Sustainable Transport in LAC: Successes and Future Challenges

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LAC Region

- Roughly 600 million people
- Most highly urbanized area in the developing world
  - 75% in cities
- 5.1 percent economic growth in 2007
- High inequality
  - Top 10% has 41% of wealth
  - Bottom 10% has 1%

LAC – Current Situation

- **Transport sector in LAC accounts for roughly 1/3 of CO2 emissions and is the fastest growing sector**
- **VKT is growing quickly**
- **On average, car ownership in LAC is roughly 100 vehicles per 1000 inhabitants**
  - **Rate is much higher in major urban areas**

Modal Split in Latin America	
Private automobile	**21%**
Motorcycle	**1%**
Taxi	**2%**
Conventional bus	**39%**
Bus rapid transit	**4%**
Walk	**25%**
Bicycle	**1%**

Source: Composite of major cities compiled by the World Bank

Transport sector also is the major source of air pollution in Latin American cities

- **Mexico City**
  - **Vehicles are responsible for**
    - **99% of CO**
    - **81% of NOx**
    - **46% of VOC's**
    - **30% of SO2**
- **Other metropolitan areas generally are similar**

Source: Gobierno del Distrito Federal, Secretarı´a del Medio Ambiente 2004*b*

Congestion is among the worst in the World

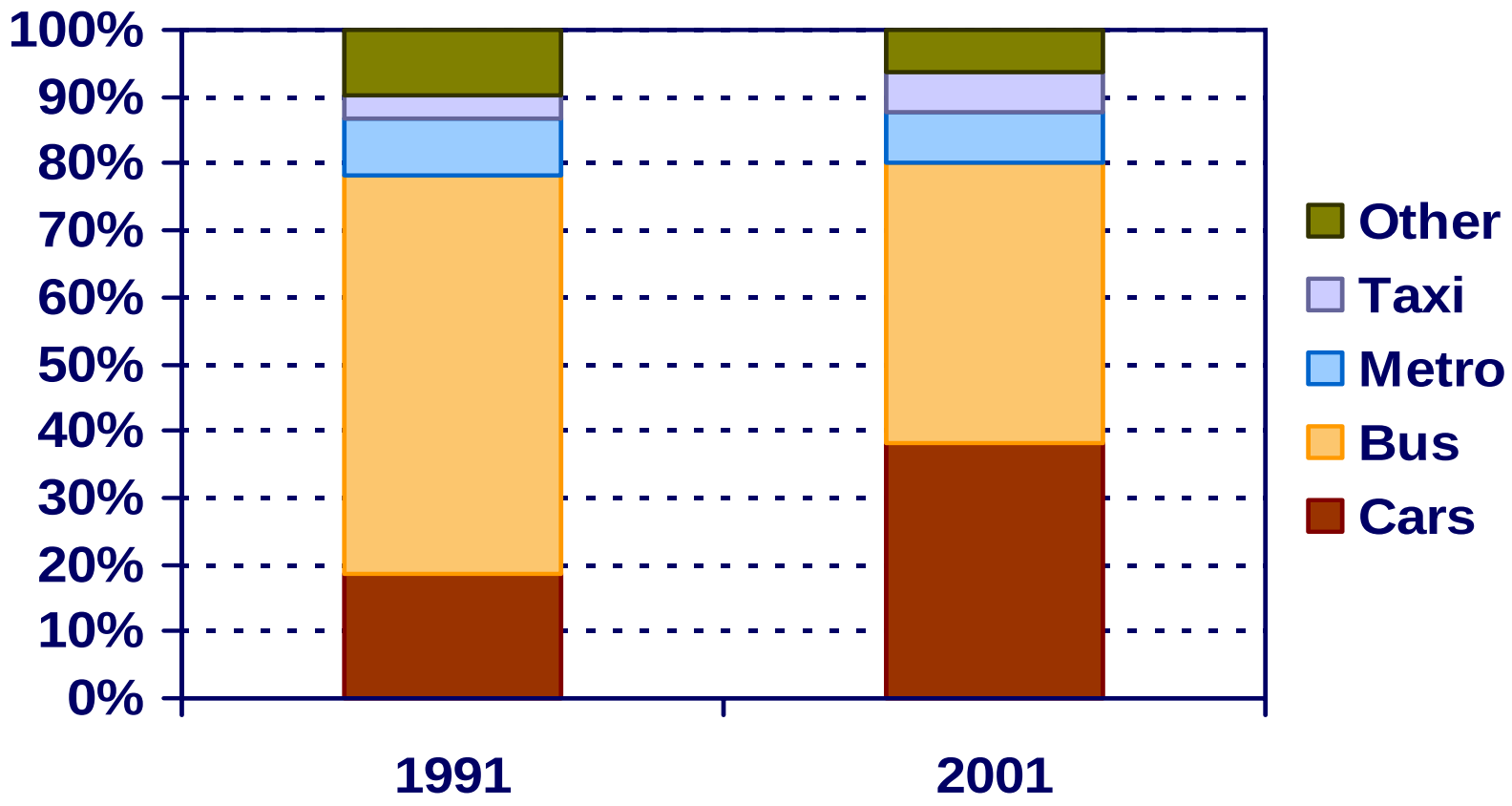
- **Sao Paolo**
  - **37 percent increase in number of registered vehicles since 2003**
  - **A record 266 km of gridlock on May 9, 2006**
  - **Average daily commute: 1 hour, 40 minutes**
  - **Economic cost: 4.1 billion reais annually**

Source: *Sao Paulo Traffic Jams Mean Lost Business, Stress, Helicopters*, Bloomberg, July 14, 2008

Mexico City

- 4 million cars
  - Doubled in the last 15 years, despite economic crisis
  - 300,000 cars added annually, but only 30,000 retired
- Average peak trip speed: under 10 km/hour
- Average trip time: 1 - 1.5 hours
- But: only 16 percent of trips are by car!
  - 55 percent by bus

Santiago de Chile: Transport Modal Share



The trend toward urbanization and motorization is likely to continue

- **By 2030**
  - **Additional 175 million people living in urban areas.**
  - **9 of 10 people living in cities**
  - **Vehicle fleet projected to triple**
  - **Energy use expected to double**
    - **Most energy increase related to motorized transportation**

Source: UNHABITAT, 2001

Car and light truck sales are booming

- **Brazil**
  - 2.46 million new vehicles sold in 2007, a new record
  - 2.88 million new vehicles expected to be sold in 2008, a 17% increase
- **Peru**
  - 55 percent increase in new vehicles sold in 2007 v. 2006

Source: Automotive News; Mexican Automotive Manufacturers Association

Despite Motorization Trend, LAC Serves as an SUT Laboratory

- **Key successes**
  - **Improved public transport**
  - **Adoption of cleaner vehicle standards and technologies in some countries (e.g., Mex., Chile, Brazil)**
  - **Fuels**
    - **Phase-out of leaded gasoline**
    - **Goal to reduce sulfur to 50 ppm in South America by 2012**
      - Chile has already achieved this goal
  - **Land use (mostly Curitiba)**
  - **Promising developments on NMT**
  - **Demand management**
    - **Car free days**
    - **Access restrictions**

Good Results Are Possible!

- **Bogota:**
  - **7 million inhabitants**
  - **Area: 380 square km**
  - **Density: 18,400 people per square km**
- **TransMilenio**
  - **84 km trunk lines**
    - **1,021 articulated buses**
  - **504 km feeders**
    - **385 feeder buses**
  - **114 stations**
    - **1,498 bicycle parking spaces**

Good Results Are Possible!

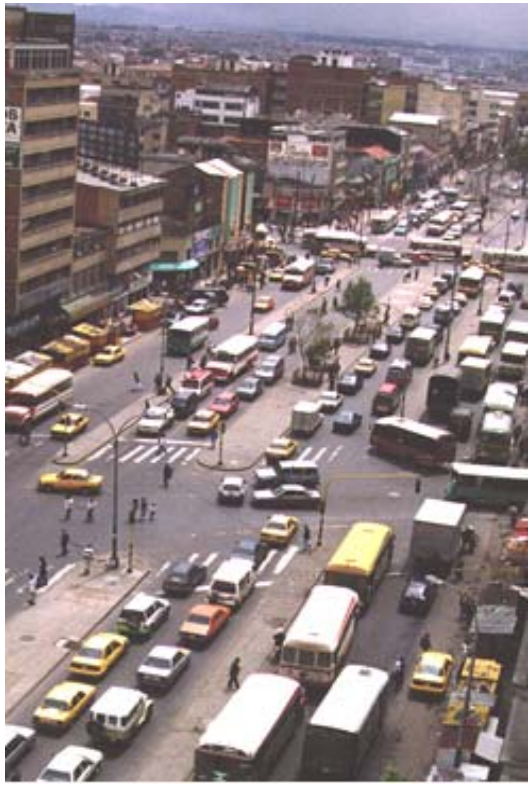
- 1.4 million trips per day
- 70,109 tons CO2 eq. reduced in 2007
- Positive land use impacts
  - For every 5 minutes closer to a Transmilenio station
    - Real estate prices increase up to 0.38%
    - Rents increase up to 9.3%

Source: TransMilenio S.A., Rodriguez and Targa (2004); Mendieta and Perdomo (2007).

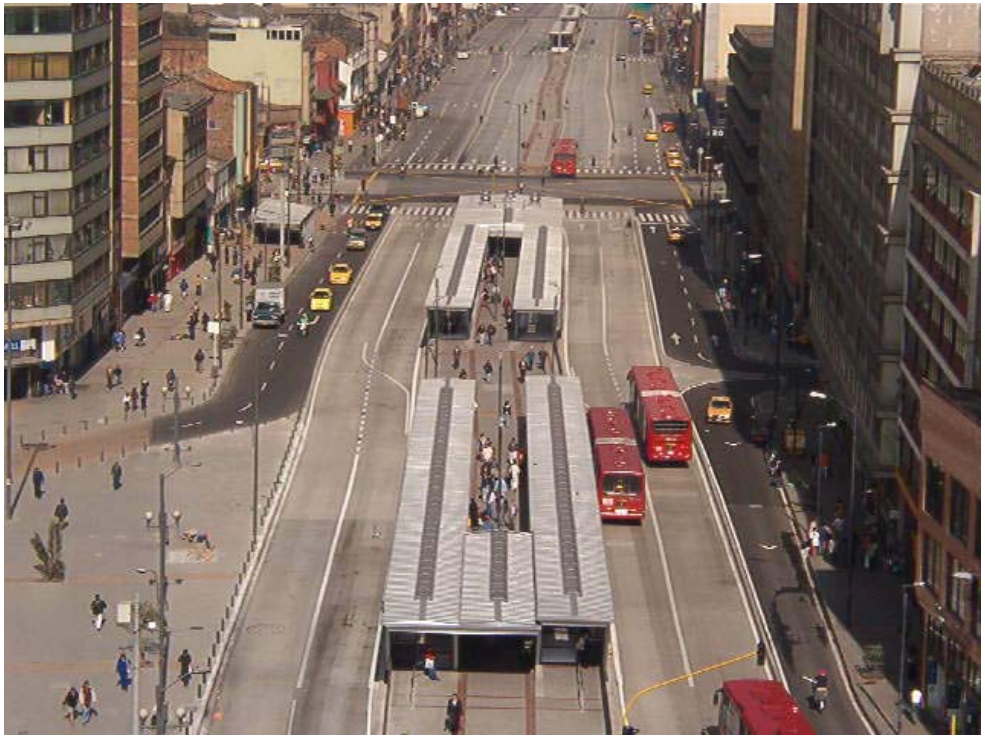
Transport Indicators Bogotá		
	1998	2005
Private automobile	17%	8%
Motorcycle	1%	3%
Taxi	10%	12%
Conventional bus	56%	42%
Bus rapid transit	0%	19%
Walk	7%	12%
Bicycle	1%	3%
Other	8%	1%

Source: World Bank

Reforms in Bogotá: Calle 13 – Av. Caracas



1998



2004

Source: GTZ

Reforms in Bogotá: public space improvements

Source: GTZ


CICLOVÍA
DOMINGOS Y FESTIVOS
7:00 A.M. 2:00 P.M.

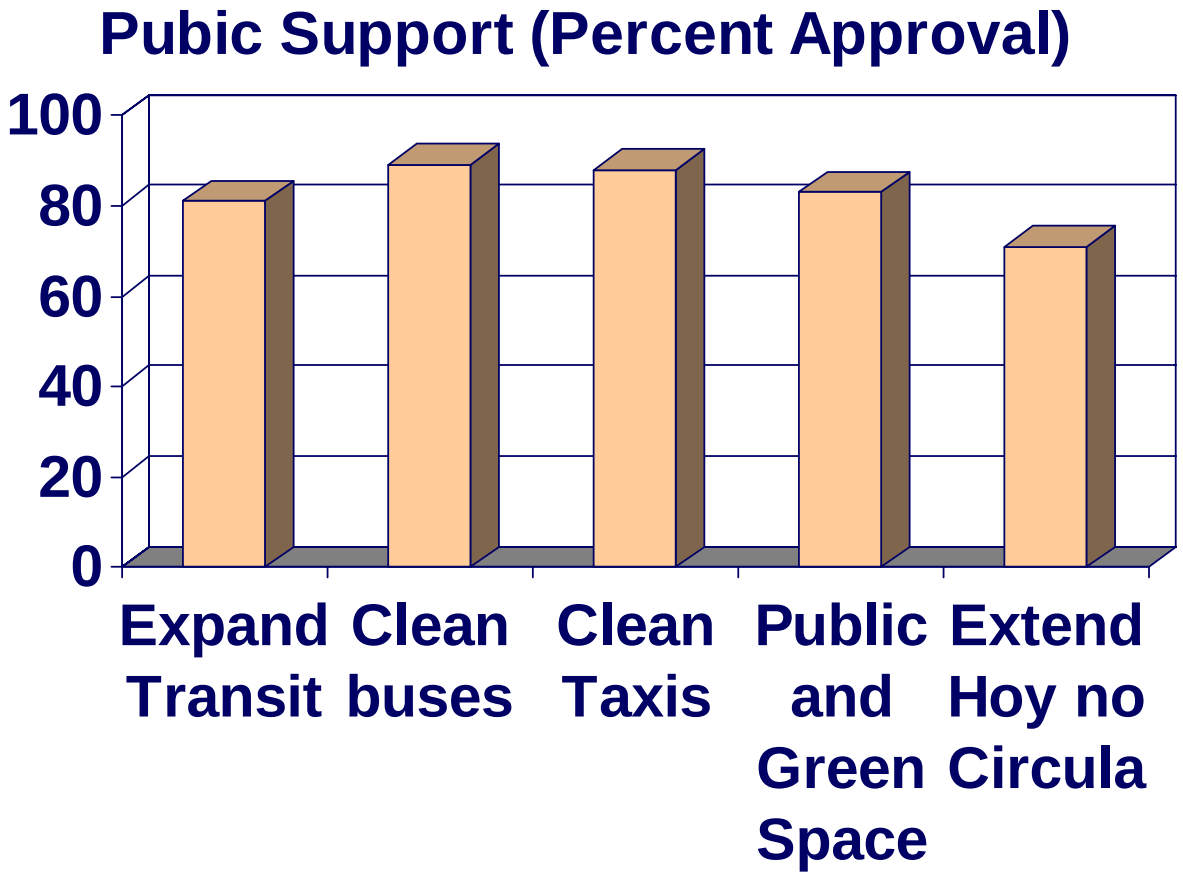
Mexico City - Metrobus

- **Metrobus**
  - 1 corridor (20 km)
  - 36 stations
  - 97 articulated BRT vehicles
    - Replaced 350 older buses
  - 1 minute peak frequencies
  - 21 km/hr average speed
  - 260,000 daily trips
  - 35,000 tons annual CO_2 reduction

Mexico City – “Plan Verde”

- **Comprehensive sustainability plan**
  - **Land, water, air, waste, energy, transportation, etc**
  - **$550 million USD over 15 years**
- **Major transportation components**
  - **250 km of new mass transport lines**
    - **9 new Metrobus corridors by 2012**
      - Total system: 220 km
  - **Cleaner buses (Euro IV)**
  - **Build 400 km bicycle paths by 2012**
  - **Create pedestrian streets in historic downtown areas**
  - **Extend Hoy no Circula to Saturdays**
  - **Reversible lanes on roads**

Mexico City – “Plan Verde”



Guayaquil -- Metrovia

- First trunk line (Guasmo-Rio – Daule) (2006)
  - 15 km dedicated lanes
  - 37 stations
  - 100,000 daily trips
  - Replaced 250 colectivos with 40 articulated and 40 standard buses
- Trunk 3 opened May 2008
  - 24 stations
  - 200,000 daily trips
  - Travel time savings: 15 – 20 minutes
- System will ultimately include 7 trunk corridors
- Received Sustainable Transport Award in 2007
- Planned and managed by Fundación de Transporte Masivo Urbano de Guayaquil

CAI-LAC: Working together to improve air quality and mitigate climate change

Colombia National Transit Policy

- Improve mobility in cities through
  - Institutional support (training, planning, technical assistance, etc.)
  - Improved regulatory framework for procurement, etc.
  - New policies to use roads and public space more efficiently
- Measures based on city size
  - Intermediate cities (300,000 – 600,000)
    - Traffic management, transit reorganization
  - Over 600,000
    - Delivery of BRT systems

Colombia BRT Systems – Operational Data

City/Metropolitan Area	Operational Data						
	Length of trunk corridors (km)	Number of transfer stations	% of transit demand served	Sector with highest load	Pax/day	BRTS fleet	Current fleet
AMCO (Pereira - Dosquebradas)	16	2	46%	7,000	142,000	137	1,100
Cartagena	14.9	1	70%	11,200	334,000	373	1,900
Barranquilla	13.2	2	28%	10,300	300,000	294	4,300
Valle de Aburrá (Medellín)	13	1	30%	8,000	170,000	1,485	7,500
Bucaramanga	8.6	4	63%	10,000	600,000	302	1,900
Bogotá	84	7	25%	35,000	1,400,000	1,265	21,000
Soacha	5.9	2	75%	12,400	150,000	215	3,000
Cali	49.5	8	92%	12,000	875,000	913	4,200

Source: Colombia Ministry of Transport

Ingredients for Success

- Strong Leadership
- Social awareness and political pressure
- Transport sector reform
  - New institutional arrangements
  - Public Private Partnerships
  - Enhanced capacity
- Inclusive stakeholder participation

But Need to Remain Vigilant

- **Transmilenio (2007)**
  - **CO2 reductions were 48% lower than expected**
    - **114 million passenger trips vs. 208 million expected**
      - Main issue appears to be problems with reorganization of traditional bus fleet into feeder routes
  - **2.6% of passengers would have used a car, versus 5.5% expected**
  - **Crowding, service quality have been increasing challenges**

So What Can Be Done?

- **Need a strong, comprehensive, and sustained program**
  - **Cleaner fuels and vehicles**
  - **Public transport**
  - **Integrated land use planning**
  - **Travel Demand Management**
    - **Parking management**
    - **Access restrictions / road pricing**
    - **Trip reduction programs**
    - **ITS**
  - **Improved goods distribution**

GEF Sustainable Transport and Air Quality Program

- Reduce GHG emissions by promoting policy changes and barrier removal regarding sustainable urban transport
- Two components
  - Regional
  - Country specific
- Financing
  - Total up to $79.3 million USD
    - Includes up to $20.8 million USD GEF financing over 4 years

GEF Sustainable Transport and Air Quality Program

- **Regional component**
  - **Goal: fight climate change and reduce air pollution in the transport sector through regional cooperation**
  - **Objectives**
    - **develop regional and local strategies**
    - **develop and maintain a collaboration network to implement the strategies**
    - **improve measurement and quantification tools and capacities**
    - **build broader support for SUT**

GEF Sustainable Transport and Air Quality Program

- **Regional Component**
  - **4 Subcomponents**
    - improve methodologies to assess climate change, air quality and other benefits of transport interventions
    - strengthen regional capacity for project preparation and implementation
    - develop local and national policies on climate change, air quality and transport
    - implement a program monitoring and evaluation framework

GEF Sustainable Transport and Air Quality Program

- **Country specific component**
  - **Competitive and demand-driven**
    - **47 proposals received from 12 countries**
    - **3 countries, 11 cities selected**
      - Argentina
      - Brazil
      - Mexico

Country Specific Component

Strategy: Address 5 major barriers to SUT:

Institutional	**SUT is often not a priority or part of the vision** **Politics tend to favor unsustainable transport modes** **Fragmented decision-making** **Little coordination among transport, land use, environment, traffic, etc.**
Legal and Regulatory	**Difficulty changing traffic regulations** **Inadequate public transport regulation** **Barriers to cleaner fuels and vehicles**
Financial	**Lack of access to resources, due mainly to institutional and regulatory deficiencies** **Lack of coordination among international donors / lenders**
Technical	**Insufficient capacity**
Cultural	**Negative perceptions about public transport and NMT** **Over-estimate benefits of personal vehicle ownership**

Country Specific Component

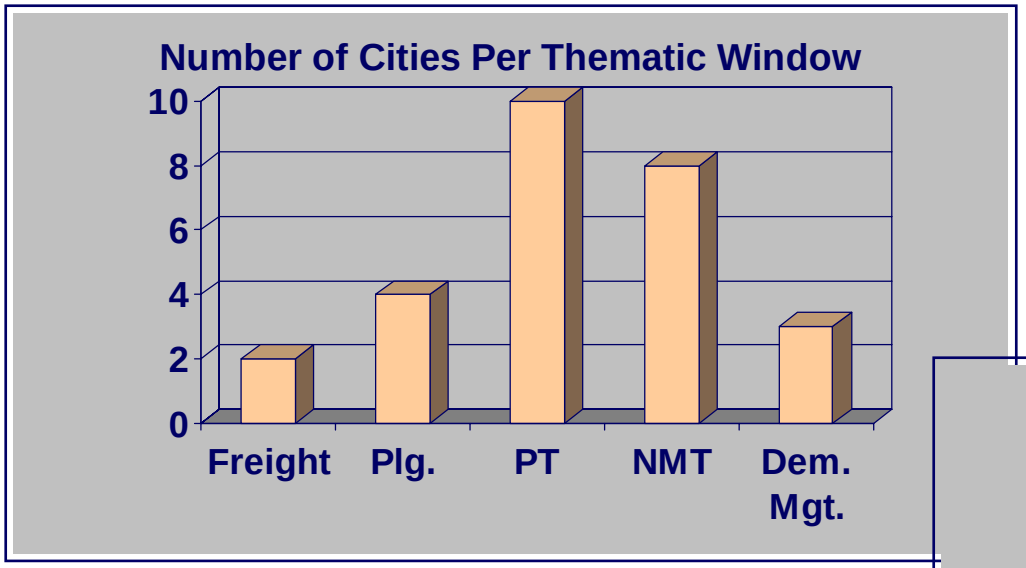
5 thematic windows:

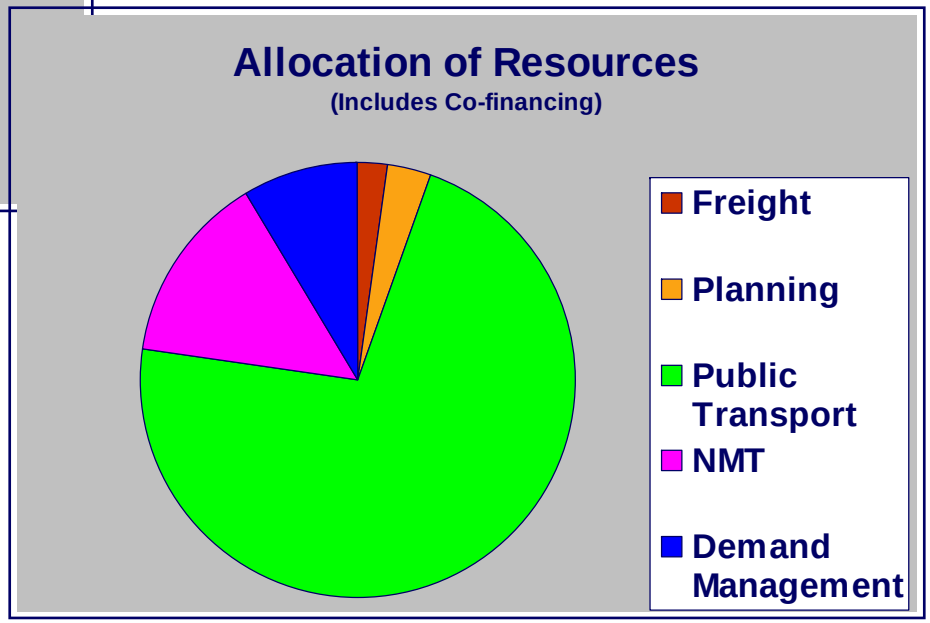
Freight	**Improve efficiency; reduce conflicts with other modes**
Integrated planning	**Promote the development of integrated land use, transport, and environmental plans**
Public transport improvements	**Pilot investments and technical assistance to improve public transport systems and to enhance access to those systems**
Non-motorized transport	**Improve integration of walking and bicycling into planning and culture of cities**
Demand management	**Promote the design of car free zones/days, parking management, road pricing, and other demand management techniques**

Activities Under Thematic Windows

Freight	Integrated Planning	Public Transport Improvements	Non-motorized transport	Demand Mgmnt.
• Develop city-level freight transport plan, including stakeholder workshops • Analyze voluntary fuel consumption reduction programs • Analyze fleet renewal and retrofit strategies • Evaluate logistics plan with peripheral hubs to transfer goods to smaller and cleaner vehicles • Analyze freight congestion charging	• Develop city-level transportation master plan • Assess and recommend institutional, legal, and financial framework for integrated transport systems • Corridor-level land use study • Develop city-level transport GHG inventory	• Feasibility studies • Planning analyses • Modeling and alternatives analysis • Planning for negotiations with private bus operators • Busway construction • Improved bus shelters • Public opinion surveys • Public communications plan	• Bikeway planning, construction and reconstruction • Bikeway public awareness and promotion • Develop pedestrian mobility plan • Develop plan to recover public spaces in city center • Develop plan to recover green spaces • Widen sidewalks • Planning and design to integrate NMT with public transport, including design of bicycle parking facilities at BRT and Metro stations	• Final design of a plan to restrict car access to city center • Development of a comprehensive traffic demand management plan

Country Specific Component





What's Needed to Make the program successful over the long term?

- **Program needs:**
  - **to evolve into a plan and vision beyond the initial 4 year grant**
  - **strong local ownership and public support**
  - **to lead toward strengthened local, national, regional, and international cooperation on SUT**
  - **partners**
    - **financial**
    - **technical**
    - **research**
    - **communications**
  - **Enhanced and continuous funding, consistent with the magnitude of the challenge and the consequences of current trends**

Opportunities for Collaboration with Asia

- **Work together to:**
  - **Raise awareness of importance of SUT**
  - **Develop benchmarks and measurement tools**
  - **Improve technical and financial support**
  - **Exchange knowledge and expertise**

- **Thank You!**
- **Contact information**

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