THE MISSION GROUP
1250 SIXTH AVENUE • SUITE 214 • SAN DIEGO, CALIFORNIA 92101
TEL (619) 232-1776 • FAX (619) 374-2785 • WWW.MISSIONGROUPONLINE.COM

North American BRT Forum

Beyond "Light Rail Lite"

BRT Lessons from Australia

Alan Hoffman
Principal, The Mission Group, San Diego

With special thanks to:

Graham Currie
Chair of Public Transport, Monash University, Melbourne

November 2005

Australian BRT Systems

Adelaide: O-Bahn

Sydney: T-Way

Brisbane: Busways

While three Australian cities have made major investments in BRT infrastructure, Brisbane will be the focus of this presentation.

Brisbane, Queensland, Australia

T-Way link to CBD

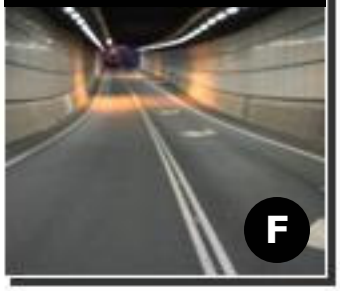
Southeast Busway

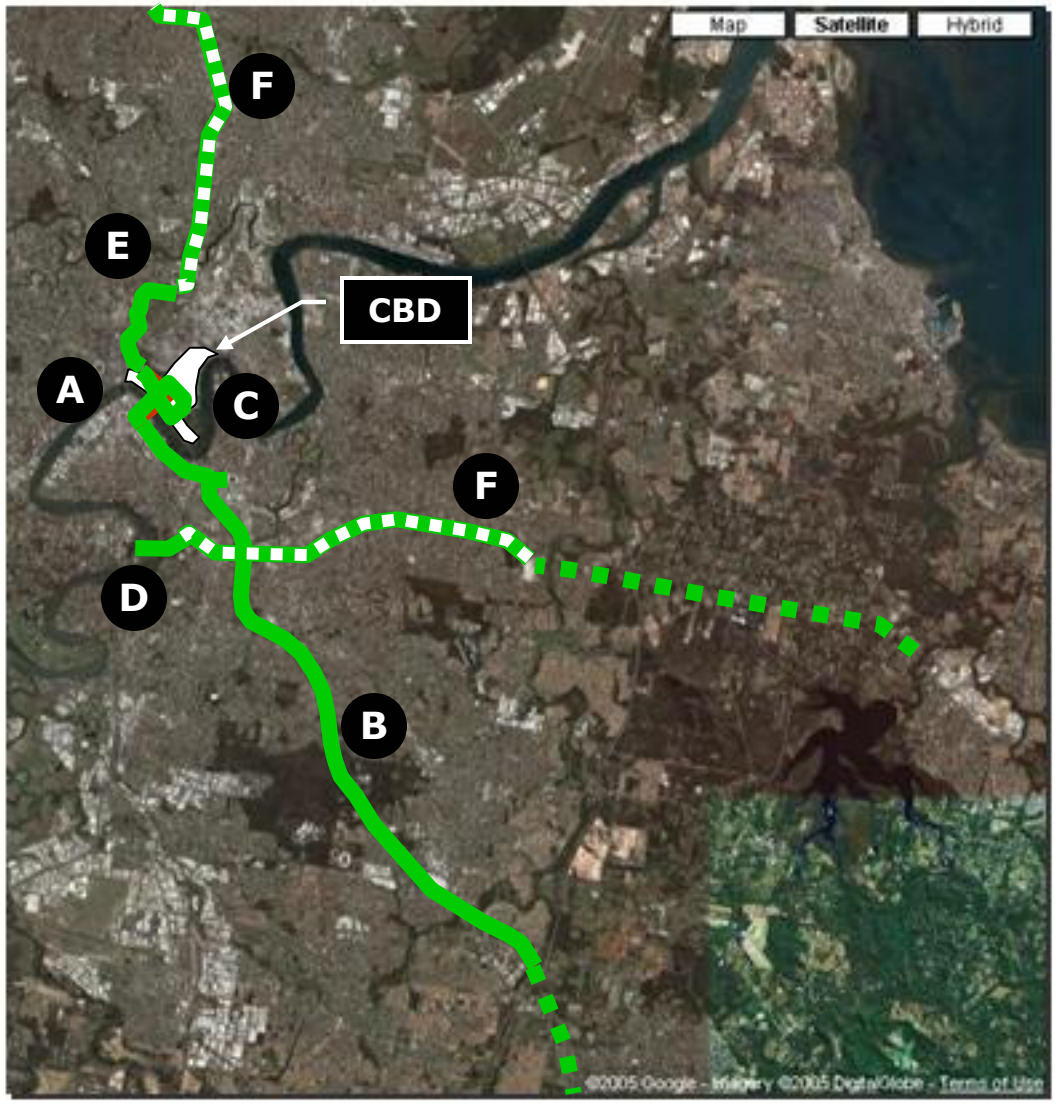
CBD Bus Tunnels

"Green" Bridge

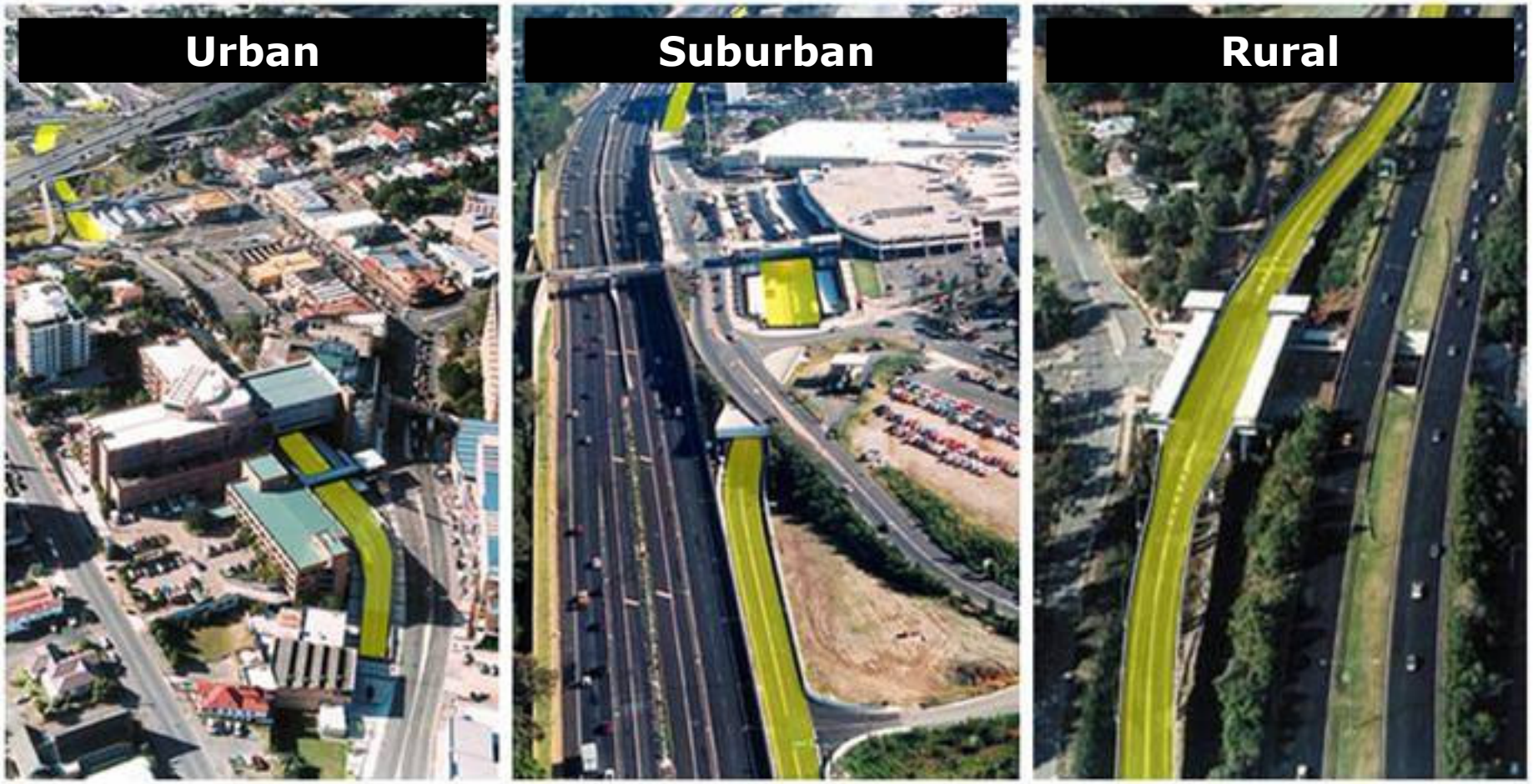
Inner-Nthrn Busway

Funded Busways





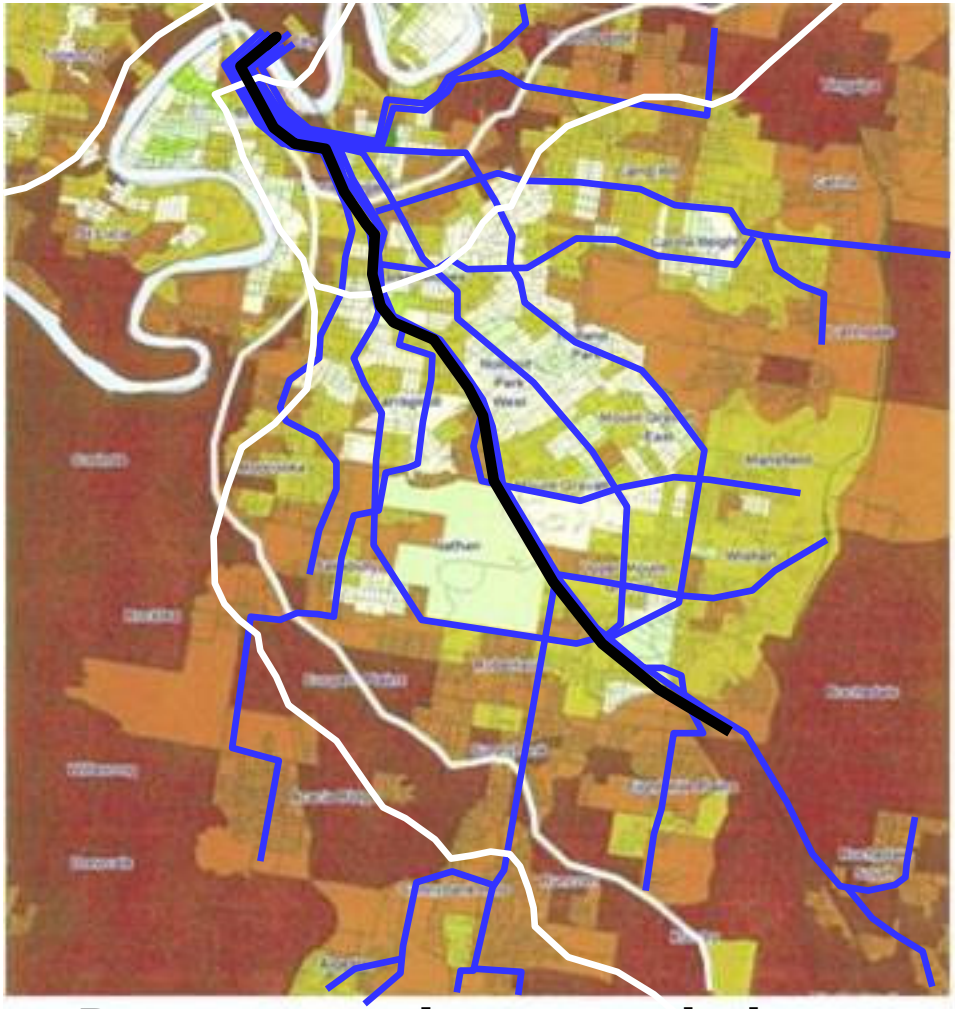
This Is "Rapid Transit"

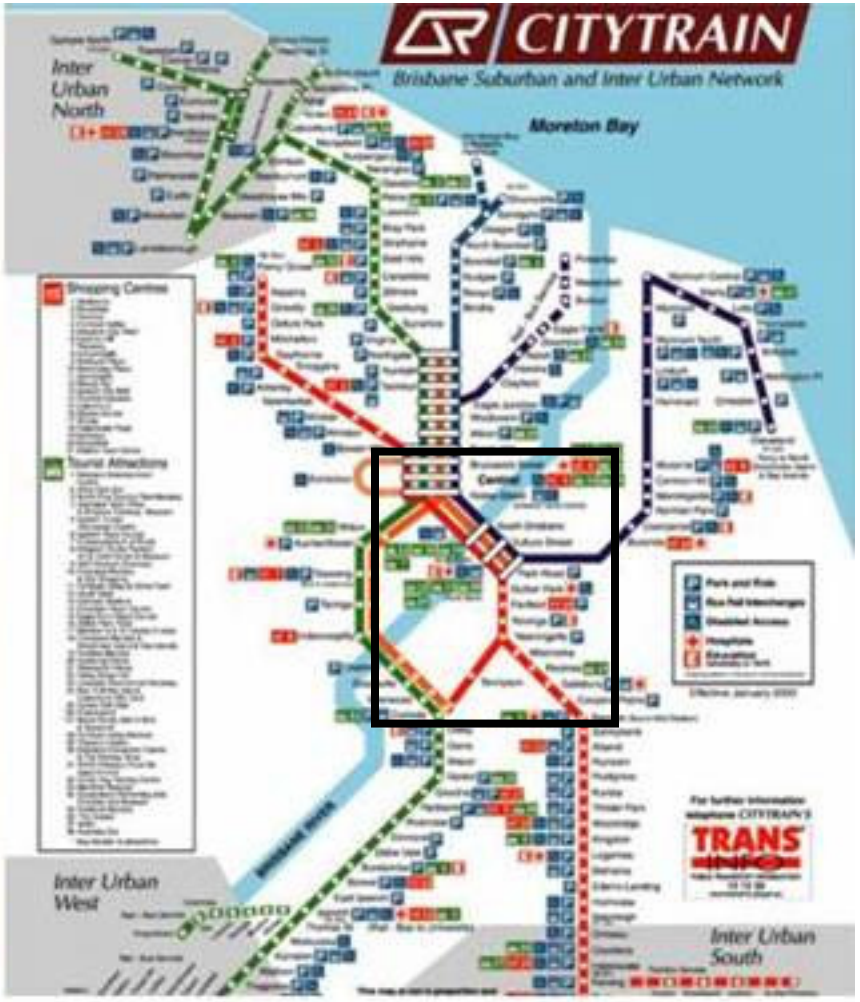


Shortly after the South East Busway opened, the Real Estate Institute of Queensland noticed the value of properties in suburbs along the busway had jumped about 15 per cent over adjacent suburbs not on the busway.

—Brisbane Courier Mail

Brisbane—Southeast Busway

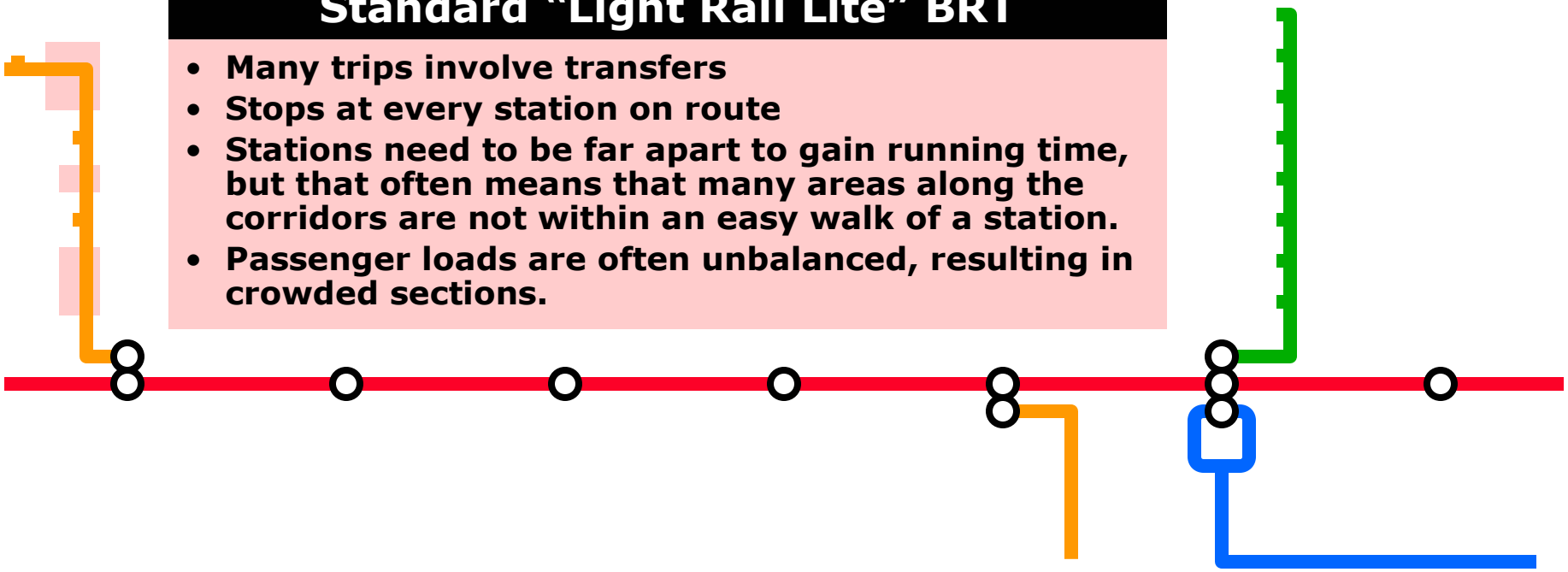




Busway services travel along arterials, then enter the Busway and run in express mode to key destinations, reducing transfers.

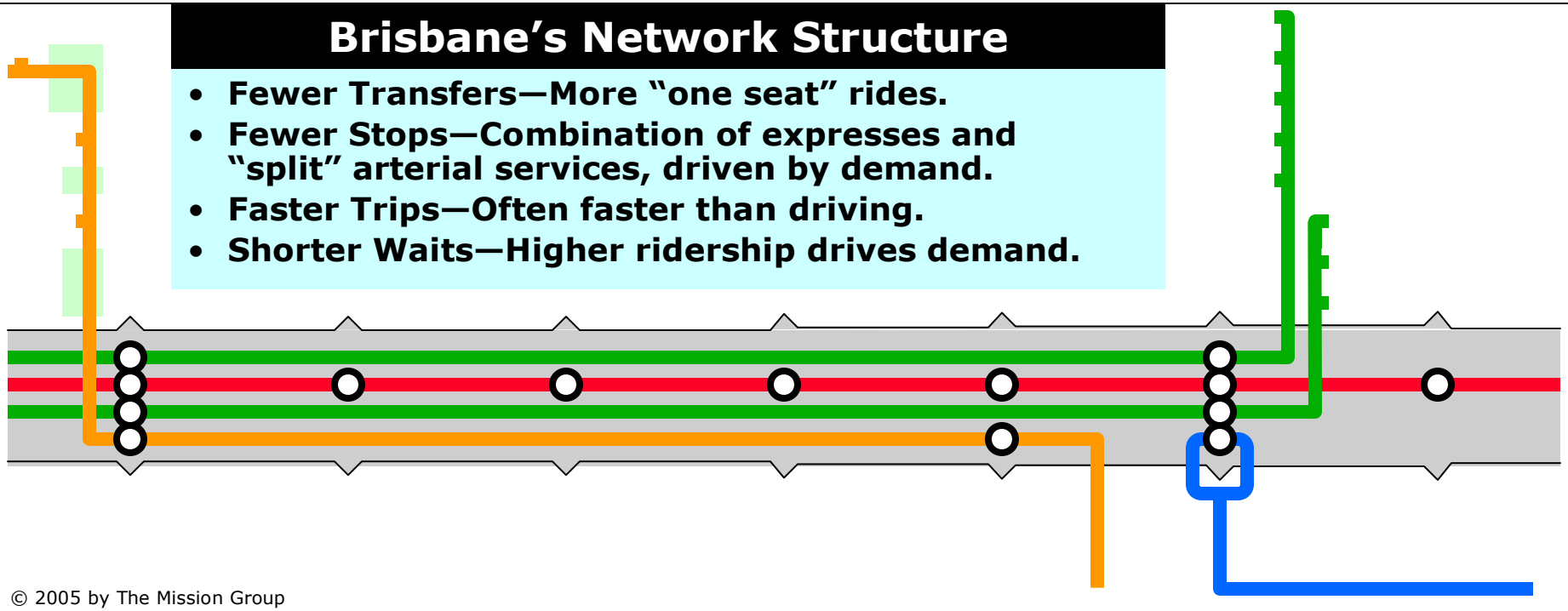
Standard "Light Rail Lite" BRT

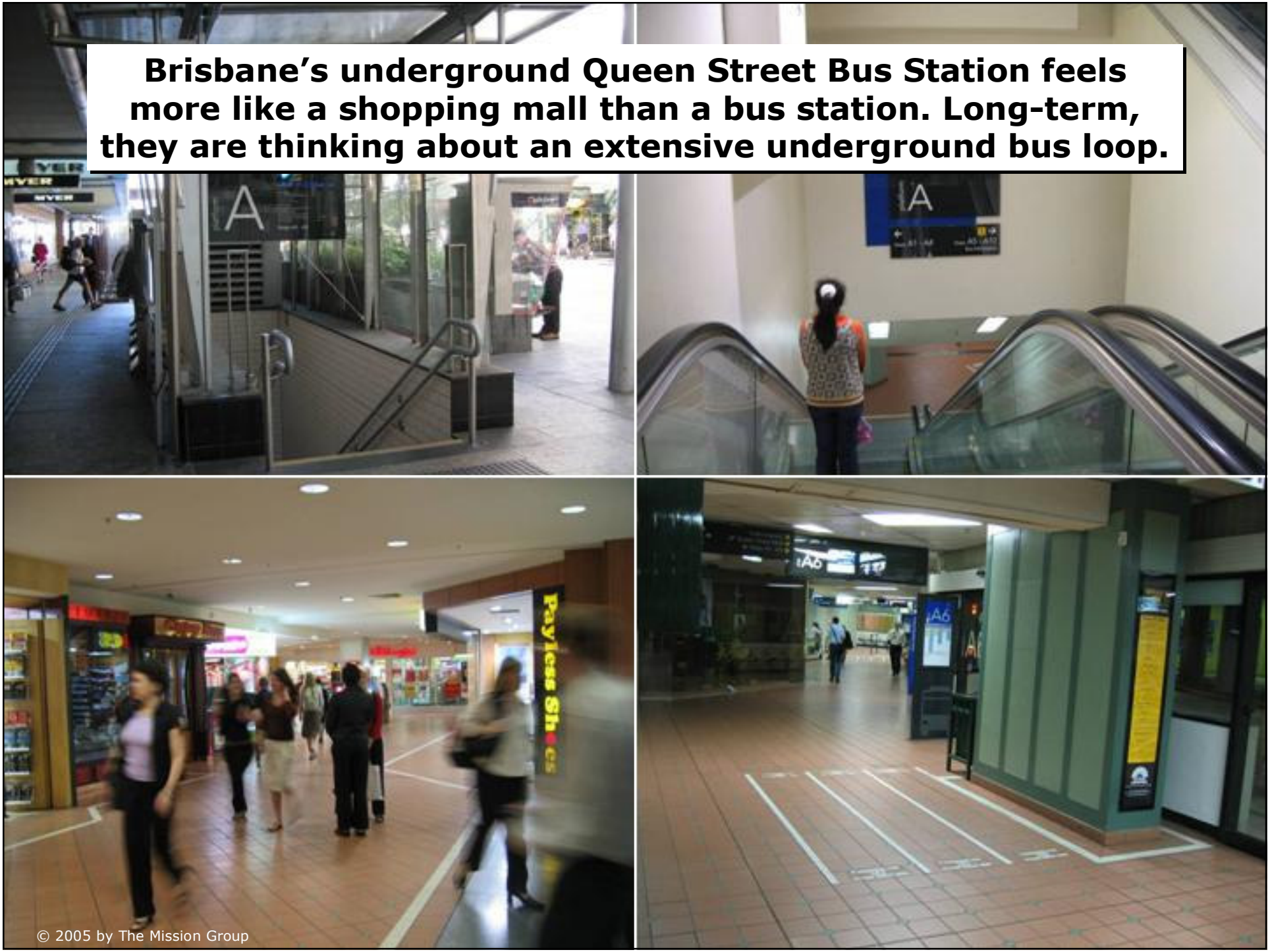
- Many trips involve transfers
- Stops at every station on route
- Stations need to be far apart to gain running time, but that often means that many areas along the corridors are not within an easy walk of a station.
- Passenger loads are often unbalanced, resulting in crowded sections.



Brisbane's Network Structure

- Fewer Transfers—More "one seat" rides.
- Fewer Stops—Combination of expresses and "split" arterial services, driven by demand.
- Faster Trips—Often faster than driving.
- Shorter Waits—Higher ridership drives demand.





Brisbane's underground Queen Street Bus Station feels more like a shopping mall than a bus station. Long-term, they are thinking about an extensive underground bus loop.

The Cultural Center Busway Station was recently rebuilt to increase its capacity. It is fully integrated into, and connects, several major cultural venues.

Brisbane relies on significant use of tunnels to produce a *Quickway* infrastructure that is fast and direct, reducing bus operating costs and attracting more riders due to time savings.

Brisbane rejected the use of freeway medians or roadways for its core *Quickways* to speed access and better locate stations.

Brisbane's Inner Northern Busway is nearing completion but is already open to service.

How Well
Is It Working?

What Does the Literature Say?

BRT Capacity

"Intermediate" Level

3000-5000 pax/hr/direction

***Approaching* LRT**

BRT & TOD

Open Question

Operating Costs

To match LRT seated capacity would require greater public subsidy

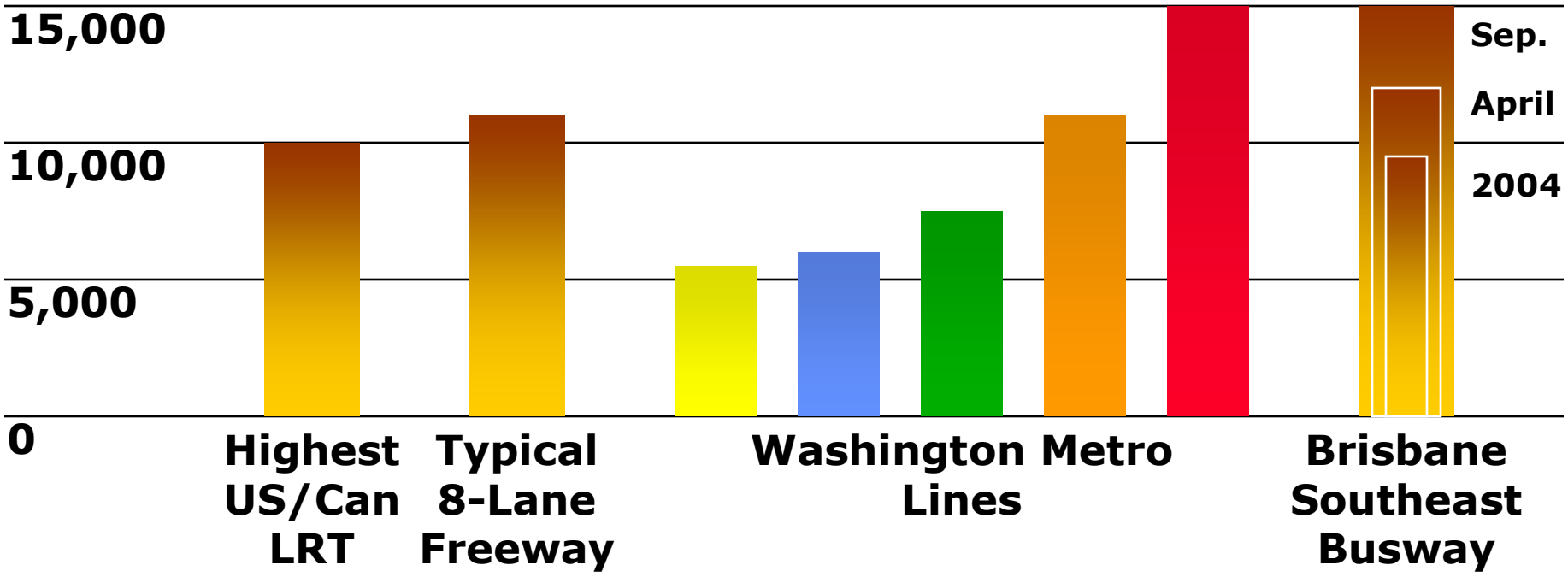
BRT's "Attractiveness"

Can BRT attract choice riders like LRT?

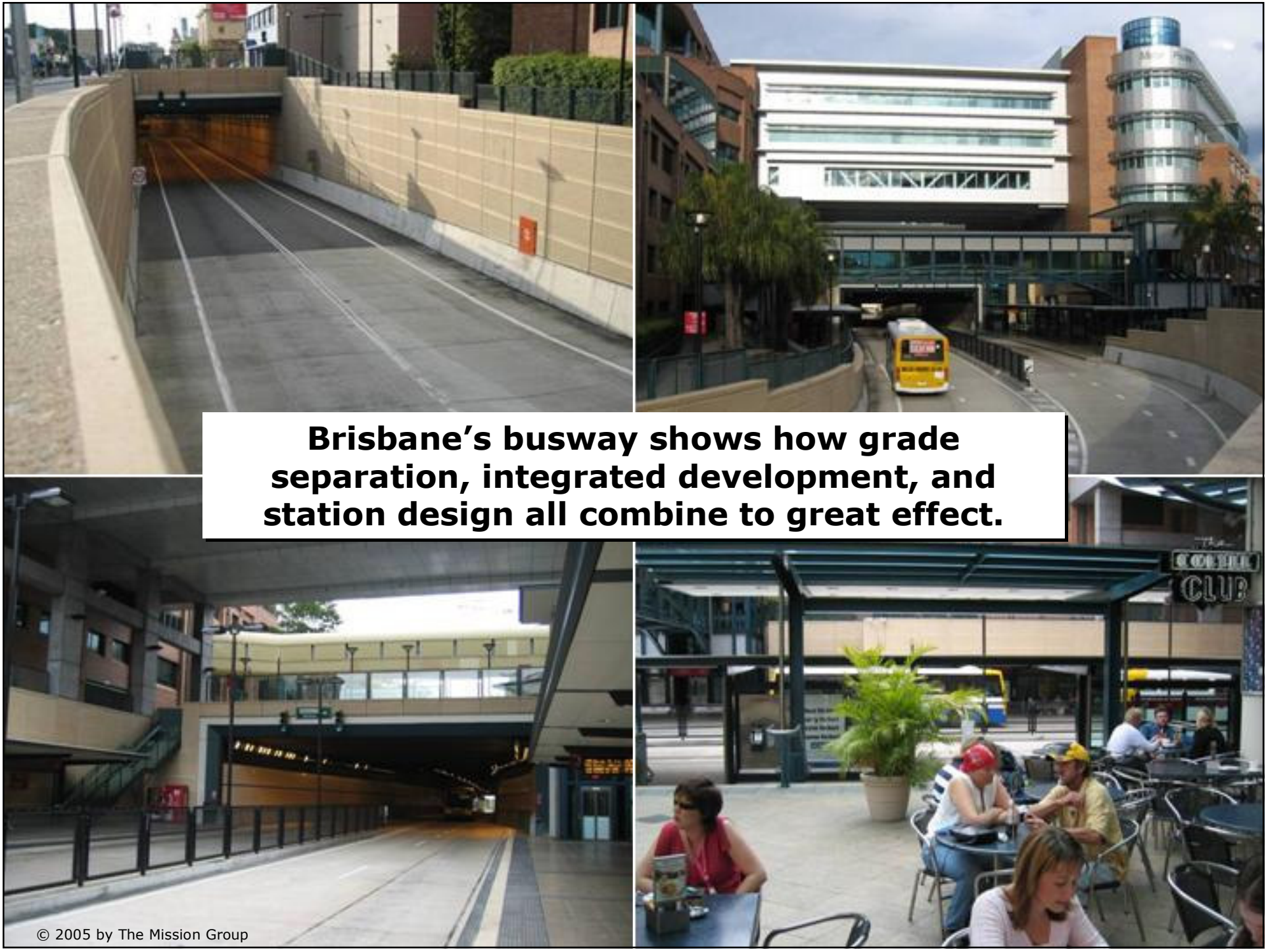
Much of the literature on BRT—even recent studies/presentations by qualified planners/engineers—make claims about BRT performance which are *not inherent to the mode* and result in lost opportunities.

Peak Ridership

Passenger Loads: Peak Location, Peak Hour, Peak Direction



According to Brisbane's bus service manager, most of the express services using the Southeast Busway are now operating at or near *full cost recovery* (little or no public subsidy).



Brisbane's busway shows how grade separation, integrated development, and station design all combine to great effect.

People who love their cars use Brisbane's Busway (Eight Mile Plain park-and-ride lot)

Lessons and Implications for Practice:

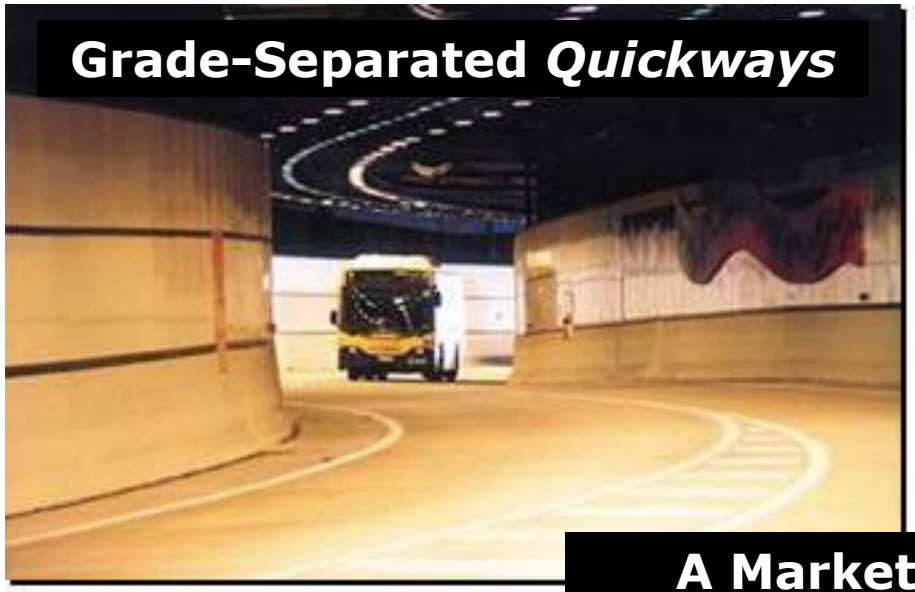
A Challenge to the North American BRT Planning Community

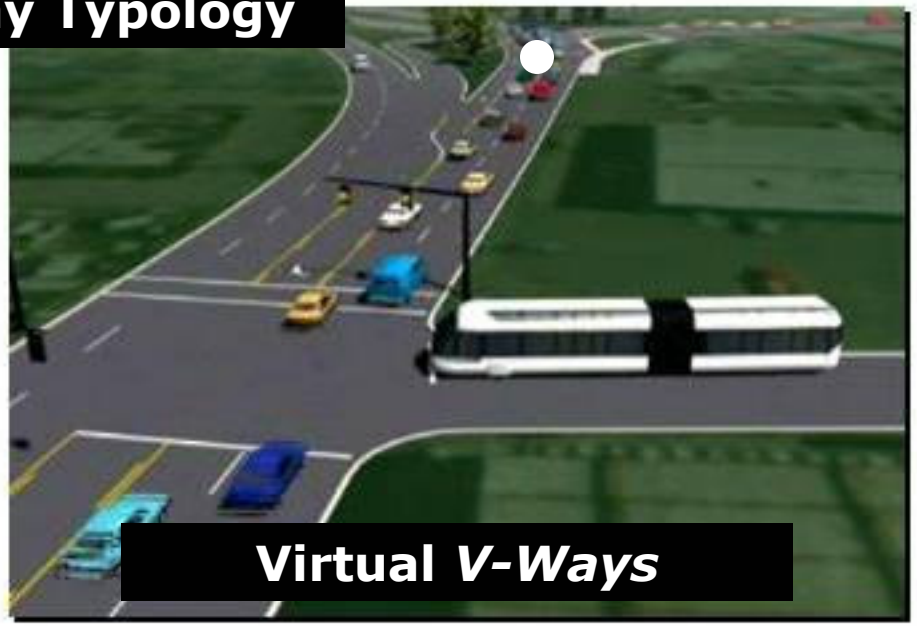
BRT Challenge #1

We Need to Better Distinguish BRT Infrastructure

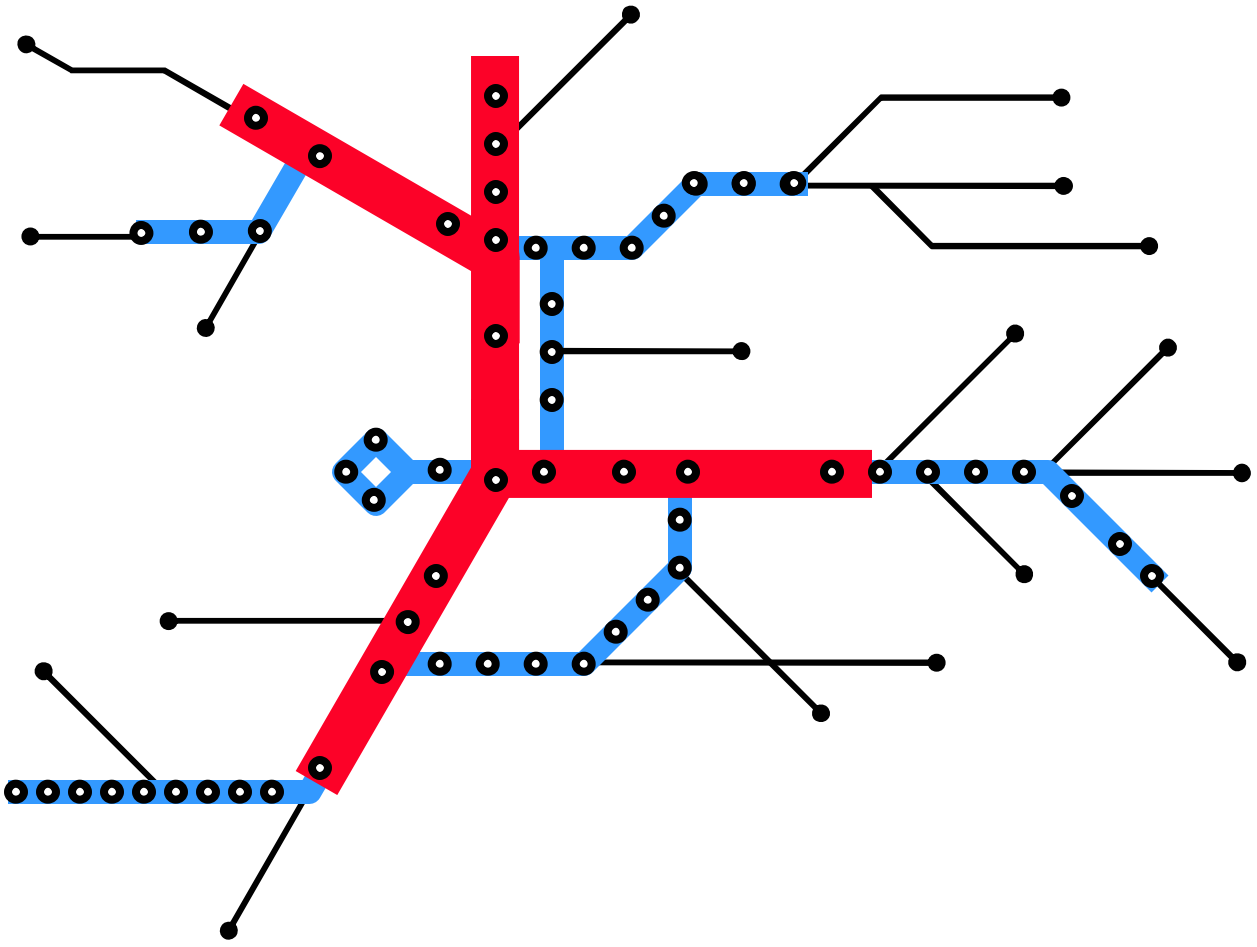
Grade-separated *Quickways* are—or can be—fundamentally different than other forms of BRT guideways.

A Market-Oriented Right-of-Way Typology





Legibility of ROW Infrastructure



Quickway

Station-to-Station service and Non-Stop Express service

T-Way

Station-to-Station service only

V-Way

Local Services that enter T-Way or Quickway and then proceed to destination in Station-to-Station or Non-Stop Express mode

Brisbane deliberately rejected mixed-flow HOV BRT operations to avoid the delays and increased operating costs implied by off-line stations.

BRT Challenge #2

We Need to Move Beyond "Light Rail Lite" in Our Planning and in Our Assumptions

Service network design should maximize value for potential users: shorter trip times, fewer transfers, less waiting time, and greater reliability all contribute to increasing ridership and revenues.

BRT Challenge #3

We Need More Accurate Operating Cost Models for Both BRT and LRT

What does it *really* cost to add an *additional* bus to a BRT system?
And what does it *really* cost to add a car to a light rail train?

Bus Rapid Transit
Isn't Just the
Poor Man's Rail Substitute...

It Allows You to Do
Things You Just Can't Do
With Rail Systems.