Metro de Panama

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Presentation to Ga Tech.
Central America & Panama
Population & Employment 2010 - 2035

Population Republica de Panamá: 3.40 - 4.82 million
Population Metropolitan area de Panamá: 1.60 - 2.88 million
Employment Metropolitan area: 543 - 1.03 million

GROWTH GDP
2007: 11.2 %
2008: 8.8 %
2009: 3.0 %
2010: 7.6 %
2011: 11.5 %
Colonial Panama
Modern Panama
Paitilla Residential Condos
Dense city by the ocean, spread out the rest.
PANAMA, MODERN CITY WITH THE WORST PUBLIC TRANSPORTATION SYSTEM
PROBLEMS of MOBILITY

1. Dispersion of the urban structure to the periphery. Long and pendular trips (average 16 km)

2. Traffic bottlenecks. Average trip is 1-1/4 hour

3. Lack of Order. Competition for Passangers-Anarchy

4. Traffic network with little capacity and connectivity. In the center, Narrow avenues and streets. Narrow sidewalks.

5. Rising demand (2% interannual)

6. Lack of alternatives to the car. So, High growth of automobiles (60,000 this year 2012)
Public Transportation Demand 2009

Entering the City: 6 – 7 a.m. Per hour

NORTE
S. Miguelito-Alcalde Diaz

Year 2009
Public Transportation Demand 2035

Entering: 6 – 7 a.m. Per hour

Year 2035

S. Miguelito-Alcalde Díaz

NORTE

15 mil

6 mil

9 mil

34 mil

49 mil

21 mil

10 mil

18 mil

14 mil

52 mil

10 mil
DUAL PUBLIC TRANSPORT
METRO and METROBUS

- METROBUS will replace the dreaded “Red Devils”.
- Will Feed Metro System
- Integrated System
- Metro is State owned, Metrobus is private
- Both are good alternatives to the car (partially and depending on time and destination)

Metrobus entered partial service in 2011
Metro line 1 starts 2014
RED DEVILS!
Technology Alternatives

• Bus Rapid Transit (BRT)
• Tramway or light train by surface
• Monorail
• Metro

**BRT and Tramway:**

a) Road space within the city totally insufficient for this solution, especially in the main corridor.
b) Commercial speed substantially slower than rail systems in their own path.
c) Tramway did not meet future capacity growth.
d) BRT also limited, in road space and capacity long term for the main corridor.

**Monorail:**

a) Good system, but dependent on one supplier.
b) Not good for long subterranean trips. Elevated not good for center of the city
Chosen system is a full Metro both underground and Elevated, in the appropriate areas.

Tunneling through the center of the city to give the best service with no noise, neither space gobbling on the streets above or the ugly visual effects in the financial center.

Moves people essentially north-south
LINE1 Metro de Panama

Fase 1: Los Andes – Albrook. 14 km
Master Network for the Future (4 lines) min.
ALSTOM TRAIN for METRO DE PANAMÁ
TUNNEL 8.70m INTERNAL DIAMETER
EPB TUNNELING MACHINES

TWO MACHINES FINISHING AT CENTRAL MEETING POINT

STARTED FEB 15, 2012
ELEVATED STRUCTURE

DOUBLE "U" PREFAB SYSTEM
ELEVATED STRUCTURE RENDERING
5th of May Station 60 % completed
Ventilation and Fire Emergency Exit
Elevated Stage Columns
North Tunnel Entrance
New City Water Line

54 Inch
18.7 kms Relocation of Electrical Lines
5.7 kms New Electrical Lines
9.8 kms New water supply lines
2.4 kms Sewer Lines
3.6 kms Storm Drainage lines
70 kms Phone Lines
98 kms Fiber Optic
Employment by Contractors

More than 90% Panamanian Workers

21 Nationalities
8 Languages

TOTAL 1,410
5,368 Indirect Employment
TOTAL ESTIMATED COST - US$1,88 Billion

**WORKS CONTRACTED OUTSIDE THE MAIN CONTRACT**
- Engaging local construction companies for warehouses etc.
- Elevators and escalators.
- To save overhead and profit costs.

**ADDITIONAL EXPENSES:**
- Public Compensations, Indemnizations, Contingencies, Land Purchases.
- Price Increases, Maintenance yard, Drainage Canal
- Public Utilities
- New Marañón Station
- New Curundu Station
- Future Ingenio Station infra.
- New water line

**TOTAL INVESTMENT BREAKDOWN**
Million US$
FINANCIAMIENTO DEL PROYECTO

US$400 MM
US$100 MM
EU 300 MM
US$270 MM
US$75 MM
US$450 MM
Treasury Notes
Towards the Panama City of the 21st Century

February 2014

THANK YOU