

FACING THE ENVIRONMENTAL CHALLENGE

**THE TRANSFORMATION OF BOGOTA, COLOMBIA, 1995-2000:
INVESTING IN CITIZENSHIP AND URBAN MOBILITY**

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This article addresses the transformation of Bogota in recent years, concentrating on urban mobility. Despite the deep economic crisis and violence that Colombia continues to experience, the spatial, social, political, and economic structure of its capital city has undergone important changes. The first part presents the work of the administration of Mayor Antanas Mockus, who promoted a culture of citizenship. This resulted in a concentration on the analysis and understanding of problems and programs that made citizens reflect on the importance of changing their attitude and behavior in the urban setting. The second part deals with the administration of Mayor Enrique Penalosa, which was characterized by a high rate of investment and the rapid completion of an important number of infrastructure projects. These projects challenged the traditional city model. The last section offers considerations regarding the future of urban mobility, transport, and public space.

The Spatial, Economic, Social, and Political Transformation of Bogota

Although the changes in Bogota are most evident in spatial terms, the transformation has affected every dimension of life in the city.

Space

Despite the deep crisis in the construction sector^[i], the following physical aspects of Bogota have changed substantially: pedestrian zones, road infrastructure, especially the implementation of paths reserved exclusively for bicycles, the revitalization of parks and sidewalks, and the implementation of the Transmilenio bus rapid transit system. This system, which has improved commuting for 10% of users of public transport, involves lanes dedicated exclusively to buses; new buses; and permanent, easily recognizable stops. The Transmilenio was created with public revenues, centralized control and infrastructure construction, and contracts with private companies. It has made urban transport during peak hours more agile, thereby reducing congestion and average commuting times. The “pico y placa” (“peak times and license plates”) program greatly restricts the use of private automobiles at peak times.

Society

Bogota has experienced important recent social changes. Coverage of public domestic services (water, electricity, telephones, and gas) has increased and efforts have been made to include the poorest neighborhoods. The administration of Enrique Penalosa (1998-2000) formalized the provision of water, electricity, and paved roads to 316 mostly low-income neighborhoods, and invested 1.3 trillion pesos (US \$800 million) which benefited 650,000 marginalized persons. Resources for public education doubled and the number of youth attending school rose by 140,000 students, a 30% increase. Regarding safety, the number of violent deaths fell by 42%. This is one of the most important successes of the municipal government because it was achieved primarily through education, not through repressive policies of “zero tolerance.” Further, the administration of Antanas Mockus (1995-1997) changed the mentality of the population and created a culture of citizenship, enabling the subsequent Penalosa administration to enforce measures like the obligatory use of seatbelts and restrictions on automobile usage.

Economy

Revenues and public investment went up under Mayor Mockus and Mayor Penalosa. In the last years of the 1990s, Bogota doubled its tax revenues, credit qualifications for internal debt improved considerably, and internal debt also doubled. Between 1997 and 2000 total public sector income increased from 1.883 to 3.692 trillion pesos (US \$1.255 billion to US \$2.461 billion). The strengthening of public sector revenue was the result of an increase in the gasoline tax, the application of an enforcement campaign to reduce tax evasion, updating information for real estate taxes, simplification of some taxes, raising real estate tax assessments to reflect the benefits from public infrastructure investments, and readjustment of public service tariffs. In addition, the national government paid 52% of the costs of building and operating the Transmilenio bus system. Increasing the gasoline tax from 14% to 20% generated 30 billion pesos (US \$20 million) annually, providing funds for investment in transit (road networks and public transport). The successful enforcement campaign against tax evasion raised revenues by 62 billion pesos in 1999 and 70 billion pesos in 2000 (US \$41 million and US \$46 million). Updating the real estate tax system increased the real property tax base by 40% in two years. The municipality received an additional 970 billion pesos (US \$646 million) by reducing capital in the Empresa de Telecomunicaciones de Bogota (Telecommunications Company of Bogota). One of the main successes of fiscal management was the substantial reduction in operating costs that provided the municipality more money for investment. Until 1994 more than 45% of the municipal budget was used for operating costs, and in 1992 it was 52%. This number began decreasing in 1995, and in 1999 it was down to 20% of the total budget. On the other hand, capital investment rose from 30% of the municipal budget in 1992 to 75% in 1999.

Politics

In the political sphere, the important changes took place in the behavior of both voters and elected officials. Voters showed their impatience with the traditional political class and bipartisan politics in municipal elections by casting votes for alternative candidates.

Mayor Mockus and Mayor Penalosa found themselves in a situation conducive to important changes in the political sphere. The administration prior to Mayor Mockus had succeeded in improving the finances of the city and most importantly, changed the city charter to give more independence to the mayor. The charter of Bogota, designed by Mayor Jaime Castro (1992-1994), made the mayor less dependent on the city council, which had traditionally acted as co-administrator of the city government^[ii]. Further, because Mayor Mockus and Mayor Penalosa came from non-traditional parties, they had complete freedom when choosing members of their administrations, enabling them to choose the people they felt were best qualified. Their teams were made up of a high percentage of young academics and professionals, including many women, moving from a politically motivated, clientelistic scheme to a much more ethical and professional way of working. This reduced corruption, increased staff efficiency, and improved the quality of contracts with the private sector. (Previous mayor's teams were habitually composed of politicians who had supported their campaigns.)

Reflection, 1995-1997: Culture and Education for Citizenship

On October 30, 1994, Antanas Mockus Sivickas was elected mayor with 64% of the votes (492,389), easily defeating his main opponent, Enrique Penalosa of the Colombian Liberal Party, who received 30%.

Antanas Mockus, a Colombian of Lithuanian ancestry, was 43 years old when he became Mayor on January 1, 1995. As an academic with master's degrees in mathematics and philosophy, he had no experience as a politician. The premise of his campaign was "No P" — no publicity,

politics, party, or “plata” (money). This eccentric campaign was the cheapest ever in Colombia; it cost a total of US \$8,000.

The Mockus administration's Plan of District Development for 1995-1997, “Formar Ciudad” (Educate the City), emphasized the following:

- Culture of citizenship
- Public space
- Environment
- Social progress
- Urban productivity
- Institutional legitimacy

Mayor Mockus defined the culture of citizenship as “the sum of habits, behaviors, actions and minimum common rules that generate a sense of belonging, facilitate harmony among citizens, and lead to respect for shared property and heritage and the recognition of citizens’ rights and duties.” This theme was the main focus of Mayor Mockus’ administration, which sought to bring about a new urban culture based on mutual respect between citizens through educational programs.

These new programs used symbolic, provocative, and humorous actions to teach citizens to reflect on the consequences of their behavior in urban life. These programs were often quite unpopular — particularly those that sought to reduce violence related to alcohol consumption, and injuries caused by fireworks. New laws prohibited the sale of alcoholic drinks after 1:00 am and the manufacture and commercialization of explosive powder for fireworks. There were campaigns to discourage gun ownership. These initiatives received approval ratings of 81%, 77%, and 92% for the restrictions regarding gunpowder, alcohol, and guns, respectively.

Mayor Mockus used educational group games as the main tool to establish a culture of “self-regulation,” consideration, and urban citizenship. These included:

- Cards, red on one side and white on the other, distributed among citizens and used as in football (soccer) games to show approval or disapproval of actions — particularly of car drivers
- Mimes in the streets that taught automobile drivers to respect pedestrian crossings, to use seatbelts, and to minimize the honking of horns
- Actors dressed as monks encouraging people to reflect on noise pollution
- Mass initiatives to promote tourism and proper payment of taxes

Residents of Bogota approved of these programs, giving them a rating of 7 out of 10 points. Sixty-one percent said citizen education was the administration’s most important initiative and 96% considered that these programs should continue.

Another innovation of Mayor Mockus’ administration was the Observatory of Urban Culture. The mission of this body was to analyze and evaluate municipal institutions and programs through a multi-disciplinary approach, thereby allowing the administration to make better-informed decisions. In order to improve the effectiveness of the Observatory of Urban Culture, its initially ambitious activities were later reduced to short, medium, and long term research projects. These included developing polls and questionnaires to obtain citizen opinion about policies and actions of the administration, creating and managing a database, and establishing a center of documentation.

Mayor Mockus reduced corruption in policing the transit system by transferring this task from the police reporting to the Secretary of Transit and Transport and shifting the responsibility for transit security to the Metropolitan Police, which depend directly on the National Police. A full 71% considered this to be the right decision and thought that the new institution was less corrupt, better organized, and more effective. The Mockus administration also undertook the important task of cutting the clientelistic relationships that had always existed between the legislative and executive branches in Bogota.

In March 1996 a telephone referendum showed that residents did not favor automobile restrictions, leading the administration to refrain from such measures. Paradoxically, traffic congestion was considered the city's worst problem in the mid-1990s. One might consider this plebiscite a serious mistake, considering that the objectives of the restrictions were not properly explained. Moreover, citizens in most cities around the world generally do not vote to restrict their use of automobiles.

Lastly, two studies on transport in Bogota, one by the Japanese agency of technical cooperation (JICA) and another by the consortium Ingetec S.A., Bechtel y Systra, were completed in 1997. The study by the Japanese agency proposed solutions completely mismatched to the economic realities of Colombia and placed emphasis on automobile transport, with plans for elevated, multilevel roads. The French-Colombian consortium recommended an integrated subway and bus system, but the proposed routes did not follow the main traffic arteries. The goal of this study seemed to be to justify the marketing of costly infrastructure. Although neither plan was implemented, both helped inform Mayor Penalosa's administration in configuring the Transmilenio.

Mayor Mockus' reputation suffered when he resigned one year before the end of his term to run for President of Colombia. Residents of Bogota felt betrayed by this political action, and when he resigned, 74% of Bogota citizens surveyed said that life in the city had not significantly improved under his leadership.

Action, 1998-2000: Investment in Large Public Works

In 1997 Enrique Penalosa won 48% of the votes (619,086), beating the populist Carlos Moreno De Caro, who received 31%. Enrique Penalosa ran as an independent candidate. He was 43 years old when he became mayor. His political background included representing the Liberal party in the assembly of Cundinamarca (Bogota's province); serving as an economic secretary to Colombia's President Virgilio Barco (1986-1990); serving as a congressman (1990); and running for mayor in 1995. His election as mayor in 1997 can be interpreted as a vote against the populism of his opponent.

Enrique Penalosa had studied economics, history, and public administration and had worked both as an academic and as a director in the US consulting firm of Arthur D. Little. His corporate management style of delegating projects to his young team (which included many women) facilitated their rapid completion.

Mayor Penalosa's plan of District Development for 1998-2000, "Por la Bogota que Queremos" (For the Bogota We Want) prioritized the following:

- De-marginalization (Inclusion of low-income and informal workers and residents)
- Social integration
- City on a human scale

- Mobility
- Urbanism and services
- Security and harmony among citizens
- Institutional efficiency

The Penalosa administration emphasized several major public investment projects:

- Integration of the mass transport system
- Construction and maintenance of roads
- Improvement and expansion of the municipal park system
- Improvement and expansion of the municipal library system

Mayor Penalosa invited residents of Bogota to imagine a different city, “a city that today seems utopian, with trees, bicycles, beautiful sidewalks, full of parks, with clean rivers, lakes, libraries, clean, egalitarian...” Although the mayor told the inhabitants of Bogota that they could build whatever they imagined, residents remained skeptical until the projects were completed.

Public space and transport were the main priorities of the Penalosa administration. Mayor Penalosa’s notion of an egalitarian city where citizens enjoy high quality public space seemed impossible even in 1999. Many of his projects, such as the installation of barriers designed to stop autos from parking on the sidewalks, received strong opposition. This parking practice was customary throughout the city, and it made life extremely difficult for pedestrians. Store owners, who saw the sidewalks as parking spaces for their businesses, reacted violently to the barriers and Mayor Penalosa was almost impeached. Mayor Penalosa’s popularity rose as his major public investment projects were implemented, and at the end of his term, a poll by the newspaper *El Espectador* reported that 40% of Bogota residents surveyed rated his administration as “excellent.”

No other administration in the 20th century worked as much on mobility and public space in Bogota. Mayor Penalosa’s main actions addressing these issues were designed to:

- improve public transport
- restrict private automobile use
- expand and improve bicycle paths
- enhance public space

The majority of the projects initiated by Mayor Penalosa were completed, started, or contracted during his term, 1998-2000. Indeed, the Penalosa administration claimed to have completed most of its original development plan. One of the few exceptions is the project for a city subway system. Mayor Penalosa’s Integrated System of Mass Transport included both “rigid” (subway) and “flexible” (Transmilenio) elements.

The Penalosa administration had a clear goal regarding public transport: a new system by December 31, 2000. Mayor Penalosa created a team external to his administration and obtained

resources through the United Nations Development Program (UNDP) to help create an investment fund.

The goal of the Transmilenio bus rapid transit system was to provide a well-organized, efficient means of public transport: an alternative to the chaotic independently operated bus service that dominated the city. These are often operated by overworked drivers, inefficient due to disorganization, and emit excessive amounts of exhaust, polluting the air. The municipality created the company Transmilenio S.A. to plan, organize, and construct the transportation infrastructure, as well as to supervise the bus service. The buses and drivers were contracted to private firms, though the revenues and finances are managed by Transmilenio S.A. The revenues are distributed as follows:

65% operators of the main artery

20% operators of the feeder routes

11% fare collection and banking

3% operating costs of Transmilenio S.A.

1% investment fund

The Transmilenio follows the model of Curitiba, Brazil, and Quito, Ecuador, with main arteries and feeder routes. On the main arteries, riders pay for access to an elevated platform, and on the feeder routes riders pay once they reach the main artery. Stations are fixed and 500 meters apart. With the new bus system, the municipality went from a passive position regarding public transport to a proactive one. The Transmilenio is widely regarded as an excellent bus system, providing well organized, fast, and comfortable service. In the Integrated System of Mass Transport, the Transmilenio covers the entire city, linking with subway and bicycle paths. Construction of the Transmilenio has six phases, and in January 2003 work on phase 2 was underway.

The Penalosa administration outlined a clear position regarding private automobiles; it regarded them as “the worst threat to quality of life of this city.” One of Mayor Penalosa’s main aims was to get automobile drivers and riders to use public transport. The “pico y placa” program considerably reduced congestion at peak times with a 40% reduction in private automobile use. Twice a week, private automobiles were prohibited from circulating: license plates ending in 1, 2, 3, and 4 were prohibited to circulate on Monday; 5, 6, 7, and 8 on Tuesday; 9, 0, 1, and 2 on Wednesday; 3, 4, 5, and 6 on Thursday; and 7, 8, 9, and 0 on Friday.

In addition to this measure, the Penalosa administration invited Bogota residents to imagine how the city would be without cars. On February 29, 2000, Bogota held its first (and the world’s largest) Car Free Day. It proved to be so popular that citizens voted in a citywide referendum to make it an annual event.

Mayor Penalosa’s Master Plan of Bicycle Paths was originally going to be 350 kilometers long. Approximately 270 kilometers were completed by January 2003. This is the largest network in Latin America and the developing world. The cost (more than US \$46 million through 2002), was high, but the technical achievements were impressive; most of the 105 kilometers completed during Mayor Penalosa’s administration were built on difficult terrain.

Public space was greatly improved from 1998-2000. It went, according to Mayor Penalosa, from “being nobody’s place, without serious attention of the administration, appropriated for anyone’s

private use and without any consideration for human beings, to become the space *par excellence* of the city". The Defense of Public Space office was created to recover space that had been illegally occupied, and space for pedestrians was substantially renovated through improvements in sidewalks, traffic signals, lighting, and the planting of trees. This included the recovery of 338,297 square meters, and the construction of 147,000 square meters, of space under bridges (these spaces previously had been badly planned and inhospitable) and 432,000 square meters of sidewalks — a total of approximately 917,000 square meters of public space. The Penalosa administration restored, improved, and maintained 1,034 parks, or 54% of the green space in the city. For a cost of 212 billion pesos (about US \$100 million) the city government planted almost 70,000 trees, installed 183,651 planters, and added greenery to 202 kilometers of roadsides and 280 hectares of parks.

The Future: A National, Integral, and Multimodal Challenge

Even as Bogota is experiencing a renaissance, it is important to remember that it is the capital of a country that is in crisis. The future of Bogota depends on the future of Colombia: ending the civil war, the fiscal crisis, and the economic recession.

In addition to the maintenance of the projects already implemented, the challenges for improving urban transport in Bogota currently are:

1. Support mobility for the majority of the population by giving preference to mass transit.
2. Consolidate a multimodal transport system for the metropolitan area and urbanized region.
3. Link transport planning to urban land-use planning.
4. Reform and strengthen the agencies responsible for transport, public space, and urban planning.
5. Stabilize or discourage automobile usage.
6. Create an integrated policy for automobile parking.
7. Create strategies for communication, participation, and involvement by citizens.

1. Many countries have proved that mass transport creates greater benefits for the majority of society in social, economic, environmental, and urban terms. Evaluations show that mass transport is seven to 10 times less costly than individual automobile transport. Political leaders and citizens must insist on both elements of the Integrated System of Mass Transport, the subway and the Transmilenio buses, when discussing the future of transport in Bogota.

2. The analysis of transport in Bogota cannot be limited to the districts of the city. Although there is no officially defined metropolitan region, the city's influence on regional development must be taken into account, especially regarding the area to the west, the Sabana (Savannah) de Bogota. Although the challenge of integration with surrounding cities is much more political than technical, leaders should begin to articulate an integrated scheme of multimodal metropolitan transport.

3. The "Plan de Ordenamiento Territorial" (Territorial Plan) that covers the period 2000-2010 originally included the entire Integrated System of Mass Transport, thereby linking transport planning and urban land-use planning. However, the validity of the territorial plan was reduced because construction of the subway will not begin during this period. Further, the Transmilenio

bus system was implemented without a clear integration into a larger urban strategy. Mass transport and territorial plans must fit into a clearly articulated vision of the city and region. The priority of efficient, non-automobile transport in this vision depends on the importance that the different actors — administrators, planners, politicians, media, and citizens — assign to it.

4. Two valid options for the reform and reinforcement of the entities responsible for planning, organizing, managing, and regulating mass transport, public space, and urban growth are creating a single agency or continuing with various bodies. The most important considerations regarding the entity or entities are means and resources. In order to be effective, it or they must be able to maneuver without too many obstacles and have sufficient funding, as in the case of Transmilenio.

5. The private automobile must be rationalized and discouraged beyond the “Pico y Placa” program; this program might make the car more attractive by improving traffic conditions. Charging for use of roads and clearly defining a parking policy will better reflect the real cost of the car to society. In addition, charging for road use and car parking can be additional sources of revenue for an integrated, multimodal, metropolitan transport system.

6. Dealing with automobile parking is urgent in Bogota because the restoration of sidewalks has reduced available parking for businesses. However, this matter is also complex; additional parking infrastructure should not be built on a mass scale, since the car should be discouraged. Nor can parking spaces be much farther reduced (as in European cities), due to safety considerations in the city. Another important challenge is the regulation of “informal” parking areas that are set up in streets and empty lots.

7. Citizen participation in programs and projects must go beyond presenting proposals. Programs must acquire information that facilitates a truly participatory and constructive dialogue leading to more effective and beneficial changes. Reinforcing civic organizations such as the Veeduría Distrital (District Supervisory) is one way to increase citizen participation.

Multimodality: the Challenge to Balance Means of Transport

Consolidating a multimodal transport system for the metropolitan region represents one of the largest challenges for Bogota. The elements of such a system include:

- Subway
- Transmilenio buses
- Non-motorized transport
- Regional trains
- Public space
- Automobiles

The subway is a fundamental element of the Integrated System of Mass Transport. Although the contract for its construction will not be signed in the next 10 or 15 years, the population must insist on a subway. Without it, mobility will become increasingly difficult and eventually collapse, the city will lose competitively, and tax revenues will be reduced, leading to a serious deterioration of quality of life in Bogota. Several authors agree that a city of its size needs a high capacity transport system (60,000 to 90,000 passengers an hour in each direction). Further, a

subway system implies a high level of quality of life and socioeconomic development in a city; it reduces inequality, protects the environment, and reduces time and money spent on transport.

The cost and time of implementing the Transmilenio bus infrastructure is low, making it a good option for public transport in Bogota. However, this system on its own cannot meet the transport needs of the city, which is growing at an annual rate of 3%. The Transmilenio must work together with the subway, as articulated in the Integrated System of Mass Transport.

Although there is an average of one bicycle per three families, bicycles have been absent from transport studies of Bogota. Residents currently use bicycles frequently for leisure, especially on Sundays during the "ciclo-via," when many roads are closed to motorized vehicles. Although this event is the largest of its kind worldwide and often attracts more than two million participants, when it comes to commuting to work, residents perceive bicycles as a less important mode of transport and a sign of economic destitution. Recent educational campaigns to change this perception have had important effects and must be continued to reach more of the population. Only when members of all social classes use bicycles will the notion of the bicycle as a step below motorization (a common idea in the developing world) be erased. When Mayor Penalosa and members of his administration periodically rode bicycles to work, they helped to destigmatize the bicycle to a large degree.^[iii] As the failure of bicycle lanes in Paris and other cities in the 1980s has taught us, the same investment made in infrastructure must be made in education, supervision, and safety.

A regional inter-urban commuter train system is currently being studied, and this is an excellent opportunity to articulate a solid metropolitan plan of transport. The city of Bogota should support this effort since it is an opportunity to organize the many bus lines of surrounding cities that pass through the capital.

The renovation and building of sidewalks in Bogota was an important achievement of Mayor Penalosa's administration, and the process of recovering space for pedestrians must continue throughout the city, in favor of the person, not the automobile. Not only sidewalks and parks, but also highways, roads, and parking spaces must be considered for potential use by various modes of transport (automobile, bicycle, walking). Proper reflection and action regarding public space requires a multidisciplinary approach.

The automobile is a necessary evil for all cities, and it is important to remember its advantages and disadvantages in the urban setting. Because the car is not convenient for commuting during peak times, its use must be rationalized. The environmental damage of automobiles provides compelling logic for further rationalization, particularly in the case of Bogota, where the high altitude — 2600 meters above sea level — impedes the efficient functioning of internal combustion engines.

Reflection, Action, and Continuity for Further Change

The success in Bogota can be attributed in part to the synergy between the educational campaign of Mayor Mockus and the action of Mayor Penalosa. However, Mayor Penalosa almost entirely eliminated the programs of social education initiated by his predecessor, despite the desire of the population to maintain them — 91% according to one poll. The rupture between reflection and action was intense, and both administrations could be criticized in these respects: Mayor Mockus, for excessive reflection and too little action; and Mayor Penalosa for too little reflection on his many actions.

The great achievements of both mayors were the result of a new kind of government centered on issues rather than party politics or ideology. Both leaders acted ideologically as right, left, and center, and at times went to extreme positions. Antanas Mockus and Enrique Penalosa

transformed Bogota, one of the most chaotic cities in the world, to a model of urban development and transport. Various agencies in the United Nations have recognized the vast improvements in infrastructure and administration and the reduction in violence. United States and Swedish international development organizations gave prestigious prizes to the public library system and the Transmilenio bus system, respectively. Residents feel a new sense of ownership, belonging, and pride in the city, and manifest this in events such as "ciclo-vía nocturna" (night ciclo-vía), an evening in December 2002 when more than 3 million people celebrated in the streets.

^[i]Since the mid-1990s, construction in Bogota and throughout Colombia has undergone a deep crisis. This is due to the recession in the Colombian economy and problems related to financing. Residential construction stopped completely at the end of 2000.

^[ii]Although Mayor Jaime Castro was successful in legal planning and tax reform, his plan to institute a new transport system did not come to fruition. "Metrobus," proposed by Volvo and the finance corporation of transport, was similar to the "Autobus" in Brazil. The largest impediment to implementing the plan was difficulty in financing the debt.

^[iii]Mayor Antanas Mockus also rode his bicycle during his second term, beginning in January 2001 until the end of 2003.

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