Managing Mobility to Create Sustainable Cities

CSD-18 Thematic Debate on Transport

Allison Davis, Senior Transportation Planner, Arup

May 4, 2010
Who We Are

A global, integrated, multidisciplinary firm of professionals working together to tackle complex building, design and systems issues.

Total Architecture implies that all relevant design decisions have been considered together and have been integrated into a whole by a well organized team empowered to fix priorities. --Sir Ove Arup
Transport Sector Sustainability

- Environment
- Economy
- Equity

Sustainability

IMF, World Economic Outlook, 2005
World CO₂ Emissions

- Energy: 46%
- Transport: 23%
- Manuf. and Constr.: 19%
- Other: 12%

World Transport CO₂ Emissions

- Road: 73%
- Int. Nav: 9%
- Int. Air: 6%
- Dom. Air: 5%
- Rail: 2%
- Dom. Nav: 2%
- Other: 3%
Components of Transport Emissions

GHG Reductions from Transportation

- Vehicles
- Fuels
- Vehicle/System Operations
- VMT
Why does VMT Continue to Increase?
Regional and Local Challenges

- Poor pedestrian environment
- Fragmented transit provision
- Disconnect between land use and transport planning
- Auto-supportive policies
- Weak institutions
- Lack of data
Improve Public Transit
Improve Public Transit: TransJakarta

- Travel Time Reduction: 1 hr (peak, Line 1)
- Fuel: CNG and diesel
- CO₂ Reduction: -120,000T annually (est.)
- Implementation: 10 months (Line 1)
Incentivize Alternative Modes: London

- Scheme: Congestion Charge
- Trips: 50-60% diverted to transit
- Travel Speeds: +10% (2006)
- VKmT Reduction: -15% (2006)
- CO₂ Reduction: -16% (2006)
Incentivize Alternative Modes: Parking

- Parking pricing
- Financial incentives
- Parking maximums
- Unbundle parking
- Parking regulations
- Shared parking
Change Urban Form

Transport Energy Use Per Capita

Kenworthy and Laubre, Transportation Quarterly, Vol. 53, No. 4, Fall 1999
Change Urban Form: Arlington, Virginia

- Focused on $\frac{1}{4}$ and $\frac{1}{2}$ mile (400-800m) radius of station
- VMT per capita Reduction = -20-30%
- Transit Mode Share = 40%
Key Messages

• Mode shift to transit is possible
• Smart decisions as part of an overarching regional plan can change travel habits and reduce emissions
• Land use is part of the solution and will reap benefits in the long-term.

Urban transport is a political and not a technical issue. The technical aspects are very simple. The difficult decisions relate to who is going to benefit from the models adopted.

-- Enrique Penalosa, Former Mayor of Bogota
Contact Information

Allison Davis
Senior Transportation Planner
Arup

155 Avenue of the Americas, NY, NY 10013

allison.davis@arup.com