BRT: A Historical Perspective

Peter Midgley

March 2005
Peter Midgley recently retired the World Bank where he spent much of his 25 year career working on urban transport operations in Africa, Latin America, South and East Asia. Before joining the Bank, he worked in the UK, Brazil, Egypt, France and Kenya on urban transport and urban planning projects. Although trained as an urban planner, he has concentrated on urban transport issues throughout his career. He drafted the first guidelines for BRT in France (“Autobus en Site Propre”) for the Paris Transport Authority in 1976 and he drafted the World Bank’s first regional urban transport strategy paper “Urban Transport in Asia: An Operational Agenda for the 1990s” (published in 1994).

He was recently asked by the Energy Foundation to advise the Municipality of Beijing on urban transport and BRT measures for the Olympics and he is a member of the China Council Task Force advising the Chinese Government on Sustainable Transport for 2020. Along with Bill Vincent (of BTI), he was an executive producer of the recently completed film “Making Things Happen with BRT”.

Peter is a UK national. He lives in the USA (Maryland) and he can be reached by email at pmidgley@earthlink.net and by phone at +1 (240) 476 4404.
Not another retiree!!
Way back when.....
The first bus lane

1964 Paris, France
- First with-flow bus lane
- Quai de la Megisserie
- 1000 m in length
The first busway

1968 Liege, Belgium
- Conversion of tram lines to exclusive bus use
The first busway

1968 Liege, Belgium
- First unidirectional busway
The first busway

1968 Liege, Belgium
- First unidirectional busway
The first busway

1968 Liege, Belgium
- First median busway
The first busway

1968 Liege, Belgium
- First unilateral busway
The first high speed busway

1969 Washington DC, USA

- Opening of the first 6.5 km of the Shirley Highway
- Tidal flow system
- 16 meter right of way (!)
The first dedicated busway

1971 Runcorn, England
- Designed in 1964
- Public transit spine if new town
- 19 km in length
The beginnings of BRT

1972 Curitiba, Brazil
- Designed in 1972
- Built in 1973
- First 20 km opened in 1974
And now for something completely different......
BRT: A Historical Perspective

And now for something completely different……
1973: Oil Crisis in US and Europe
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The US studies busways to improve transit and publishes “Bus Use of Highways”

In Paris, we looked for busway opportunities

Paris, France, 1973
BRT: A Historical Perspective

1973: Oil Crisis in US and Europe

...and we devise our own guidelines and standards

“Autobus en Site Propre”
172p RATP 1977
By 1975: 19 Systems Worldwide

North America (10)
- USA (10) Boston, Chicago, Dallas, Dayton, Los Angeles, Milwaukee, New York, Pittsburgh, San Francisco, Washington DC

Europe (7)
- Belgium (1) Liege
- France (3) Evry, Paris, Saint-Quentin-en-Yvelines
- United Kingdom (3) Redditch, Runcorn, London

Latin America (2)
- Brazil (1) Curitiba
- Trinidad (1) Port-of-Spain
By 1980: 27 Systems Worldwide

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Africa (1)
- Ivory Coast (1) Abidjan

Abidjan (lateral)
## Status of BRT systems outside US

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France: Paris

Mobilien

- Opened 2003
- 22 km in length (by 2009)
- 17 lines
- 20% increase in bus speed
- Cost: $0.7m per km
France: Paris

RN305 Busway
- Opened 2001
- (proposed in 1975!)
- 4.5 km in length
- 1 line
France: Nice

Busway
- Opened 2004
- 9.9 km in length
- 28 stations

*Transport Est-Ouest Rouennais
France: Rouen

TEOR*

- Opened 2002
- 25.6 km in length
- 3 lines, 41 stations
- Automatic Guidance (Optical)
- Cost: $6.9m per km

*Transport Est-Ouest Rouennais
Netherlands: Amsterdam

Zuidtangent (south tangent)
- Opened January 13, 2002
- 30 km in length
- 22 stations
- 125,000 passengers per day
Netherlands: Eindhoven

Phileas System
- Opened 2003
- 15 km in length
- Electronic guidance (magnets)
- Cost: $10.0 m per km
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Netherlands: Utrecht

Utrecht Busway

- Opened 2001
- 13 stations
- 33,500 passengers per day
- Extension due 2007

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United Kingdom: Bradford

Guided Bus Systems
Quality Bus Initiative
- Opened 2002
- 6.0km in length (2.3 km guided)
- 6 stations
United Kingdom: Edinburgh

Fastlink
- Opened 2004
- 5.0km in length (1.5 km guided)
- 4 stations
- Cost: $3.8 per km
United Kingdom: Leeds

Guided Bus Systems

Superbus (Opened 1995)
- 1.7 km in length

Elite (Opened 2001)
- 4.6 km in length
- Cost: $3.2m per km
Canada: Ottawa

Transitway
- Opened 1983
- 52 km in length (27 km busway)
- 28 stations
- 220,000 passengers per day
- Costs: $10-15m per km
Canada: Vancouver

B-Line

- Opened 1996
- 3 Routes, 40 km in length
- 60 stations
- 60,000 passengers per day
- Cost: $2.7 per km (98 line)*

*cost includes vehicles, the median busway improvements (including land acquisition), station shelters, automatic vehicle location system, transit signal priority systems and a share of a new bus depot.
B-Line

- 20% of passengers previously traveled by car
- 20% reduction in travel time
- 20% reduction in vehicle requirements and service hours
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Canada: York

- Fastest growth area of Canada
  - VIVA
    - Under construction (9/2005)
    - 90 km in length, 4 corridors
    - 30% increase in transit
    - 7,000 car trips off the road
Canada: York

VIVA
- Attractive stations & terminals
- Dedicated transitways
- ITS & operations control center
- Frequent service, up to 20 hours a day
A last word

If these folks would take the bus, I'd be home by now!
Mayor Ken Livingston

- “...in central London, it is impossible financially or physically to solve transport needs on the basis of further extending use of private cars.
- It is for this reason that we must radically improve public transport and introduce measures to reduce congestion.”
The London bus network is considered one of the largest and most comprehensive urban systems in the world.

- Each weekday 6,500 buses carry 5.4 million passengers on more than 700 different routes
- 700 bus lanes + Oxford Street

Since 2000

- 1,100 bus priority schemes
- 200 new or extended bus lanes
- 1,400 bus stop improvements
- 370 traffic signal schemes
Results (February 2004)

- Traffic reduced by 20% (cars by 30%);
- Delays reduced by 32% – 40%;
- Speeds increased by 30%;
- Journey times to central London reduced by 14%;
- Bus patronage increased by 14% (morning peak hour);
- Number of buses in the zone increased by 19%; and
- Excess waiting time at bus stops fell by one-third.
- Cycle traffic increases by 20%
Transport for London (TfL)

- Responsible for Transport System
  - Implement transport strategy
  - Manage transport services
  - Integrated approaches to traffic management and transport
London: Management

Transport for London (TfL)

- Responsible for Transport System
  - Implement transport strategy
  - Manage transport services
  - Integrated approaches to traffic management and transport

- Strategic Road Network
  - 550 km (5% of total roads)
  - carries 33% of London's traffic

- Traffic Signals and ATC
  - all of London's 4,600 traffic lights

- Public Transport
  - Manages buses and LRT
  - Runs Underground
A new vision

Urban transport?

Mobility Management
BRT: A Historical Perspective

And now for something completely different......
Making things happen
with Bus Rapid Transit