Poor quality bus lanes, express buses and a few queue jumper lanes aren’t ‘BRT’ and won’t support TOD
Critical Elements for BRT

- Enclosed and Secure Stations
- Newer, Cleaner High-Capacity Buses
- Rapid Boarding
- Pre-board Payment and Free Transfer
- Pedestrian and Bicycle Access
- Dedicated Bus Lanes
BRT growing fast, spurred by “Gold Standard” BRT Projects

Worldwide combined length of BRT systems (km)


after Curitiba

after Quito, Brisbane, & European cities

after Bogotá

Curitiba

Bogotá
Guangzhou: BRT Corridor Pre-BRT
After BRT: moving people like a Metro
27,000 passengers per hour per per direction
World-Class BRT: Guangzhou

- 26 km initial corridor
- 800,000 passengers/ day
- 300 buses/ hr/ direction.
- 985 buses in BRT
- +18% peak riders 1st 4 months after 11/ 2009 opening
- longest BRT station in world
- bus speeds 18-21 km/ hr
‘BRT Light’
1,200 passengers per hour per direction with lower frequency

Amsterdam Zuidtangent

Nantes, France

Credit: Sam Zimmerman, AECOM
### America has some BRT systems, but not the best

<table>
<thead>
<tr>
<th>CITY</th>
<th>2-way dedicated lanes</th>
<th>Local &amp; Express</th>
<th>Off-board fare collection</th>
<th>BRT network</th>
<th>Platform-level boarding</th>
<th>High service frequency</th>
<th>Turn restrictions at junctions</th>
<th>Unique branding</th>
<th>Private/Quality of service contracting</th>
<th>Safe, wide, weather-protected stations</th>
<th>Station spacing</th>
<th>On highest-demand corridors</th>
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Bus Rapid Transit

High cost-effectiveness
Quick to deploy
Strong support for transit oriented development
Requires political support
- Street space allocation
- Enforcement
- Operations plan at time of system design & planning

Source: www.itdp.org Bus Rapid Transit Guide
BRT Construction Costs Much Cheaper Than Rail

52 M Yuan = US$7.9 M ; 500 M Yuan = US$76.3 M

Guangzhou BRT vs. Guangzhou Metro Line 5
Four systems, same cost: How much new TOD? How much improved access to jobs from each?

426 kilometres of BRT

40 kilometres of LRT

14 kilometres of elevated rail

7 kilometres of subway
Guangzhou: ‘direct service’ means more one-seat rides than closed BRT or Mass Rapid Transit (MRT)
BRT routes & evening peak hourly boarding at BRT stations
High Quality BRT Often Requires Less or No Operating Subsidy

Guangzhou BRT and Non-BRT Bus Operating Costs and Revenues
(in RMB)

<table>
<thead>
<tr>
<th></th>
<th>Operating cost per Bus-km</th>
<th>Revenue per Bus-km</th>
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<tbody>
<tr>
<td>Before BRT (July, 2009)</td>
<td>¥ 7.4</td>
<td>¥ 6.5</td>
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<tr>
<td>After BRT (July, 2010)</td>
<td>¥ 8.1</td>
<td>¥ 7.8</td>
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0.9 yuan revenue shortfall before BRT
0.3 yuan shortfall after BRT
Dedicated right of way in central verge, with passing lanes. Frequency at peak every 10 seconds.
Off board fare collection, security personnel at stations
At level boarding speeds entry & exits
Wide, well illuminated, weather protected stations with passenger information
Wide multiple doors speed boarding & alighting
Operational control system to prevent bus bunching
Guangzhou BRT Corridor Bike Lanes and Sidewalks
Bike parking and bike sharing available adjacent to stations
“The environment along Zhongshan Avenue is good”

-----Responses from Zhongshan Avenue.

Before BRT : December 2009
With BRT: August 2010
TOD Near Guangzhou BRT Stations
BRT Impacts on Land Values

Rodriguez and Targa (2004) before/after comparison with control

- rental prices decrease 1.3% for every added minute of walking time from Bogota BRT
- additional US$439 to $653 property value for each 0.1 kilometer of distance to Botota BRT stations

Mendieta and Perdomo (2007) spatial hedonic pricing model

- within 0.5 km of Bogota BRT stations: price premium 5-17%
TOD Around BRT in Curitiba

Credit: Sam Zimmerman, AECOM
Brisbane SE Busway

Credit: Sam Zimmerman, AECOM
BRT Urban Design Integration

Brisbane SE Busway

Credit: Sam Zimmerman, AECOM
Busway boosts house values

PROPERT Y values along Brisbane's South-East Busway have jumped as much as 20 per cent as buyers take advantage of future-proof travel to the city.

Prices in the southern suburbs of Holland Park West, Upper Mount Gravatt and Eight Mile Plains have increased since the $355 million busway opened in March 2001, providing an escape from South East Freeway traffic snails.

Real Estate Institute of Queensland research shows suburbs with direct access to the busway's stations had solid growth over the recent quarter.

"Most other suburbs next door to these busway suburbs also performed well, however they did record percentage changes slightly below those near the busway," REIQ president Mark Brimble said.

The most outstanding jump was in Holland Park West, where values rose 25.88 per cent.

The neighbouring suburb of Holland Park, which does not have direct busway access, rose 6.23 per cent.

The comparisons showed busway suburbs were performing above city-wide increases which have seen nearly all areas within 10km of the CBD improve in value.

Other neighbouring suburbs that did not perform as well include Mount Gravatt East, which recorded 4.28 per cent compared with 0.39 per cent in the busway suburb of Mount Gravatt, and Kedron, which increased by 1.66 per cent compared with a jump of 3.90 per cent in busway suburb Eight Mile Plains.

"This research supports the trend that more people are moving to areas within five to 10km of the CBD which are close to convenient public transport such as the busway," Mr Brimble said.

Queensland Transport recorded a "flourishing boom" on the busway with a 40 per cent growth in passenger figures in its first six months, or about 89,000 passenger trips a day.

The figures also showed approximately 375,000 private vehicle trips were converted to public transport along the busway, which straddles the South East Freeway.

"Property values also would increase if proposed extensions of the busway along northern and eastern routes went ahead," analysts said.

National Property Research analyst Matthew Oros said areas near public transport nodes would nearly always rise in value.

"Historically, investing in always followed public transport nodes. Those closer to transport generally have high values," Mr Oros said.

"A lot of investor stock in rental properties are considered worth more if they are close to public transport because they are easier to rent."

The $135 million Inner Northern Busway is nearing completion, and the plans dedicated bus lanes will go passengers unimpeded travel as far as Kedron.

Credit: Sam Zimmerman, AECOM
Ottawa Transitways: $1 B in development around BRT stations in system’s first decade

Credit: Sam Zimmerman, AECOM
Ottawa

Credit: Sam Zimmerman, AECOM
St Laurent: Ottawa’s Most Successful Mall

Credit: Sam Zimmerman, AECOM
Necessary Ingredients for TOD Around Stations and Terminals

Irrespective of Mode

Transportation Value
- Fast, frequent, reliable wide connections
- Significant people flows

Permanent, attractive facilities
- Stations/terminals
- Running ways

Quality image, unique identity

Credit: Sam Zimmerman, AECOM
Necessary Ingredients for TOD: Other Factors

Good development climate
Other supportive public policies and actions

- Macro land planning, zoning/floor space ratios
- Site plan review criteria
- Tax abatements
- Other Public Investments
Necessary Ingredients for BRT: Site Planning

Public gathering places in scale with surroundings, stations

Pedestrian environment

- Safe and secure
- Short, direct connections
- Environment friendly
- Active, interesting
Conclusions

- High quality transit - rail or BRT - supports TOD
- High quality BRT likely to support TOD and job access in more places, faster than rail, given a limited budget
For More Information

1210 18th Street, 3rd Floor
Washington, DC 20036
mreplogle@itdp.org
212-629-8001

www.itdp.org

Or

www.itdp-china.org

for more specifics on Guangzhou BRT and comparison of BRT systems