

Reducing GHG emissions in the developing world

Asilomar 2005: Towards a Policy Agenda for
Climate Change

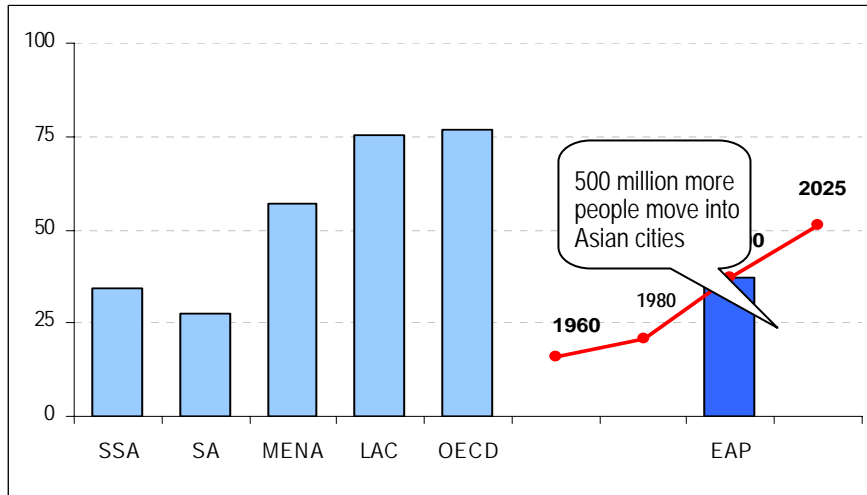
Shomik Mehndiratta
World Bank

August 25, 2005

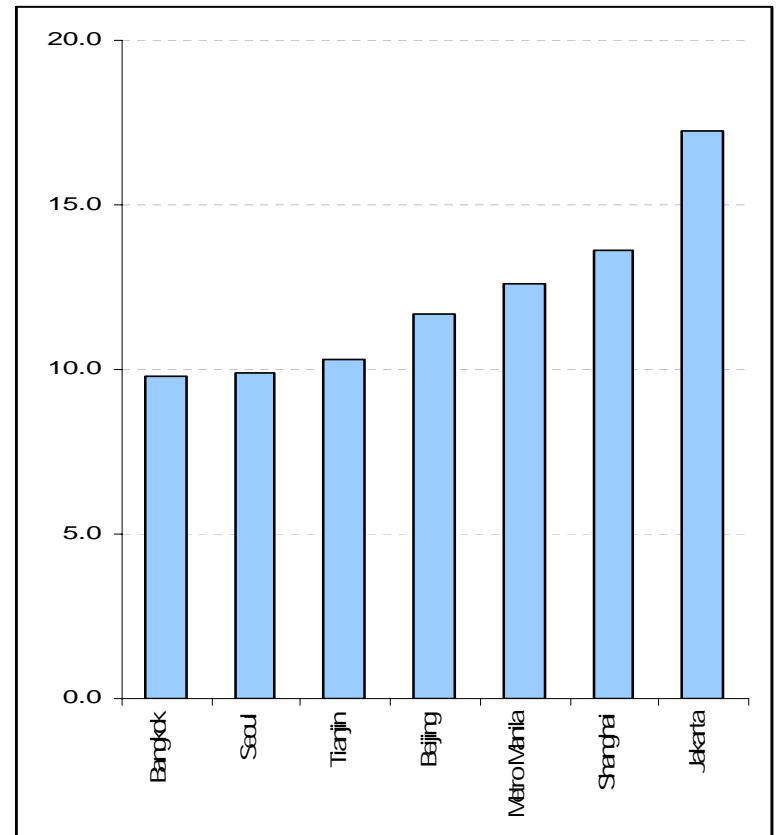
THE CONTEXT – RAPID URBANIZATION

... Just China will add 400 million urban residents in the coming 15 years

Urban population (percent total population)



Population, East Asian cities above 10 million inhabitants, 2015



Congestion

Urban/metropolitan Management

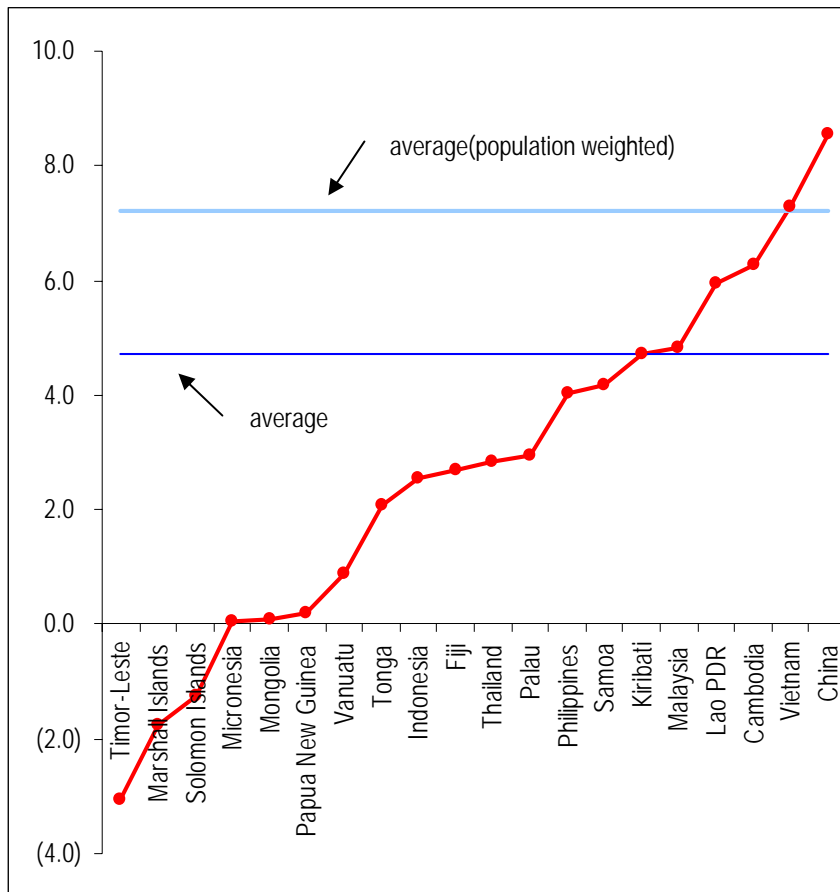
Pollution

THE CONTEXT – MOTORIZATION

... strong aggregate growth, leading to significant increases in motorization

Average annual growth (percent), 1994-2003

Motorization rates in asia

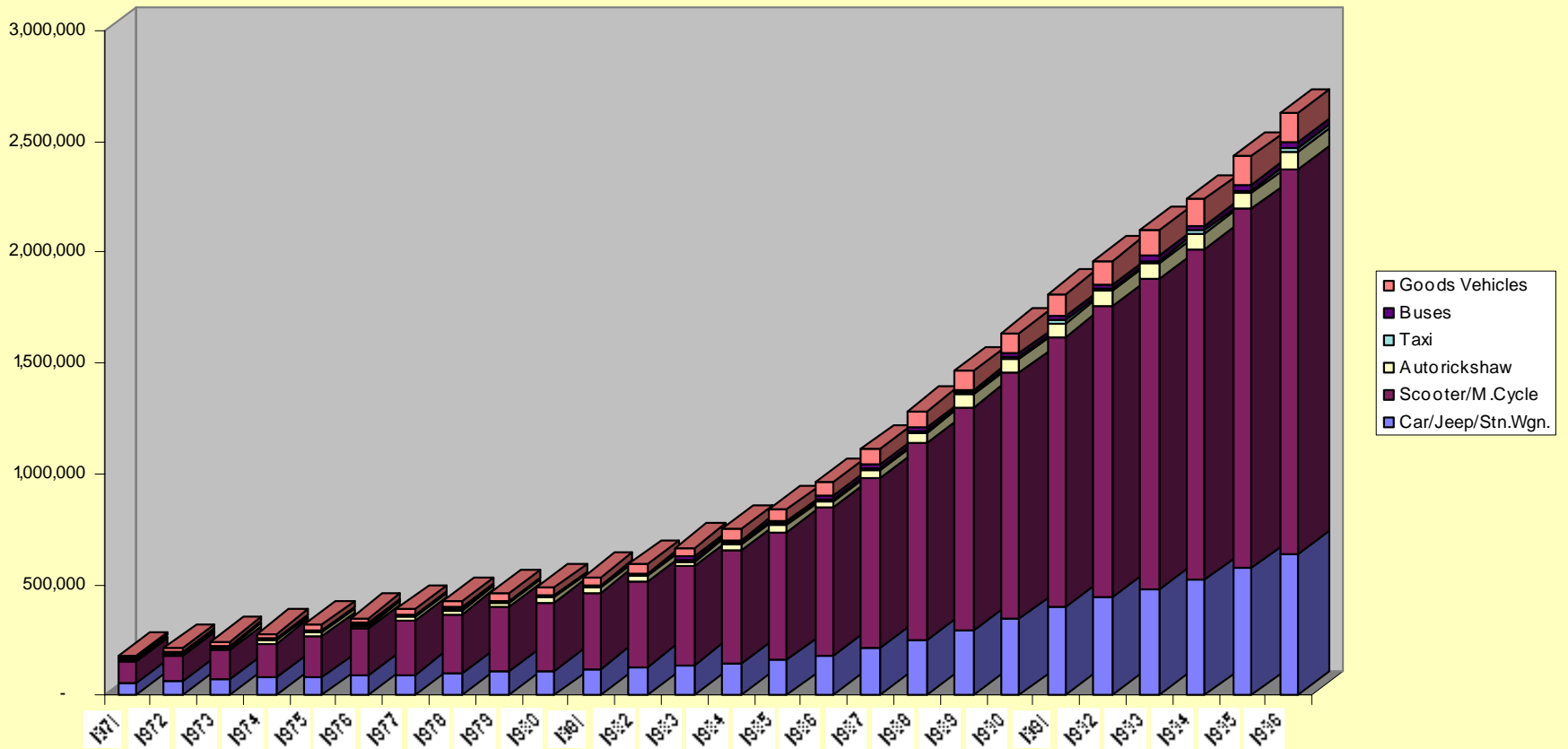


China

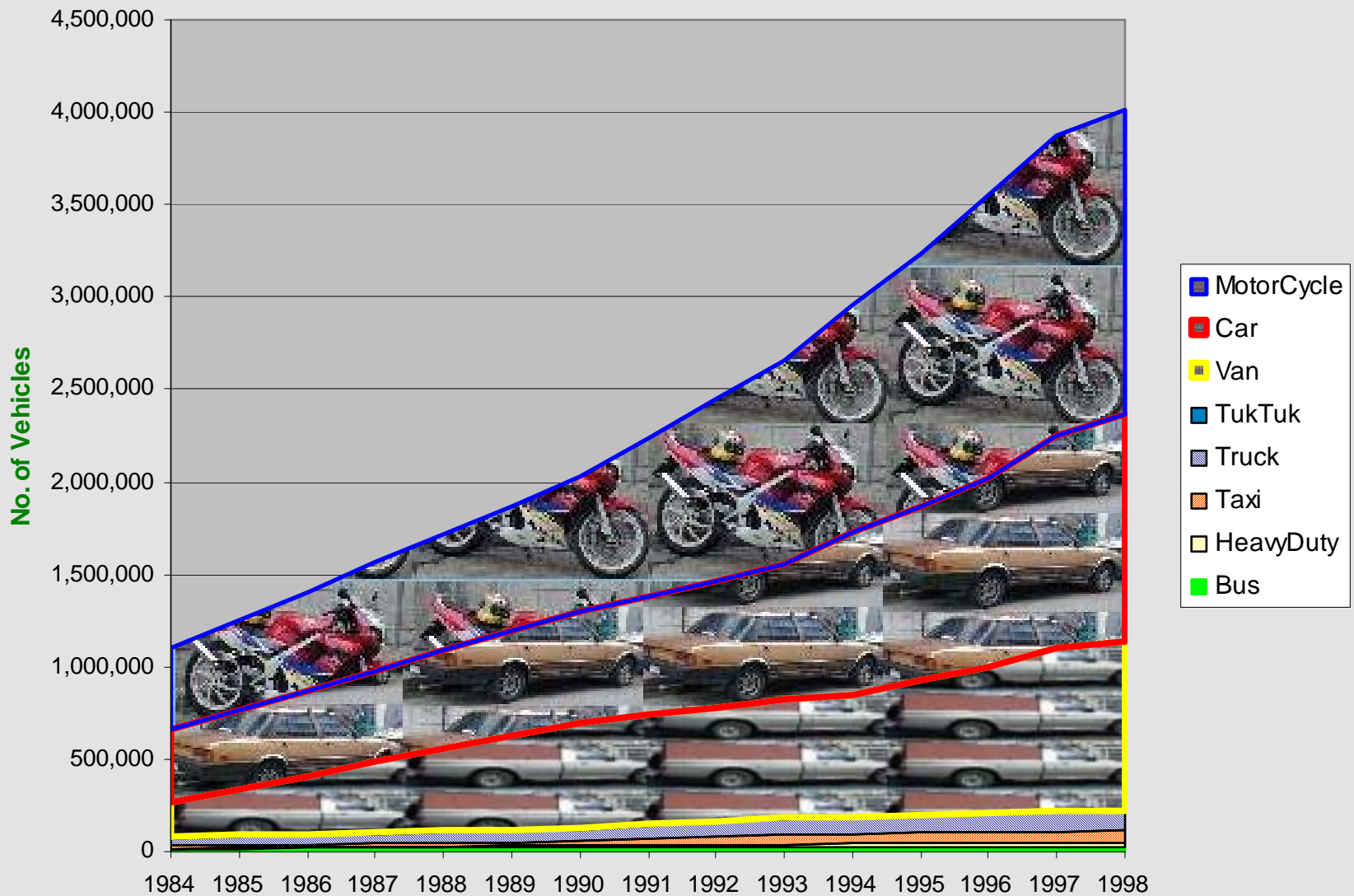
- Cars increased from 1 million to 20 million in last 10 years
- Forecast for 2020:
60 – 100 million

MOTORIZATION – DELHI

Historical Vehicle Growth: Delhi

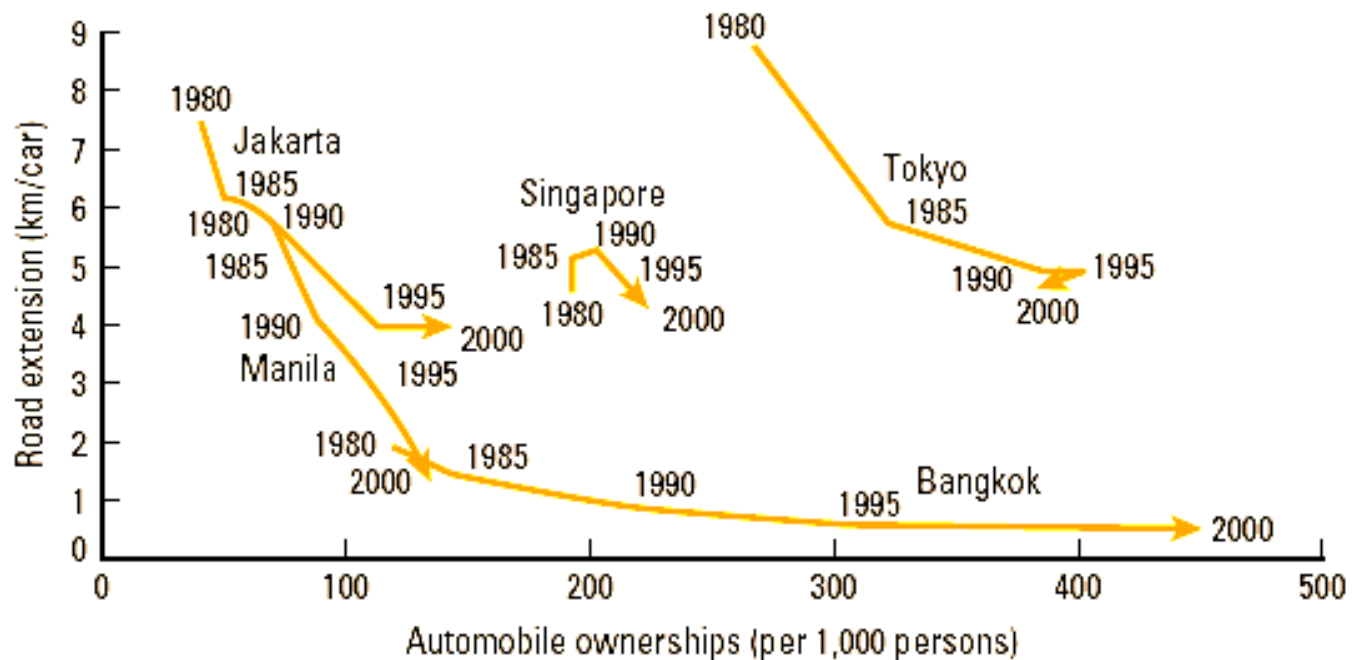


MOTORIZATION – Bangkok



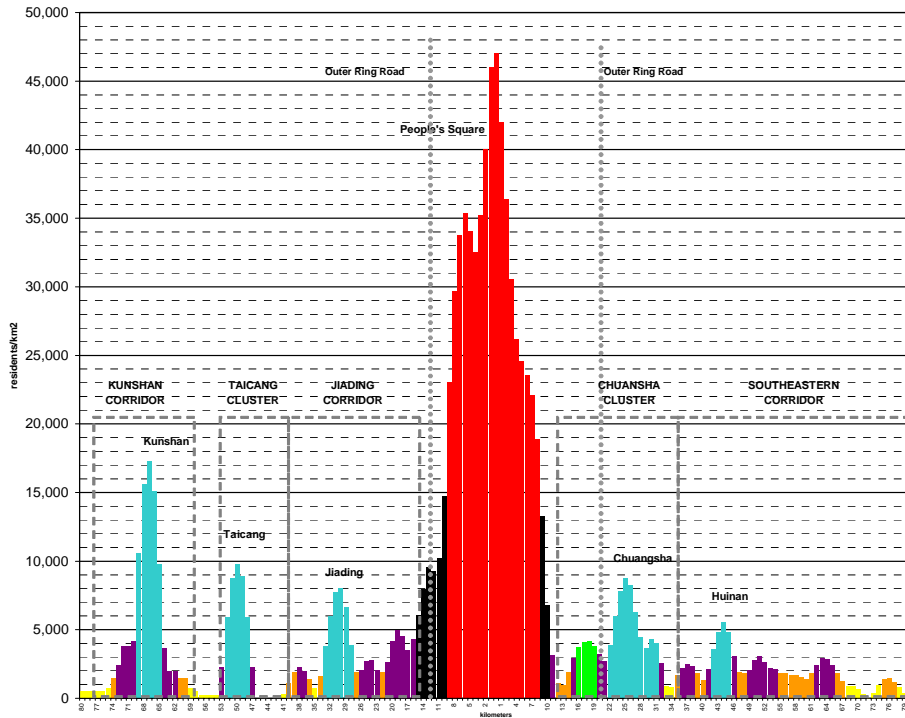
MOTORIZATION AND CONGESTION

Road extensions (km/car) against car ownership (per 1000 inhabitants)

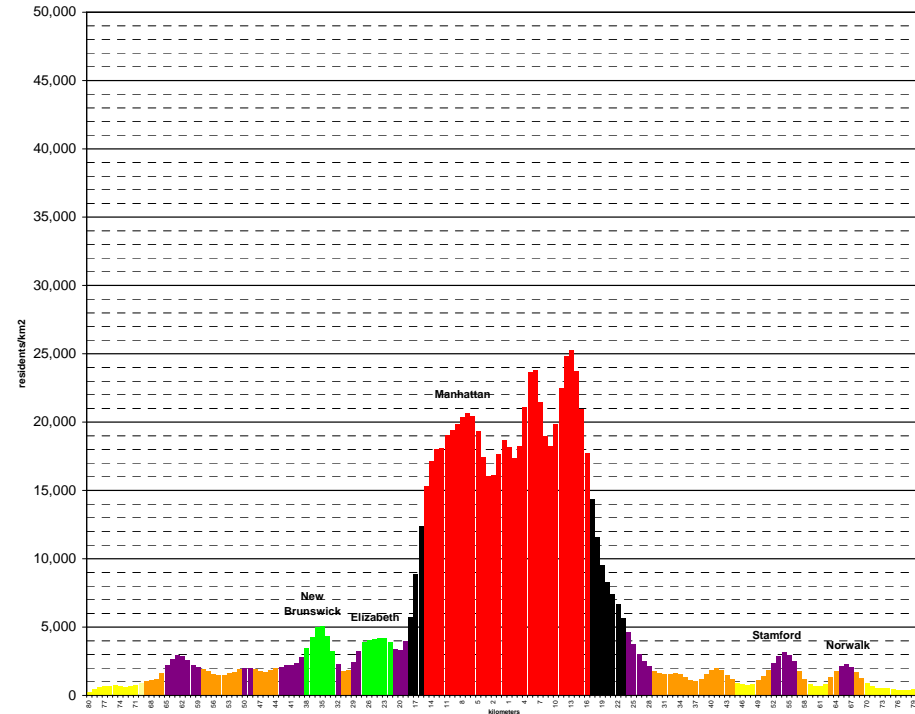


THE CONTEXT – HIGH DENSITIES

... densities are very high and cities are compact



Shanghai



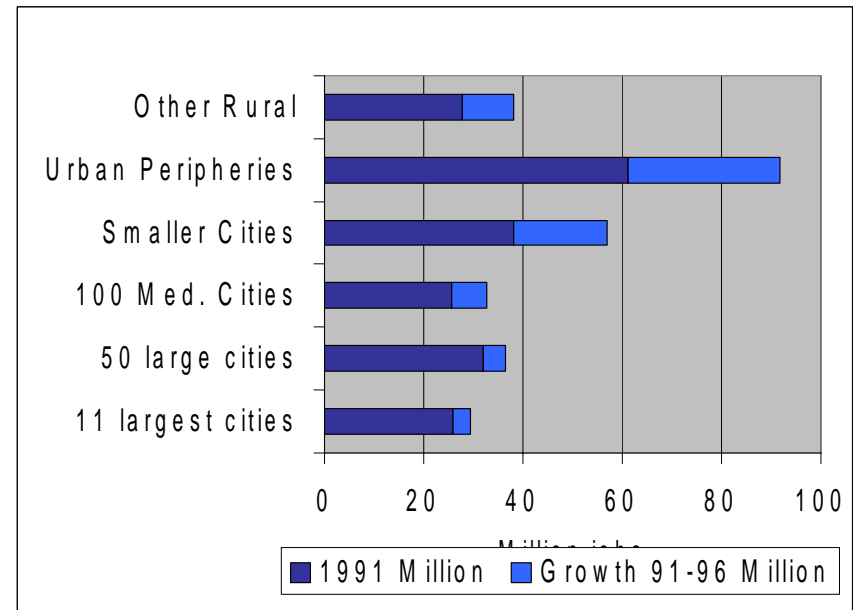
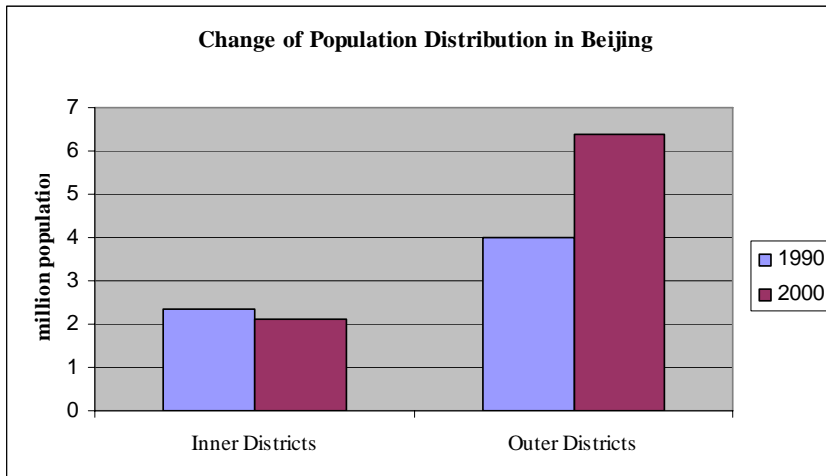
New York

Source: CHREOD various

THE CONTEXT – HIGH DENSITIES

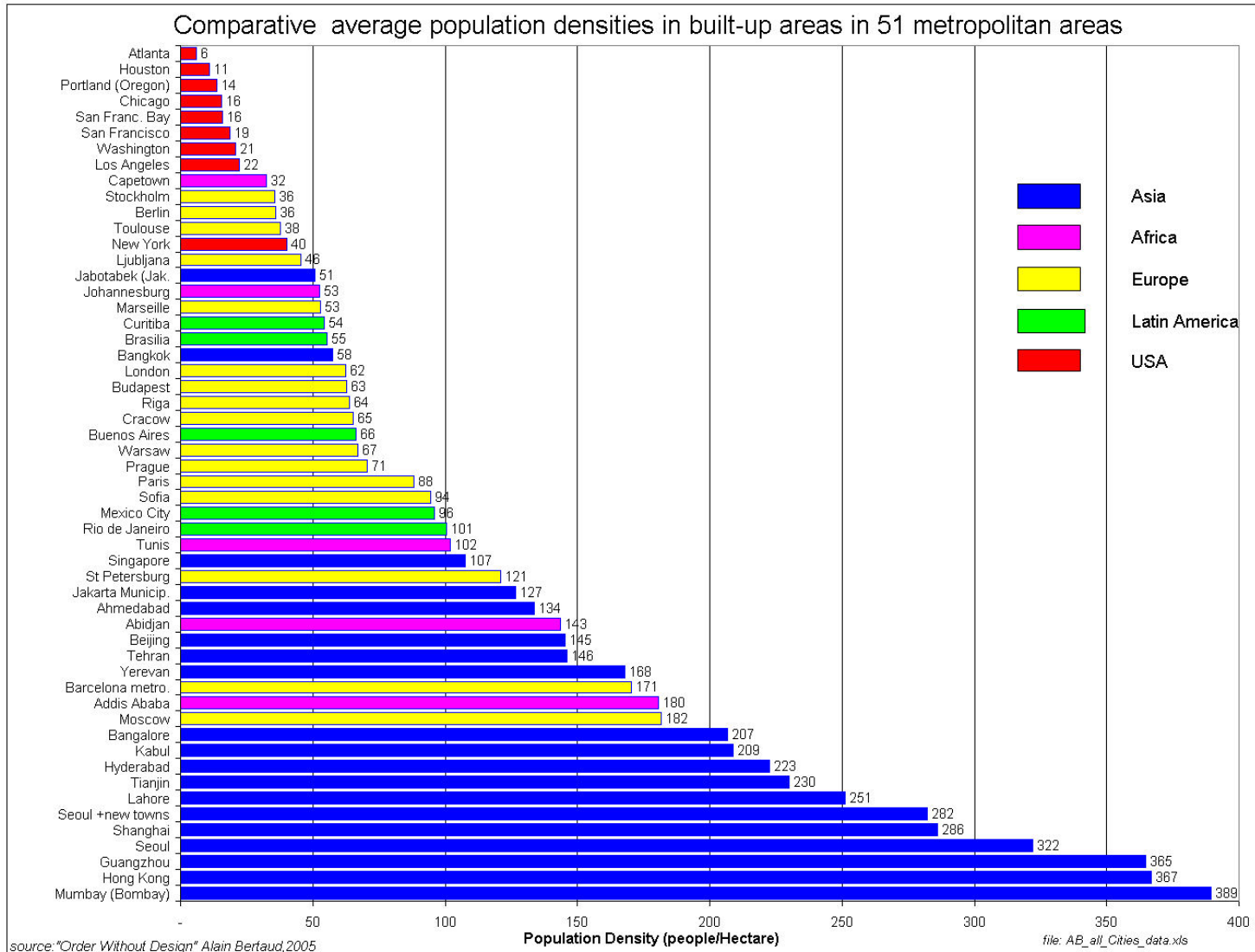
... cities are expanding ...the growth is in the periphery

China non-farm job growth 1991-96



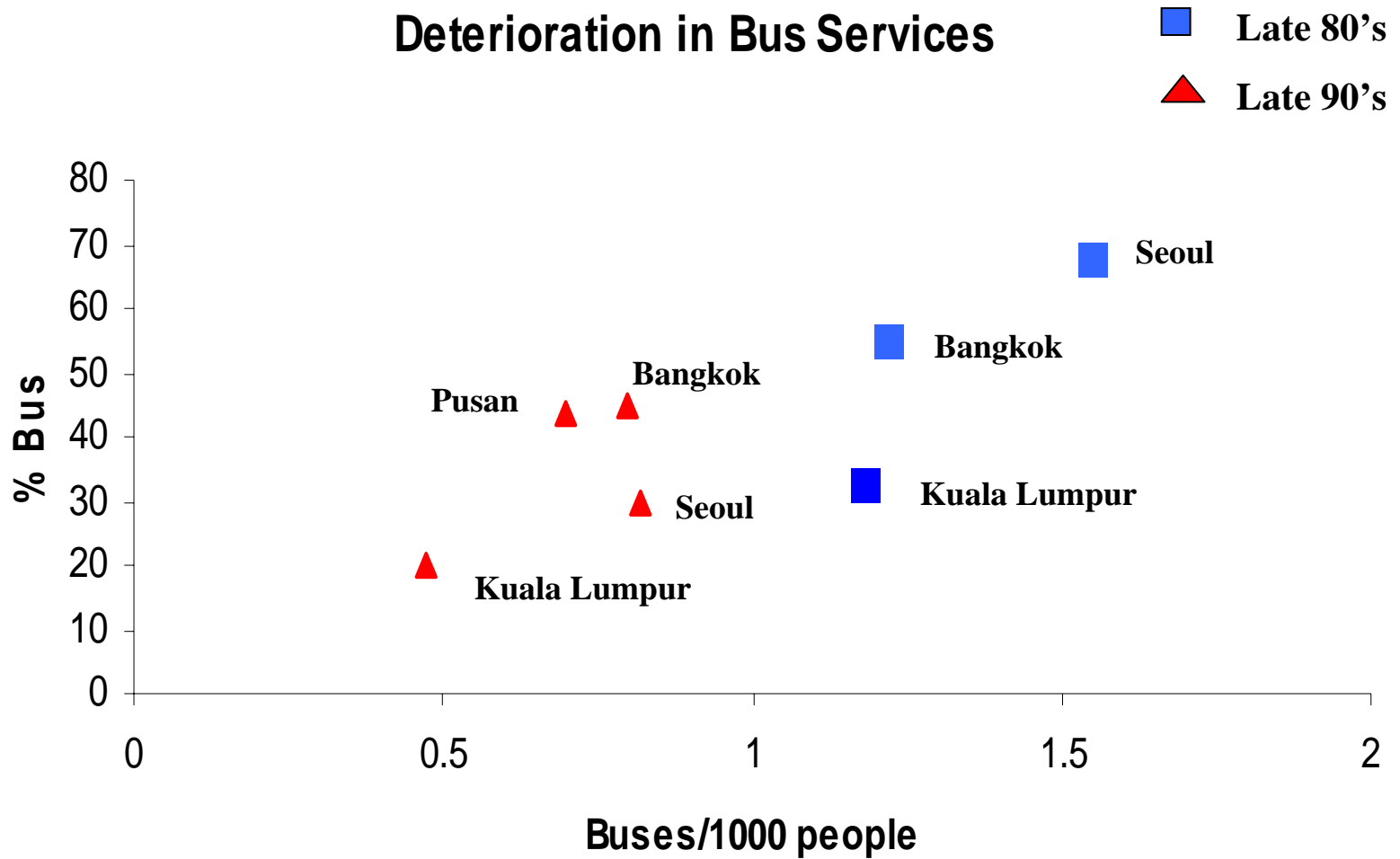
THE CONTEXT – HIGH DENSITIES

... but densities will remain too high to serve effectively with auto-model



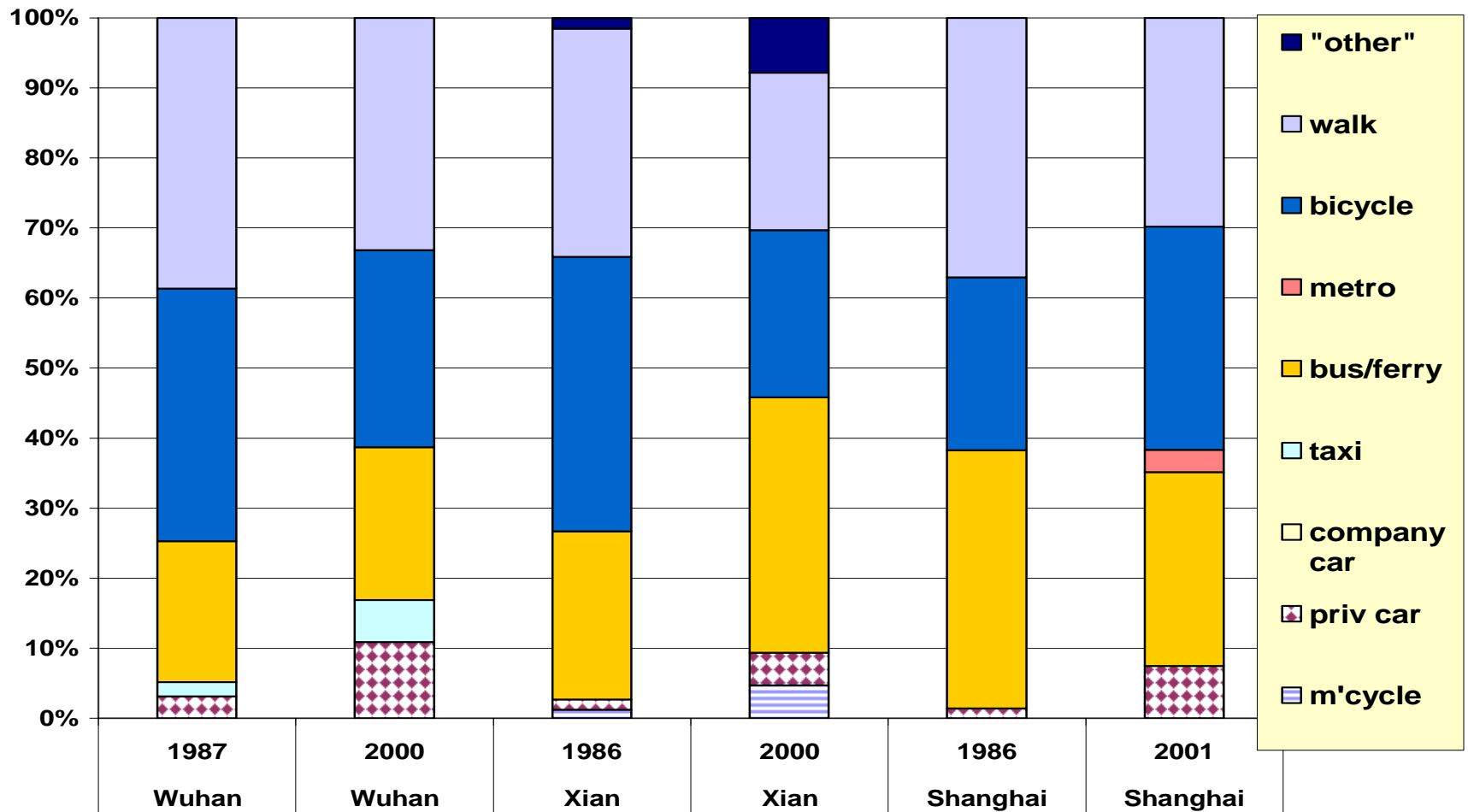
THE CONTEXT: FRAGILE PUBLIC TRANSPORT

Deterioration in Bus Services



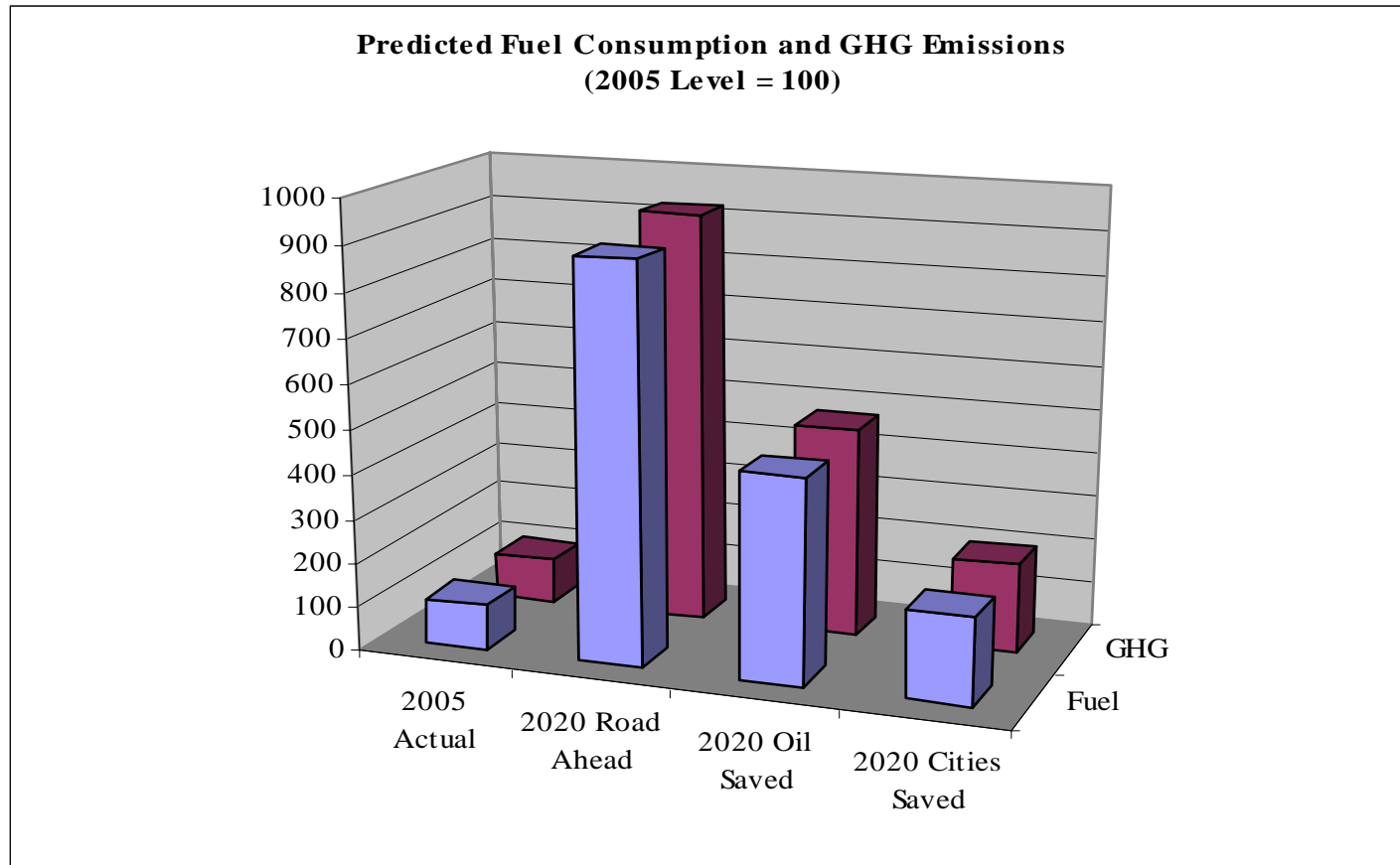
THE CONTEXT – HIGH NON-MOTORIZED SHARE

... though NMT remains unsupported and falling



THE CONTEXT – POTENTIAL FOR SIGNIFICANT INCREASE IN GHG

...but with potential to significantly reduce growth



2030 Transport CO₂ in 'Developing Asia' same as North America ~0.3 gT/yr from current 0.07 gT/yr

CLIMATE CHANGE – AN ALIGNMENT WITH THE BROADER URBAN TRANSPORT CHALLENGE

- Cities will grow but *much of the urban growth has not yet happened*
 - The opportunity exists to drive it
- Recognition of the central role of public transport
 - Auto ownership will be less than 1 in 10 even by 2020
 - Need to nurture affordable effective solutions
- Densities so high that 'managing motorization' with demand management only solution to urban transport agenda
 - Shanghai (ownership), Hanoi (MC, car ownership), HCMC (MC ownership)
 - KL, Bombay, others considering use restrictions
 - Can existing shares including NMT be preserved?

GHG CONCERNS – CLIMATE CHANGE: AN OPPORTUNITY FOR URBAN TRANSPORT?

- Climate change not a high priority for most developing world cities
- Local issues are relevant. public transport, congestion, local air quality, urban livability are
 - Climate agenda consistent with this broader 'sustainable transport' agenda
- Climate change concerns generate financing
 - Easier/cheaper to prevent emissions than to eliminate them?

GHG INSTRUMENTS — Global Environment Facility OP11

- “(to) reduce GHG emissions from ground transport..”
- GRANT FACILITY
- Current focus is on
 - modal shift to public transport
 - promotion of non-motorized transport
 - integration of land-use and transport planning
 - sustainable transport demand management policy
 - Freight rationalization
- Several WB-GEF joint initiatives
 - Mexico, Chile (Santiago), Lima,
 - Brazil, Ghana, China, Vietnam (Hanoi), Regional initiatives

GHG INSTRUMENTS – GEF in East Asia - Hanoi

- WB US~170 million Hanoi Urban Transport
 - BRT. Converting existing roads
 - Roads to facilitate peri-urban development
 - Capacity building
- GEF~US\$8-10 million.
 - Reducing BRT risk (\$0.5m)
 - Making BRT mode of choice (\$4m)
 - PT regulation and planning (\$0.7m)
 - Assistance for Planning dept (\$1.5m)
 - Transport planning support (\$0.7m)
 - Pedestrian & cycle facilities (\$1.5 m)



GHG savings depend on baseline motorization estimates

- GHG savings from motorcycle to bus switch minimal

GHG INSTRUMENTS – GEF in East Asia - China

- GEF US~62 million
 - \$12m UT strategy work
 - \$50m pilot demonstration investments (WB/other)
- Review national UT strategy
 - Financing structures
 - Intergovernmental relations
 - Planning & policy
 - Update technical standards & guidance
 - Training
 - Dissemination



Potential for significant GHG savings

- Uncertainties will make for heroic estimates

CARBON FINANCE OPPORTUNITY – Tools to Target GHG in Urban Transport

- Prototype Carbon Fund (PCF)
 - CDM: would purchase verifiable reductions in carbon emissions (~US4/MT CO₂)
 - Potential to internalize GHG impact: Market Discipline
 - Verification remains an issue:
 - multitude of factors affect GHG emissions from urban transport
 - consequent uncertainty in establishment of Business-as-usual (without project) baseline
 - Price of carbon
 - Experience with urban transport is limited
 - Mexico, Bombay under preparation
 - Consolidation of bus services

THE ROAD AHEAD – NO SILVER BULLETS

- How much control does Government have?
 - Public transport supply and service
 - Land-use and urban development patterns
 - Incomes, demographics: automobiles ownership
 - Transport policy: automobile use
- Potential impact of urban transport on over-all GHG emissions?
 - Urban Transport is only part of transport emissions picture
 - Freight, intercity transport

SUMMARY

- Concern with GHGs is yet one more reason to promote a set of good 'sustainable transport' policies. GHG-concerns offer some interesting and valuable ways to promote an established broader agenda
- The total impact attention on urban transport policy can make on overall GHG emissions is still not clear
- Post-KYOTO
 - Baselines will always be a problem in a prevention regime