

The Emerging Revolution in Sustainable Transport



Walter Hook

THE INSTITUTE FOR TRANSPORTATION AND DEVELOPMENT POLICY

The Bus Rapid Transit Explosion



Enclosed and
Secure Stations

Newer, Cleaner
High-Capacity Buses

Rapid
Boarding

Pre-board Payment
and Free Transfer

Pedestrian and
Bicycle Access

Dedicated
Bus Lanes



Penalosa's Bogota



Curitiba BRT: 15,000

**Bogota BRT Capacity
45,000pphd**

Average Metro: 30,000

**Bike lanes and
wide sidewalks**

Bogota BRT Phase II has Bike parking at Terminals. Sao Paulo CET Commuter rail also has bike parking.



Explosion of new Bus Rapid Transit Projects since 2000. Most also leveraged NMT improvements

Built

- Guayaquil, Ecuador, 2005
- Mexico City, Mexico, 2005
- Beijing, China, 2004
- Seoul, Korea, 2004
- Jakarta, Indonesia, 2004
- Los Angeles, USA
- Pittsburgh, USA
- Eugene, Oregon, USA
- Ottawa, Canada
- Rouen, France,
- Bogota, Colombia
- Quito, Ecuador
- Sao Paulo, Brazil
- Curitiba, Brazil
- Porto Alegre, Brazil
- Taipei, Taiwan
- Kunming, China

Advanced Development

- Dar es Salaam, Tanzania
- Peireira, Colombia
- Cali, Colombia,
- La Paz, Bolivia
- Arequipa, Peru
- Cleveland, Ohio, USA
- Delhi, India
- Ahmedabad, india
- Guangzhou, China
- Jinan, China,
- Guatemala City
- Panama City
- Santiago de Chile
- Dakar, Senegal
- Accra, Ghana

TransJakarta BRT System Opened 2004, Corridor II & III Opened 2006



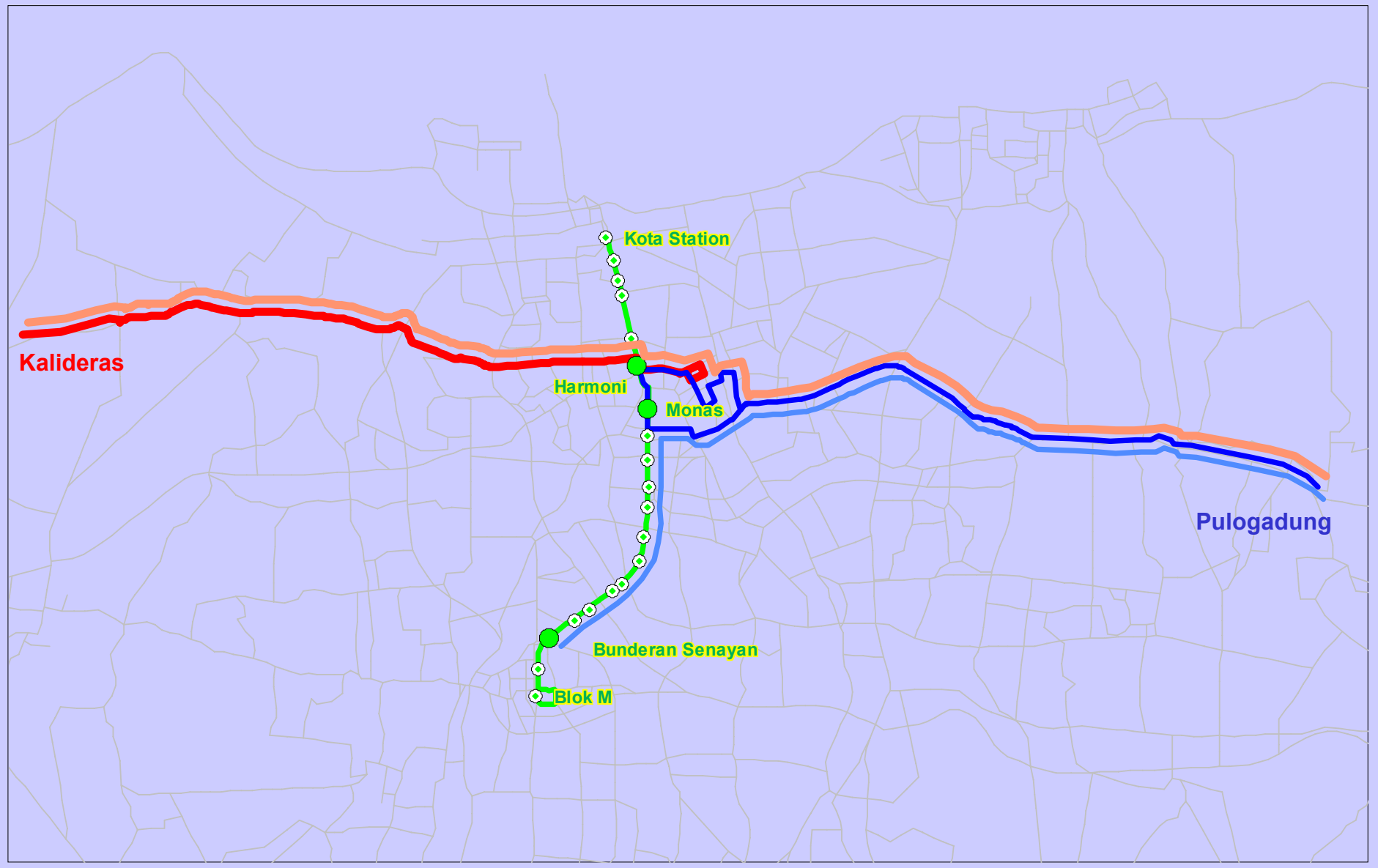
**Daily
ridership:
100,000**

**Mode shift
from cars:
19% (JICA)**



TransJakarta/TransBatavia In Operation as of January 2006

Corridors I - III



Each TransJakarta Corridor Has Sidewalks Widened and Reconstructed.



Before



After

Jan 2006: Gov. Sutiyoso Announced 6 more corridors, and major pedestrian zone in North Jakarta

Mexico City Metrobus BRT Opened 2005 250,000 daily passengers



Seoul's new BRT system



Guayaquil, Ecuador

New Waterfront Park



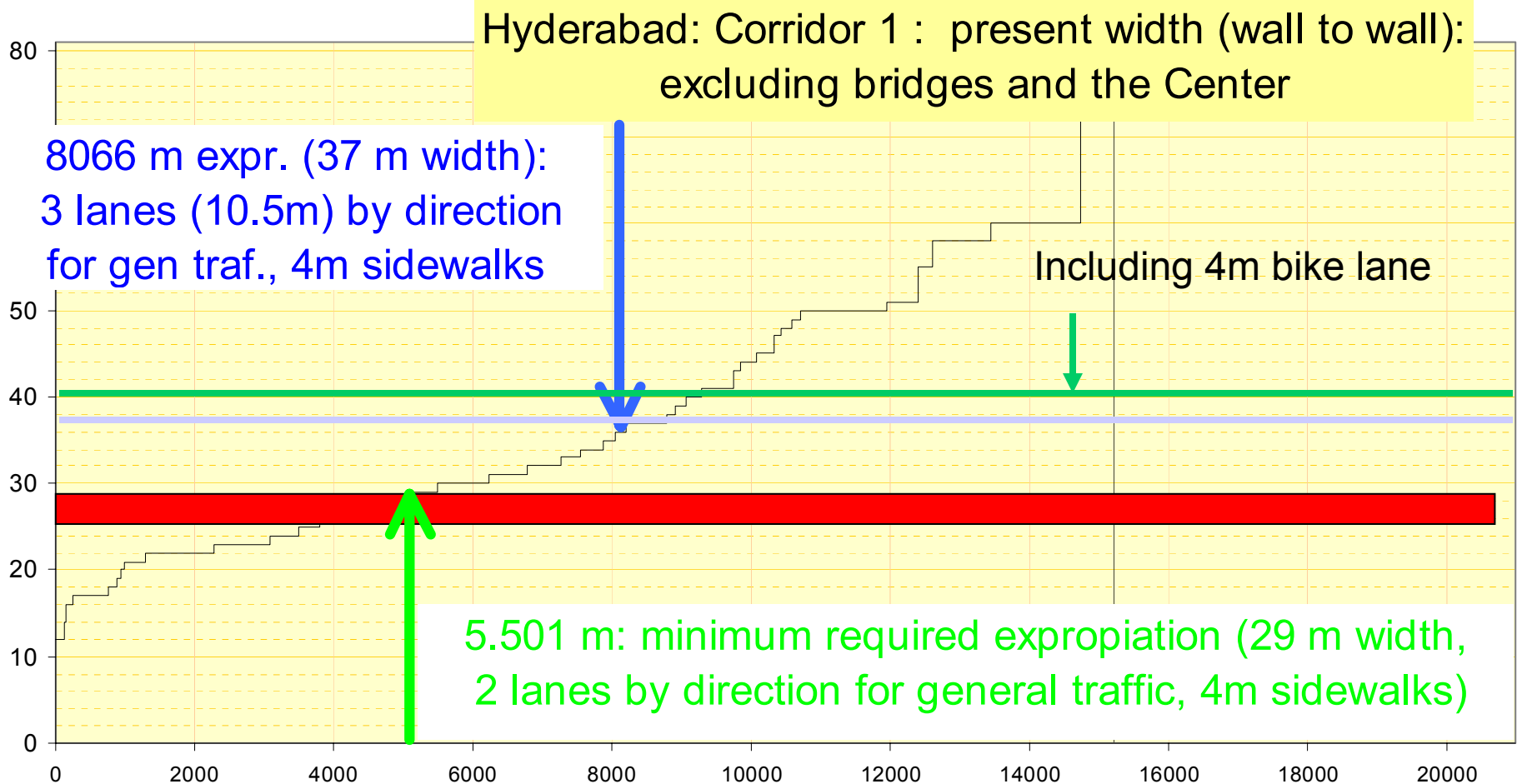
New BRT system Under Construction



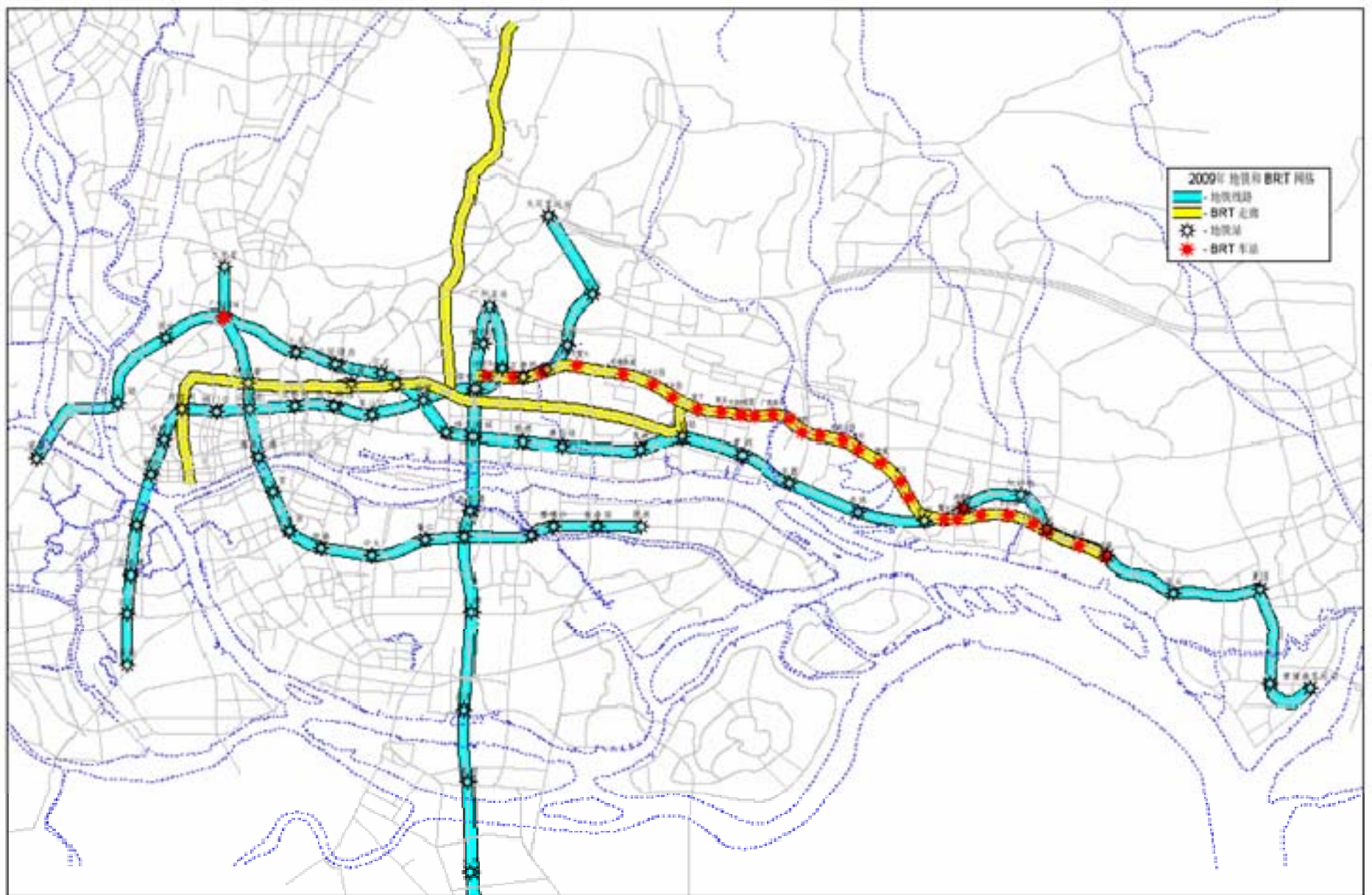
Beijing BRT, <2000 pax/day

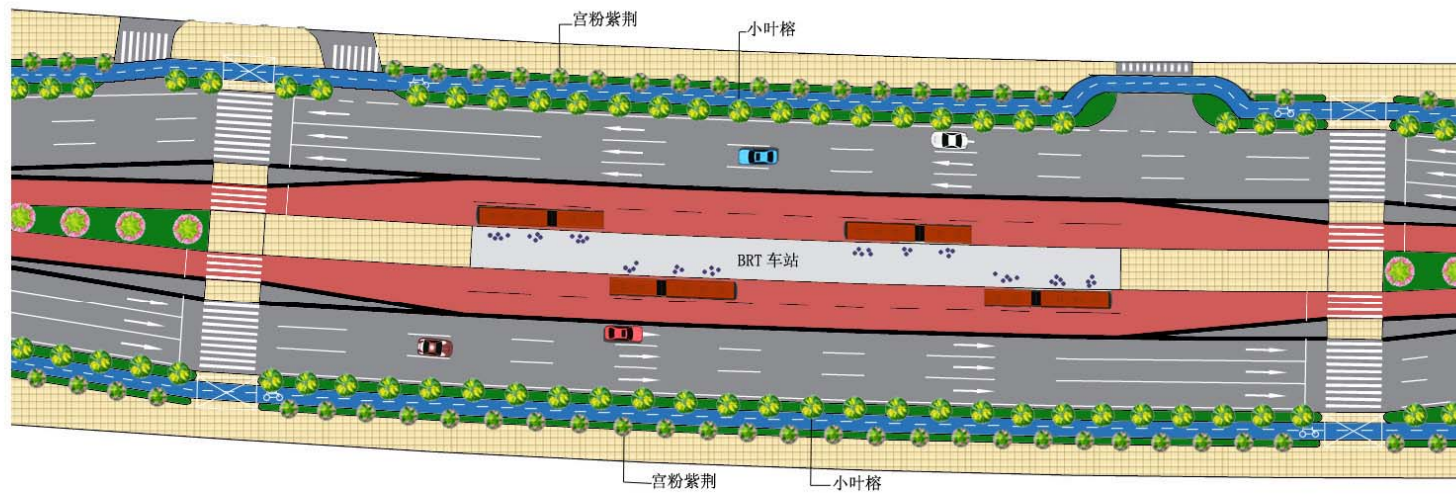


Additional Land Acquisition Needed for 4 meters of bike lane: Hyderabad



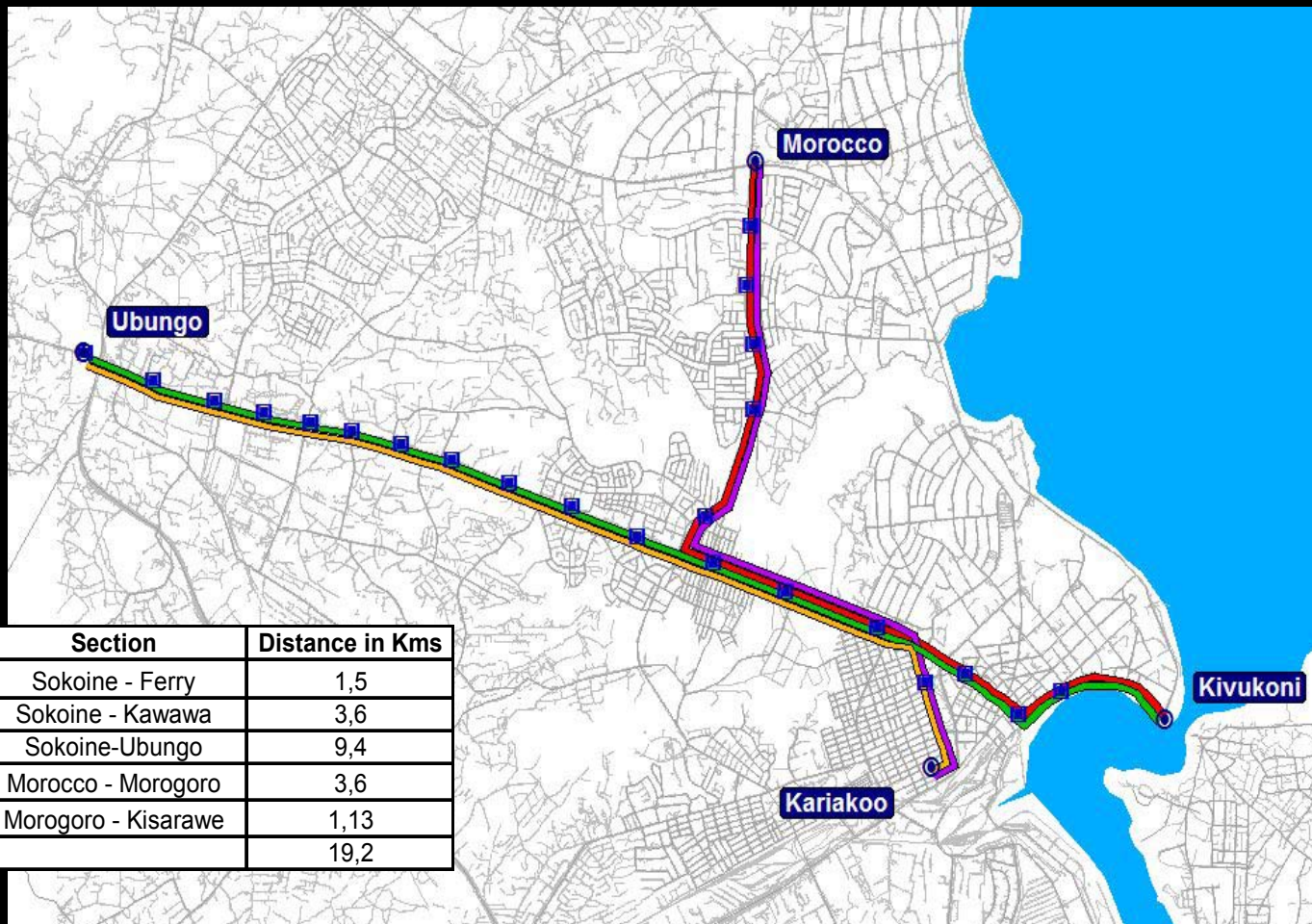
Advanced Planning: Guangzhou 2009 BRT and Metro network





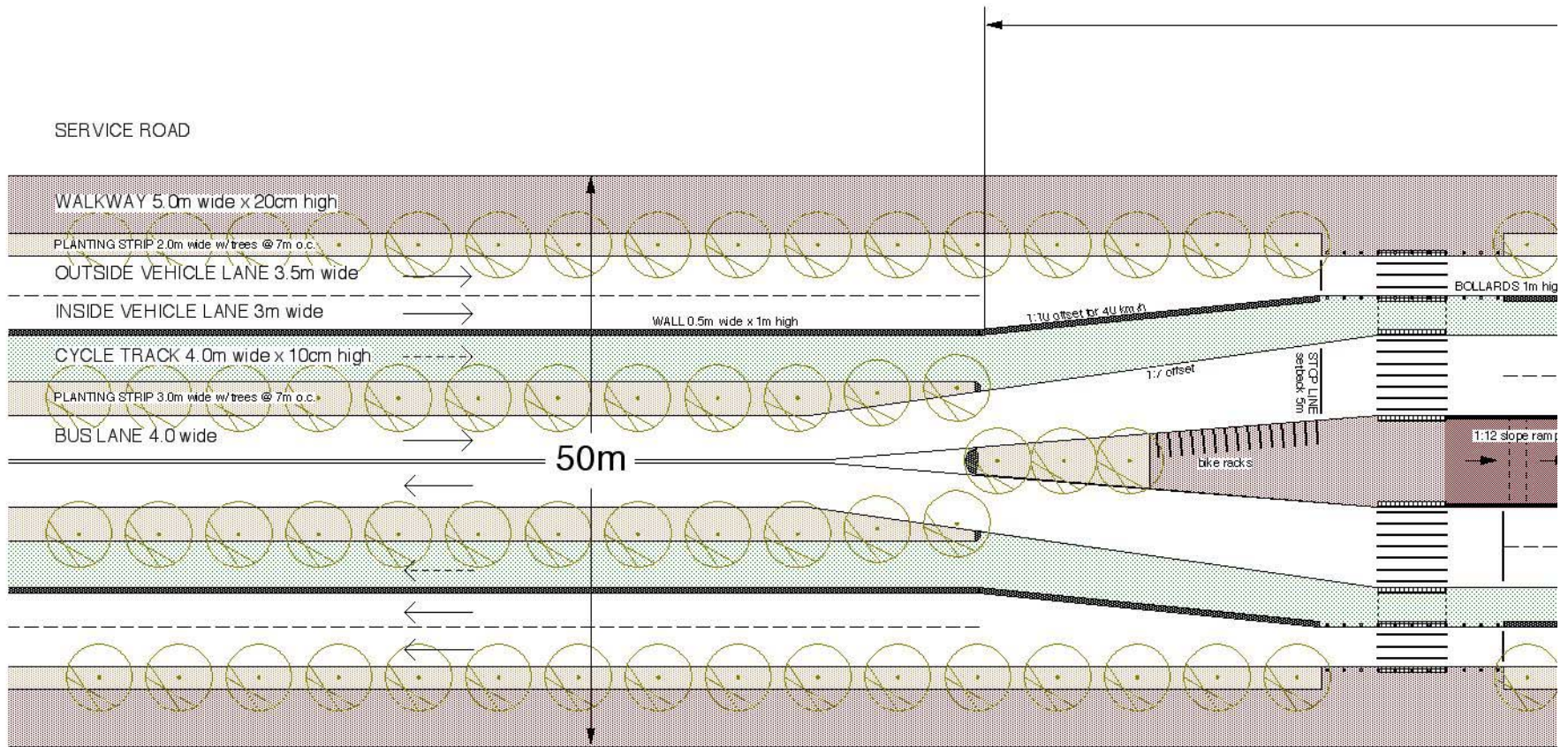
After tearing out bike lanes and banning bikes on this road, Guangzhou now recognizes a 'complete street' should have a bike lane

Best Hope for Africa; Dar es Salaam





Dar Es Salaam Rapid Transit
Morogoro-Bibi Titi station
artist's conception
Luc Nadal for ITDP
LNadal@itdp.org © 2006



A

Typical Bus Rapid Transit Station
Morogoro Road, Dae es Salaam, Tanzania

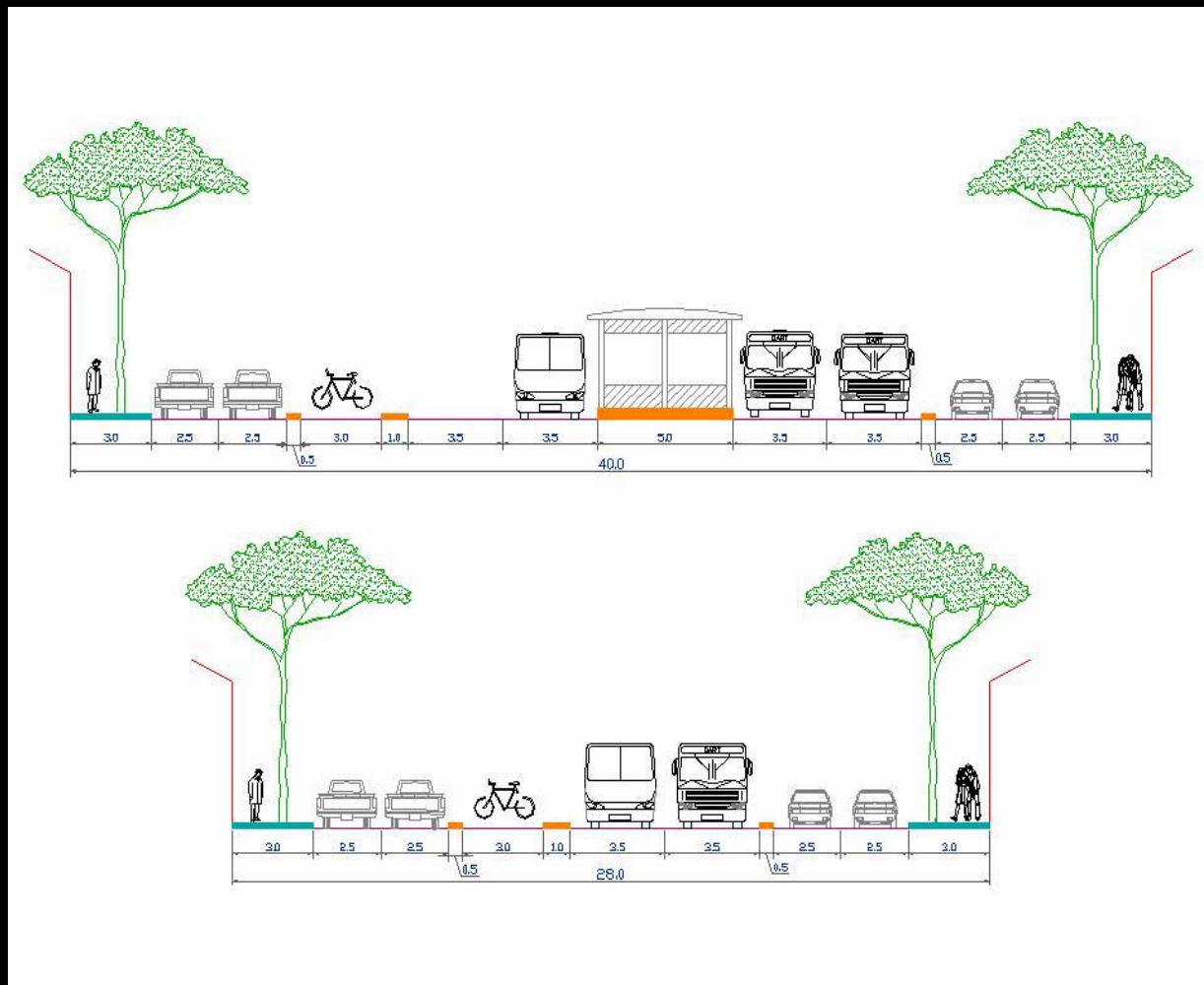
MINIMUM SIZING REQUIREMENTS

FOR DISCUSSION ONLY

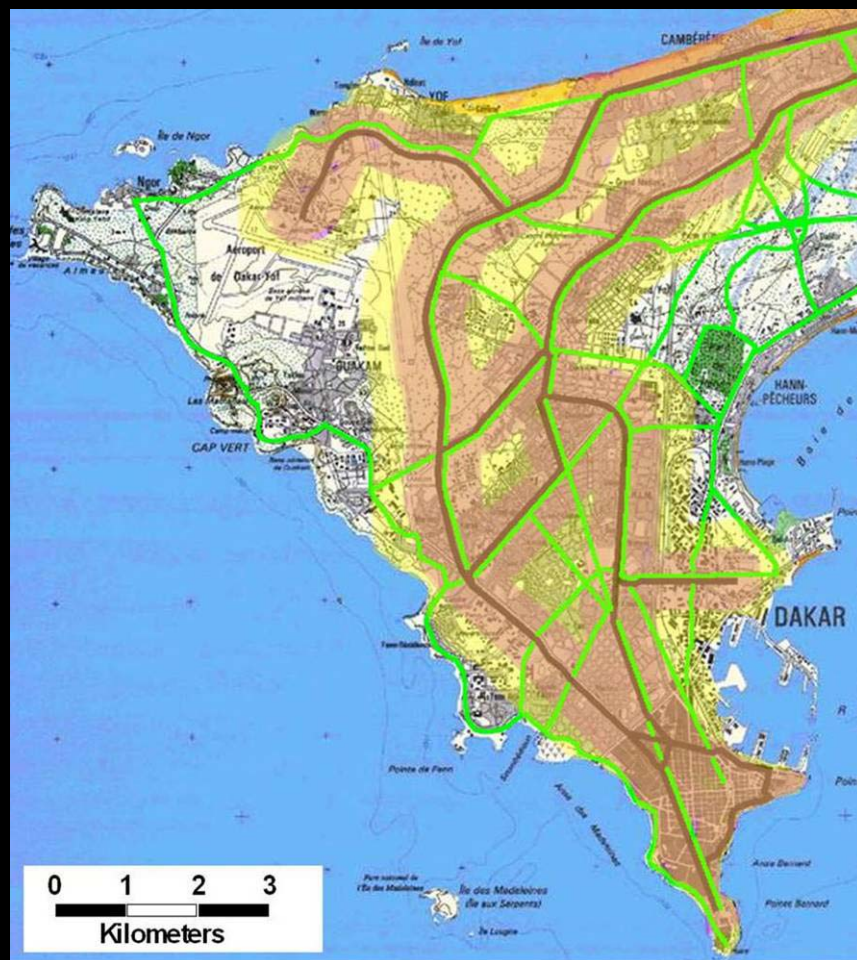
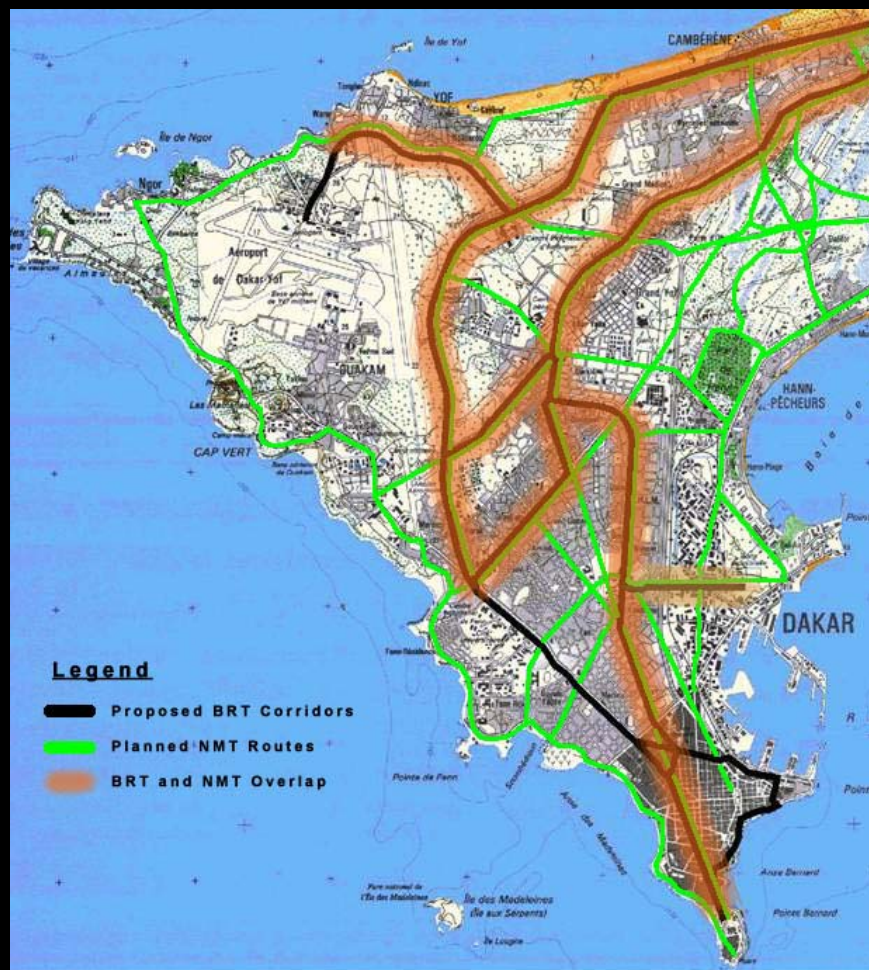
ITDP w/ input from LOGIT & ICE
June 2005

Proposal to put bike lane next to the busway

Where should the bike lane go in relation to the busway? A Radical Proposal I for the Dar es Salaam BRT Corridor



BRT/NMT Planning -Dakar









Seoul Removed 5km Elevated Highway



67 Flyovers Investigated for Destruction



Other Cities Removing Elevated Roads

- Milwaukee
- San Francisco
- (your city here...)

The Bike and Ped Facilities Revolution: Some Cities with New Bike Facilities and More planned (Many financed by the GEF)

- Cape Town
- Dakar
- Mexico City
- Santiago
- Rio de Janeiro
- Curitiba
- Sao Paulo
- Trujillo
- Arequipa
- Bogota
- Pereira
- Ahmedabad (50km)

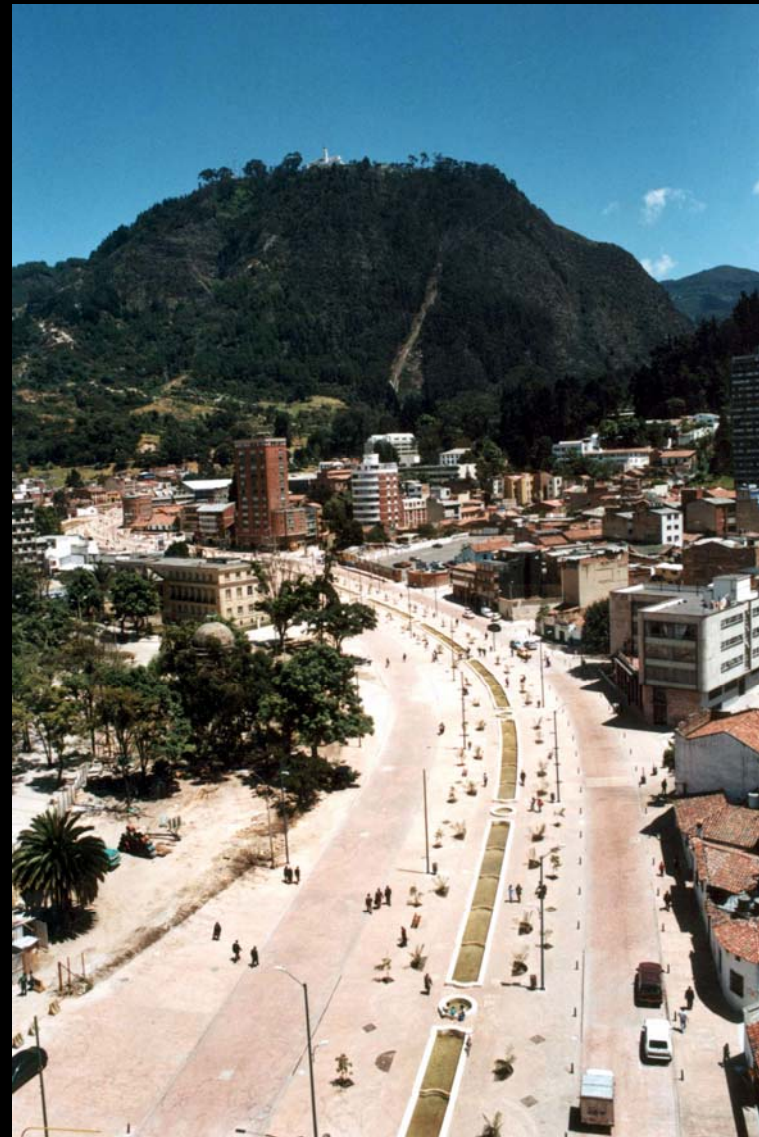
CITIES THAT HAVE RECENTLY CLOSED DOWNTOWN STREETS

- BERN, SWITZERLAND
- OXFORD, UK
- EDINBURGH, UK
- LONDON, UK
- FRANKFURT, GERMANY
- FREIBURG, GERMANY
- MUNICH, GERMANY
- ZURICH, SWITZERLAND
- SANTA CRUZ, CALIFORNIA,
USA
- SHANGHAI, CHINA
- BOGOTA, COLOMBIA
- CURITIBA, BRAZIL
- MANAUS, BRAZIL
- CARTAJENA, COL.
- WUHAN, CHINA
- BUDAPEST, HUNGARY
- KRAKOW, POLAND
- BARCELONA, SPAIN
- BURLINGTON, VT, USA

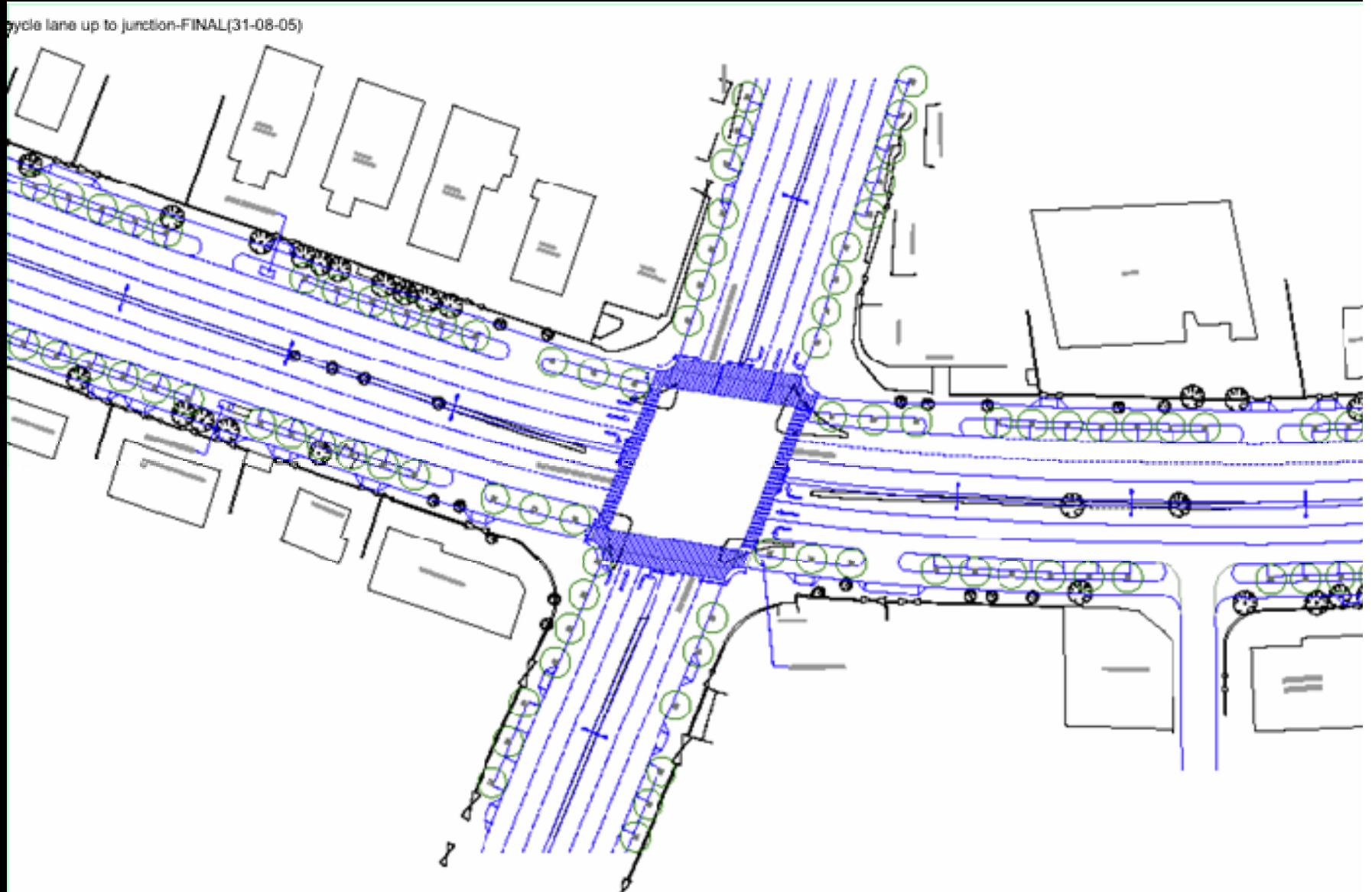
Santiago's New Bike Lanes



Bicycle and Pedstrian-Only Streets Connect Metrovivienda to TransMilenio



ITDP Redesign for Bike Corridors, Ahmedabad



Phase I Pedestrianization: Yogyakarta





ITDP
Institute for Transportation
and Development Policy

Yogya rebuilt approach roads and redirected through traffic as 'Phase I' pedestrianization of Malioboro Rd.



8 1:51



8 0:51

A 'signal' of seriousness to the mafias that are blocking the project

Post Traffic Calming: cropping up in China, Cape Town, etc.



Guangzhou

Sao Paulo's Ped Zones are becoming 'post traffic calming'



Good Recent Examples from China



Retractable Bollards Restrict Vehicles but can be removed.

Nanjing Rd., Shanghai



FANCY PAVING STONES

Wuhan, China

Shanghai



**1920's District,
Xintiandi**



Off Huaihai Rd

First Congestion Charging Programs

- Stockholm, Sweden (2006!)
- London, England, (Expanded)



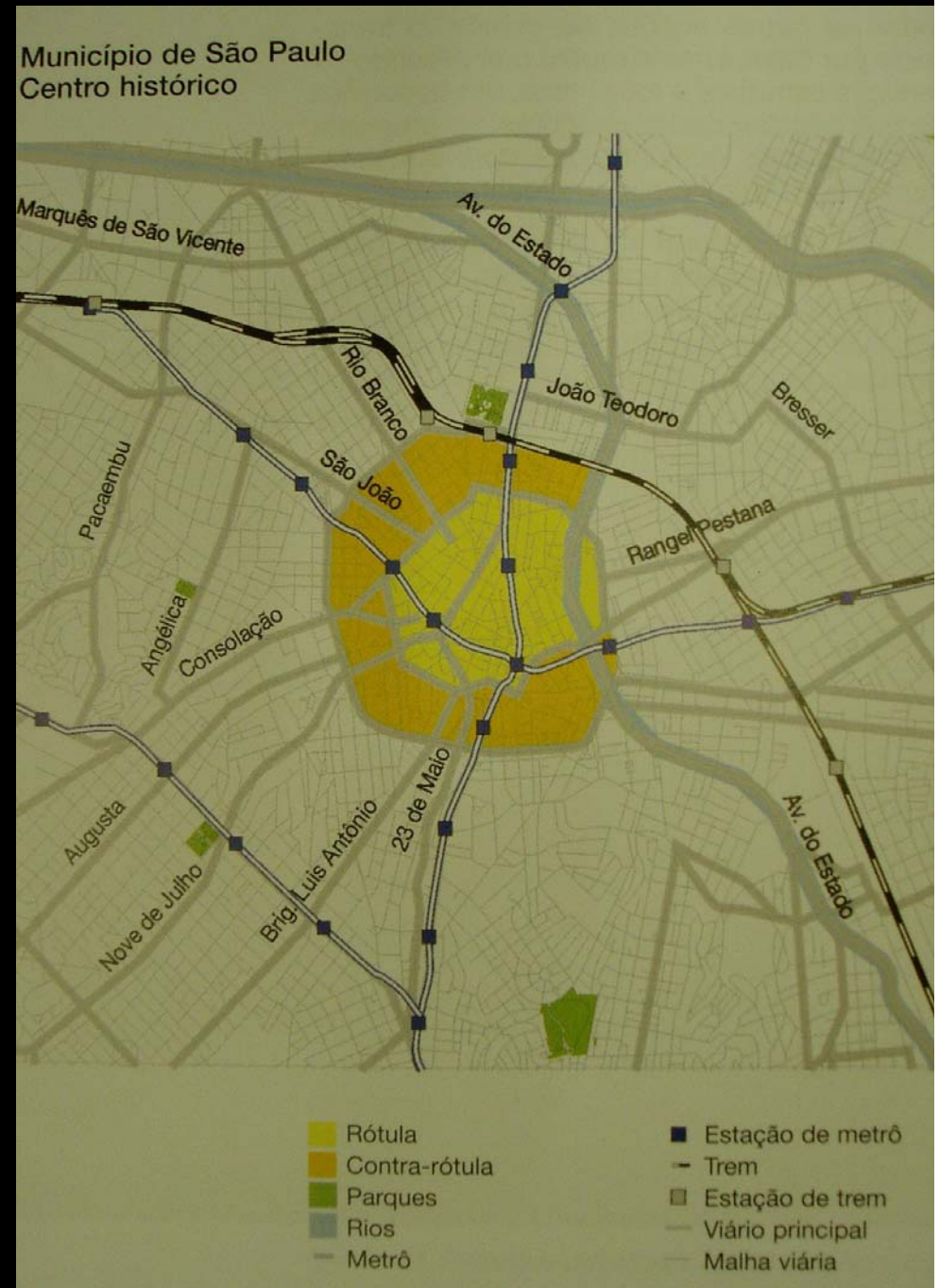
Other cities considering Congestion Charging

Jakarta

Guangzhou

Sao Paulo (?)

New York (?)



Modernizing the Indian Cycle Rickshaw

**Production Cost:
Same as
traditional
rickshaw**



- **30 kilograms lighter weight**
- **Wide, comfortable woven nylon seat**
- **Permanent canopy for sun and rain protection**
- **Integral (one-piece) frame two speed gear system**

The First Trial Fleet Was Sold to the Wallahs at the Sheraton near the Taj Mahal.

A marketing firm was
hired to sell the vehicles.

There were bonuses for
each sale.



Selling the traditional financiers and fleet owners in the city of Vrindavan led to the rapid replacement of the entire fleet (1000 vehicles).



Why Did the Financiers (Maleks) Switch?



- The operators got more passengers because the vehicles were more comfortable.
- The maleks were able to charge higher rent.
- The vehicles cost only marginally more.
- Hence, the new vehicles were more profitable.

NOBODY (EXCEPT THE PRESS) CARED ABOUT THE HUMANITARIAN REASONS!

Today...

- **Over 150,000 modern cycle rickshaws are operating on Indian Streets**
 - **They operate in 9 Indian cities**
 - **There are over 20 makers in Delhi and another 10 assemblers and manufacturers of the modern rickshaws around India.**
-
- **None of the gear systems were commercially accepted.**
 - **Certain elements of the traditional vehicle were reintroduced, increasing the weight, so total weight reduction was only about 10kg-15kg.**

Yogya Becak Modernization



**Yogyakarta Prototype Finalized
65 Modernized Becaks Completed: 30 of final
design. HALF the original weight. But without NMT
zone, market is weak, being taken by motorcycles**



30kg lighter
Much Safer Handling



New



Old

Over 120 Modern Becaks are on the Road in Yogyakarta



New



Traditional

Launch with Ministry of Tourism, Yogyakarta





CALIFORNIA BIKE COALITION

First Shipment: All 1920 Bikes Sold at 16% Rate of Return

Second Shipment of 1,920

500 already sold:

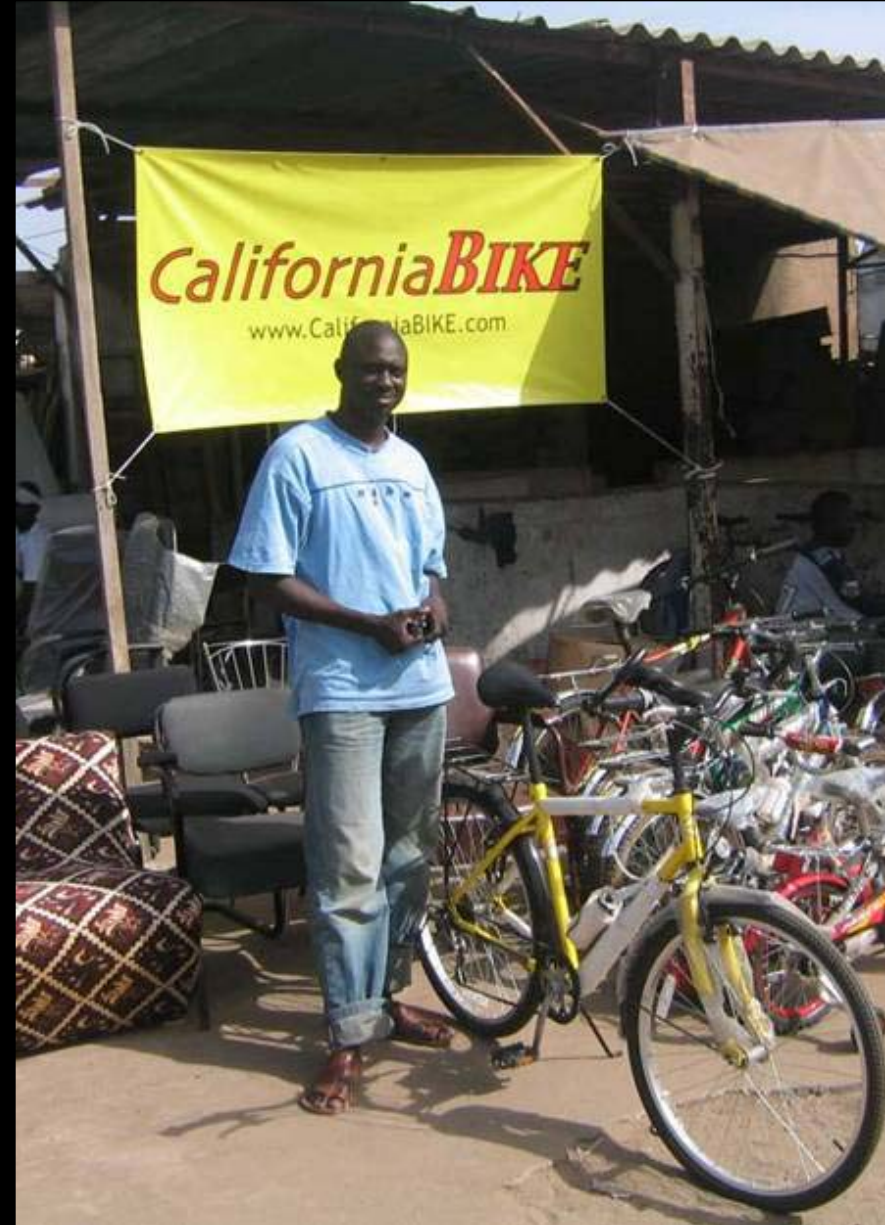
Thank you Trek!

Ghana	295
Senegal	295
South Africa	882
Tanzania	448



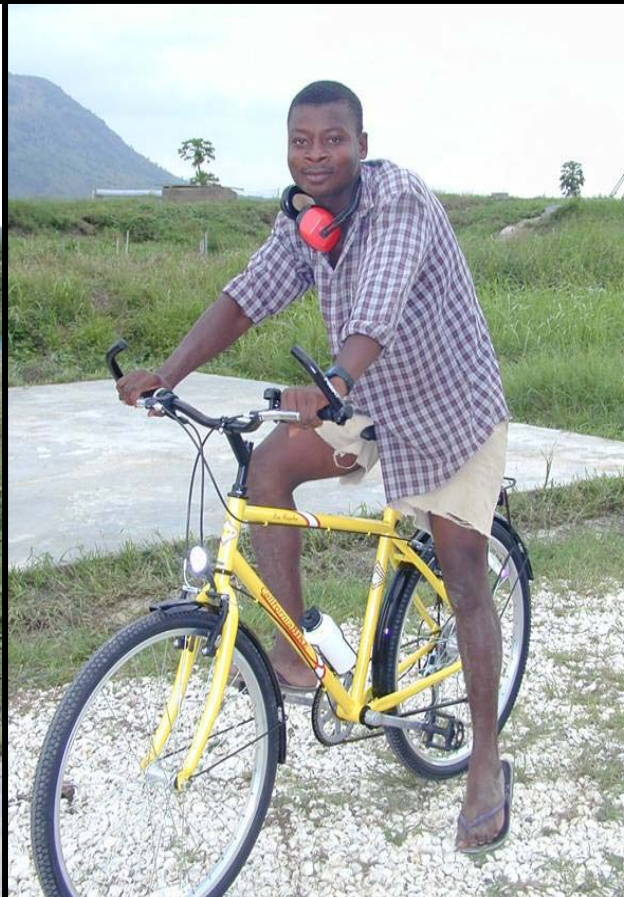
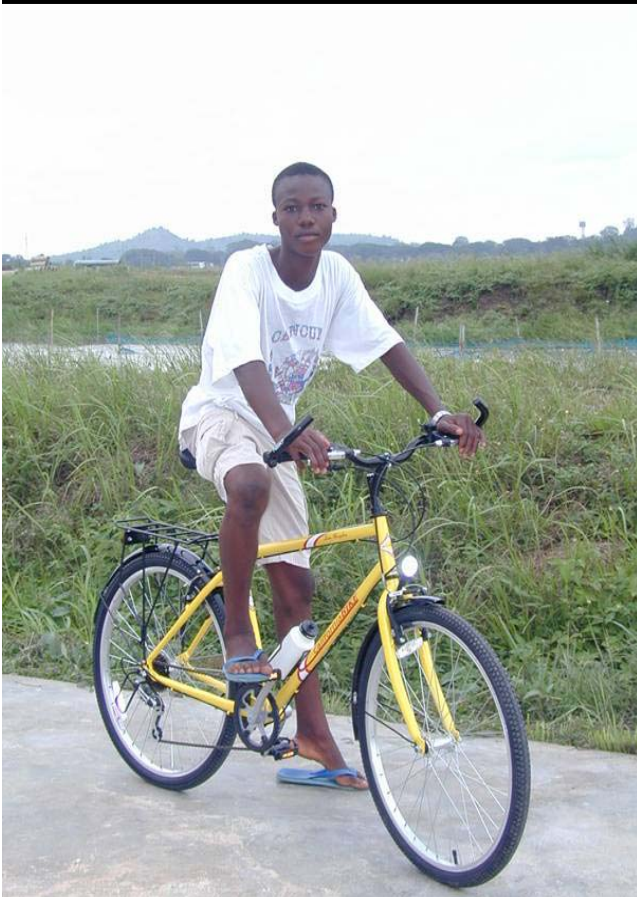


35 Independent Bike Dealers Have Joined the California Bike Coalition



Creative Credit Schemes

Employee Payroll Deductions



Mark Amechi, owner of Tropo Farms, Ghana West Africa

Bike Promotion



w/ BEN, S.Africa

First Ever Car Free Day in West Africa, Dakar



Bicycle Safety & Maintenance Classes for Children in Schools: Cape Town



First Car Free Days



Dakar, Senegal



Cape Town, SA



These Cities are going the Extra Mile

Yours could too!

Thank you!

www.itdp.org