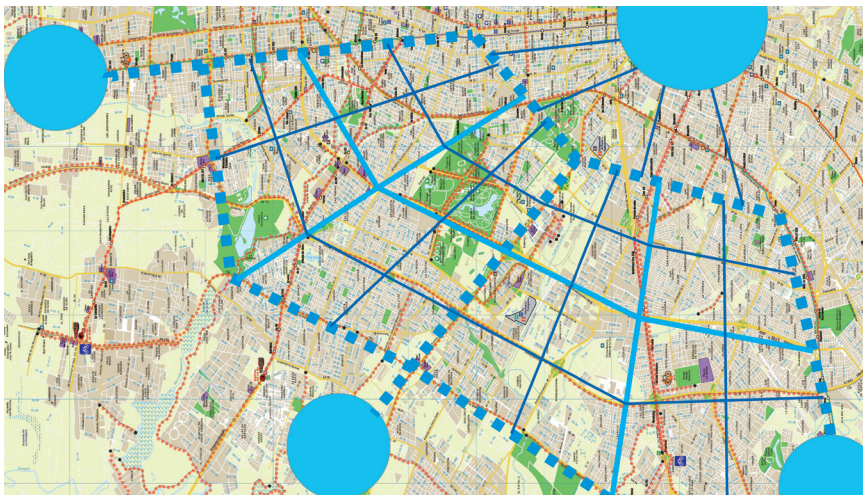
In the late 1990's new city regulations came into force in Bogotá and resulted in the development and provision of bicycle paths. The intention of these 'acts' was to highlight the most relevant aspects of bike path management contained in the following policy instruments:

- The Land Use Plan
- The Mobility Master Plan
- The Public Space Master Plan

Additionally, in 1998 the Urban Development Institute realized the need to formulate a Bike Path Master Plan. Even though this plan did not become part of the city regulations, it served as a technical foundation for building the bicycle paths project. The Bike Path Master Plan is divided in three parts: Diagnosis, Evaluation and Plan formulation.

In the diagnosis phase, planners identified the potential and ease associated with bicycle use as an alternative means of transportation and as a complement to existing public transport nodes. A network of bike roads was identified and integrated into the transport plans of Bogotá. During the evaluation, the feasibility study of the project was conducted, and the optimal network was defined among several alternative options. This was done according to criteria and indicators obtained from the diagnosis.

Source: IDU



Conceptualization of the bicycle path network for the Bike Path Master Plan

The formulation of the plan incorporated various components, such as the preparation of policies, a description of the system to the definition of the stages of implementation, the administrative/financial requirements and the indicators to measure the performance of the plan and the measures to operate it.

The network was designed in a grid with total coverage of the city, consisting in a main network, secondary and complementary routes (conceptualized as shown in the image below).

Bicycle policies in Bogotá, as other transport policies, have had a strong political influence. Mayors have been very proactive in promoting bicycle use and ensuring the construction of the necessary infrastructure.

Inter-institutional coordination

The implementation of the Bike Paths Master Plan was only possible thanks to the joint efforts of various law enforcement district entities (planning and mobility sectors) and utilities, along with strong corporate management.

Construction and maintenance of public works

Having decided on the implementation of the Bike Path Master Plan, a complex process of feasibility, design and construction of public infrastructure began, which allowed for the transformation of the urban space.

The formulation of the Bike Path Master Plan included the development of a bike path design manual. This included looking to build high-quality urban designs that offered complementary services such as parking for bicycles, street furniture and landscaping, to contribute to the environmental quality of the city. The IDU in charge of executing the public works acquired expertise in the design process and construction (including land management, environmental, social, network utilities, and other technical aspects).

To ensure the smooth operation of the network, investment of public funds was also necessary for the upkeep of the network. This was realized through a community service scheme of social work, where vulnerable sectors of the community can get involved and appointed to maintain the upkeep of this system.

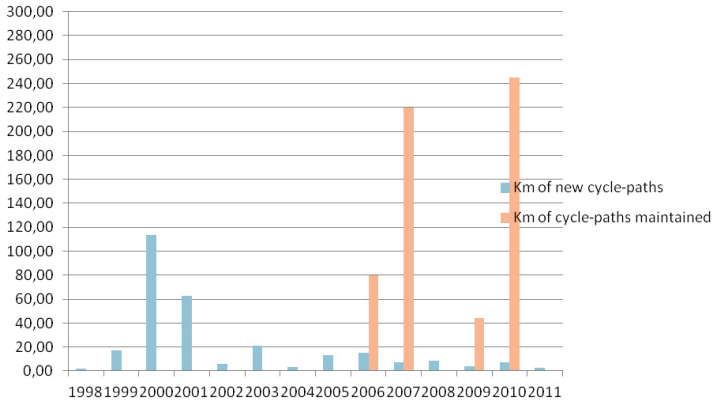
Results

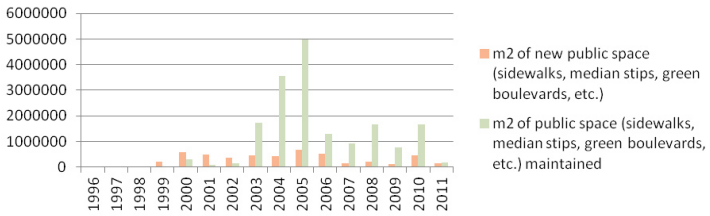
There was an increase of bicycle use (daily trips and reported travel mode) from 0.58% in 1996 to 4-5% in 2006 – (results obtained from Origin - Destination surveys and phone surveys). In a city where cycling was previously not an option people considered this a noteworthy achievement.

There have been significant improvements of infrastructure conditions for bicycle users (i.e. building 357 km of bikeways from 1998). As seen below, in the 1990s and (to a lesser degree) in the early 2000s the emphasis was on creating new cycle-paths, and from 2006 more effort was put in to maintain existing paths through the community service scheme.

There is now clearly a greater possibility for citizens to take the bicycle as a main mode of transport, for different uses according to the following figures:

There is also a growing citizen awareness and involvement in urban transport policy, something which was not previously evident before this decade.





According to the Study for the Transport Master Plan done by JICA, from the 14.6 millions of trips made by the citizens, 80.000 are made by bicycle, which represents the 5.8% of the total demand.

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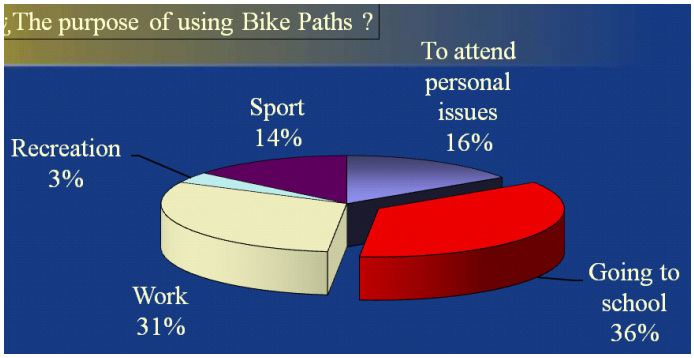

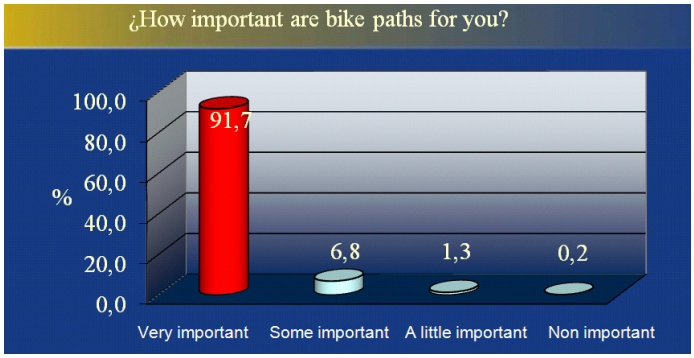

Results from Origin - Destination surveys and phone surveys

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Lessons Learned

- Political will and commitment is fundamental to promote non-motorized transport.
- Bicycle-related Institutions must be established to support the efforts being developed to promote non-motorized transport policies.
- Infrastructure is a crucial component in order to provide a basis for increased bicycle use for all user groups (including children and women).
- Regulations and policies related to bicycle use must be addressed to enhance the potential of infrastructure for bicycles.
- Citizens must be included in the development of bicycle use-related policies.
- Advocacy efforts are a very useful complement to infrastructure and policies that promote bicycle use in a city
- Maintenance of infrastructure is often undervalued in infrastructure development but is fundamental to include into NMT policies

Replication

Bogota, capital of a developing country has encouraged its public investment generating infrastructure for sustainable mobility through urban renewal that has occurred with the construction of TransMilenio and the bike paths, amongst others green economy iniatives.

These projects have generated citizens' confidence in public entities. Today Bogota is known for having a notable transport system covering the transport needs of the vast majority of citizens, however itstill needs improvements.. In a world crowded by the use of individual motorized transport, the implementation of mass transit and non-motorized systems is essential in order to develop sustainably.

To achieve this, one of the most important factors to encourage the use of bicycles as a daily mode of transport has been the implementation of a promotional plan, comparable to a marketing plan of any commercial product. Ambitious advertising campaigns, accompanied by an institutional presence have led to greater use of bike paths in Bogota. The promotional campaign has also generated benefits such as time and money savings, increased civil involvement and cooperation as well as an establishing an overall improvement in Bogota's transport infrastructure. Finally, the campaign has created awareness of health and environmental issues.

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A cycle-path in one of Bogota's main streets localized on the median strip, where there is no pedestrian transit. Since the median strip is wide, it also has big green spaces on each side of the cycle-path with trees.

Budget and Finances

The average cost of a kilometer of a cycle-path built in Bogotá is US$ 600,000 while the cost of a kilometer of a 30 meters wide road (including public utility networks) is about US$ 6,500,000

The construction of cycle paths resulted in spending over US$ 200 million. In terms of maintenance; the city has spent approximately USS$ 560,000 since 1998 to 2008:

However, in most cases it is difficult to know precisely the investment since the construction of bicycle paths also includes other interventions such as renewal of networks for public utilities, construction of sidewalks, etc.

Investment has been done exclusively with public resources from the municipality of the city where the main sources of income are fuel (gasoline) surcharges and others such as the income from traffic tickets and land value tax The contribution from value tax is an actual duty from land properties, subject to a registration earmarked towards construction works, plans or a group of construction works of public interest. The duty is imposed on owners of those properties that benefited with the development of those works.

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Sources

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