## **TRANSMILENIO SYSTEM**

#### (BUS RAPID TRANSIT SYSTEM IN BOGOTA – COLOMBIA)

Urban transportation for Mediterranean developing countries

Casablanca, 21st January 2008

## **TRANSMILENIO**

- 1. BOGOTA TRANSPORT INFORMATION
- 2. BOGOTA'S TRANSPORT DESIGN
- 3. URBAN DEVELOPMENT PLAN
- 4. RECENT CHANCHES IN BOGOTA
- 5. DIFFICULTIES

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#### **BOGOTÁ D.C. - COLOMBIA**



- Average temperature is 17° Celsius.
- Altitude: 2.600 meters over the sea level.
- Extension: 37.414 ha aprox.
- Current Population: 7'000.000 inhabitants, 15% of the country.
- Growth rate per year: 2.5%



#### **BOGOTÁ's TRANSPORT FACTS**

#### **Traditional Transport System**

- 20.065 buses
- 4.112.214 journeys per day
- Rush Hour Speed 18 Km/hr
- 509 routes

#### **Private Cars**

- 1.000.000 vehicles
- 1.394.301 journeys per day
- Uses 80% of the network

#### **Individual Public Transport**

- 45.724 Yellow Cabs
- 350.130 Journeys per day



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#### **URBAN DESIGN – 1998 TRANSPORT FACTS**

- Long routes for traditional public transport service, old buses and low load factor
- Average time per commute, 1.5 hours per direction
- 95% of the road network are for private transport, it represents 19% of the journeys (1´000.000 cars)
- 70% of the air pollution in the city is generated by vehicles



#### **URBAN DESIGN – MOBILITY STRATEGY**



- 1. PUBLIC SPACE RECUPERATION.
- 2. BICYCLE
- 3. DISCOURAGE PRIVATE CAR USE
- 4. MASS TRANSPORTATION

#### **1. PUBLIC SPACE RECUPERATION**

- 285.500 mt2 constructed in walkways, green space, road dividers, sidewalks.
- 3.149 neigborhood parks
- 323 pocket parks
- 11 metropolitan parks









#### 2. BICYCLE

- Bikeway network
- 350 Km. of bikeways constructed.
- Bicycle utilization grows from 1% in 1995 to 4% today.
- 1.498 bike parks







![](_page_11_Picture_8.jpeg)

![](_page_12_Figure_0.jpeg)

![](_page_13_Picture_0.jpeg)

#### 3. DISCOURAGE PRIVATE CAR USE

![](_page_14_Picture_1.jpeg)

- Restriction during peak hours (6-9 AM, 4-7 PM) using plate numbers for 40% of the private automobiles.
- 20% gasoline surcharge (revenue applied to transit infrastructure and road maintenance)
- Car free weekday on February (approved by popular vote)

#### 4. MASS TRANSPORT SYSTEM

![](_page_15_Picture_1.jpeg)

- 18.000 direct jobs during the construction.
- More than 6.000 direct jobs in operation.
- Just 280 jobs are from the government.

#### 4. MASS TRANSPORT SYSTEM

![](_page_16_Picture_1.jpeg)

![](_page_16_Picture_2.jpeg)

#### Si99

- Expres de Futuro
- Ciudad Movil
- Metrobus
- Transmasivo
- Si02
- Connexion Movil

Accionista	% Part
Alcaldia Mayor de bogotá	70.05%
FONDATT	19.97%
Instituto de Desarrollo Urbano	9.96%
Instituto Distrital de Cultura y turimo	0.01%
Metrovivienda	0.01%
Total Capital social	100.00%

![](_page_16_Picture_11.jpeg)

# Alnorte Sidauto Uribe y Uribe Alcón Codatermil ETMA

![](_page_16_Picture_13.jpeg)

- Angelcom
- •Unión Temporal Fase 2

#### 4. MASS TRANSPORT SYSTEM

#### TRANSMILENIO SYSTEM

- Trunk ways on the left side of the road and segregated from private transport
- Trunk way stations every 700 meters
- Articulated buses capacity: 160 passengers
- 7 passengers per square meter on articulated buses
- Feeder buses share neighborhood streets with private cars, taxis, other public transport, etc.
- Feeder bus stops every 400 meters
- Feeder buses capacity: 90 passengers
- Stations on trunk corridors, allows entrance to everyone (same level without steps)
- Pedestrian overpasses with ramps

#### **TRANSMILENIO SYSTEM - STATISTICS**

![](_page_18_Figure_1.jpeg)

![](_page_19_Picture_0.jpeg)

![](_page_20_Picture_0.jpeg)

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#### URBAN DEVELOPMENT PLAN

The Urban Development plan was created in year 2000. It is the guideline of the city, and contains the general rules to use the land. Also, project the urban expansion of the city between year 2001 to 2010.

The Plan establishes different systems to built the urban infrastructure such as:

- Road System
- <u>Transport System</u>
- City Equipment System
- Public Space System
- Housing System
- Water Service System
- Etc.

#### **URBAN DEVELOPMENT PLAN – MOBILITY SYSTEM**

![](_page_23_Figure_1.jpeg)

The Urban Development plan focus it efforts on specific zones of the city that have a high economic activity, potential to develop housing projects and offer more public services.

The city is divided in Activity Centres in order to organize the **mobility system** and integrate urban projects.

#### **URBAN DEVELOPMENT PLAN – MOBILITY SYSTEM**

#### Components of the Mobility System:

Roads	
Transport	
Control	
Sidewalks & Pedestrian Space	

#### **URBAN DEVELOPMENT PLAN – MOBILITY RESULTS**

Once the Plan has been structured, public companies join efforts in order to develop the city.

Bogotá D.C. today:

![](_page_25_Picture_3.jpeg)

#### **MOBILITY MASTER PLAN**

- Signed & Published by the city major on august 15th / 2006
- Complement of the Urban Development Plan in terms of Mobility.
- It is the fundamental document to organize the city in the mobility aspects.
- Project the sector resources and investment that are going to be use in the short, medium and long term, according to the development and growth.

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#### **CENTS WAR END**

![](_page_28_Picture_1.jpeg)

Fare is collected by the bus driver

Smart cards

#### RENOVATION AND RECUPERACION OF THE PUBLIC SPACE

![](_page_29_Picture_1.jpeg)

#### **TRAVEL TIME REDUCCION**

![](_page_30_Picture_1.jpeg)

![](_page_30_Picture_2.jpeg)

TransMilenio System reduces the Travel Time by 23 minutes

#### TRANSMILENIO CULTURE ACCIDENTS REDUCTION

![](_page_31_Picture_1.jpeg)

![](_page_31_Picture_2.jpeg)

#### ACCESIBILITY FOR EVERYONE

![](_page_32_Picture_1.jpeg)

![](_page_32_Picture_2.jpeg)

#### PERMANENT MAINTENANCE SPECIALIZED MAINTENANCE YARDS

![](_page_33_Picture_1.jpeg)

![](_page_33_Picture_2.jpeg)

#### **PROGRAMMING AND CONTROL SOFTWARE**

![](_page_34_Picture_1.jpeg)

#### TransMilenio's Control Center

![](_page_34_Figure_3.jpeg)

![](_page_34_Figure_4.jpeg)

![](_page_34_Figure_5.jpeg)

#### **EFFICIENT USE OF THE FLEET**

**PASSENGERS PER HOUR** 

![](_page_35_Figure_2.jpeg)

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#### DIFFICULTIES

- Over capacity on the buses
- Bad service on ticket sales
- Full capacity on stations

![](_page_37_Picture_4.jpeg)

![](_page_37_Picture_5.jpeg)

![](_page_37_Picture_6.jpeg)

![](_page_38_Picture_0.jpeg)

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