

ADB Transport Forum
Asia on the Move : Energy
Efficient and Inclusive Transport
9-12 September 2008, Manila

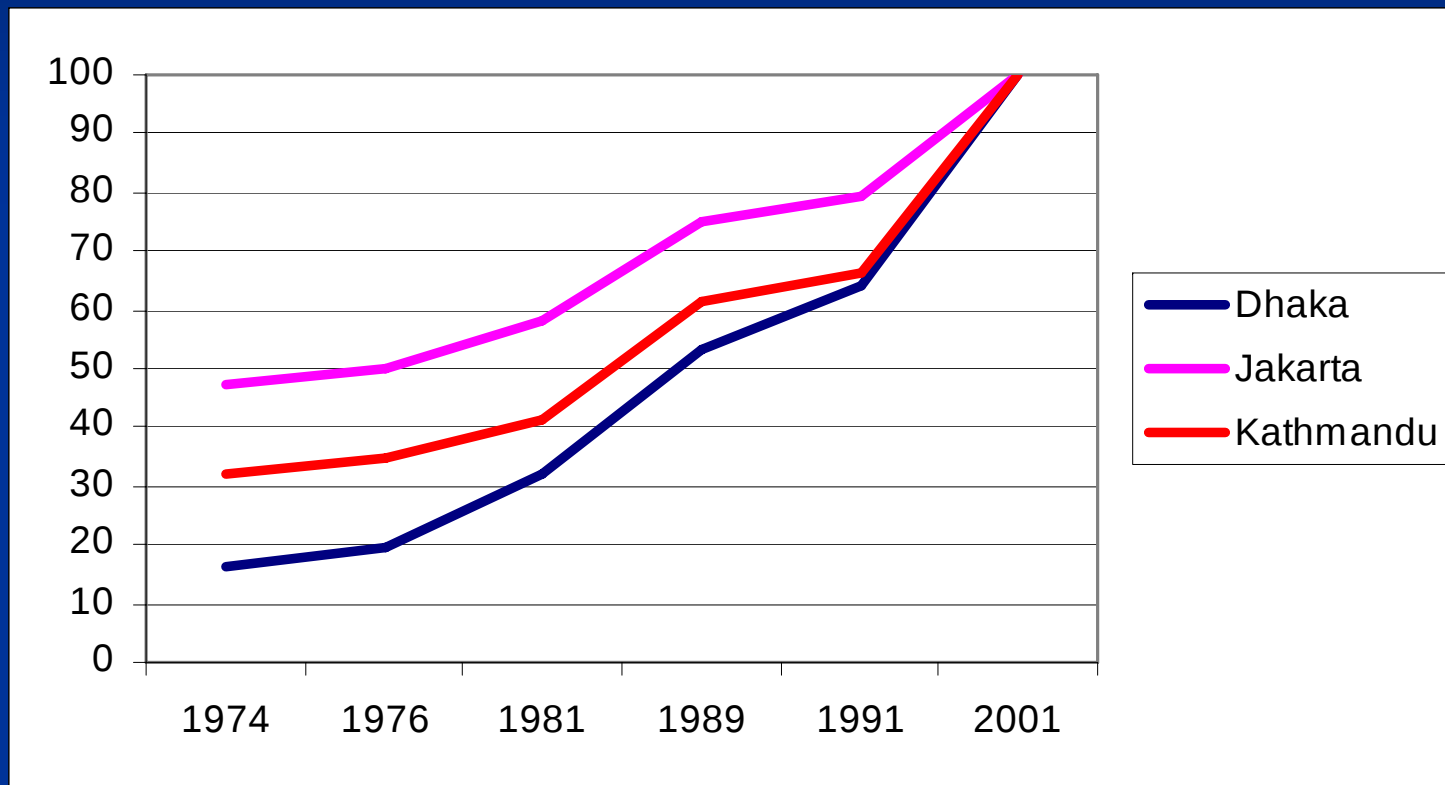
Sustainable Urban Mobility
Case Studies : Dhaka and
Kathmandu

Dr Sion Haworth
10 September 2008

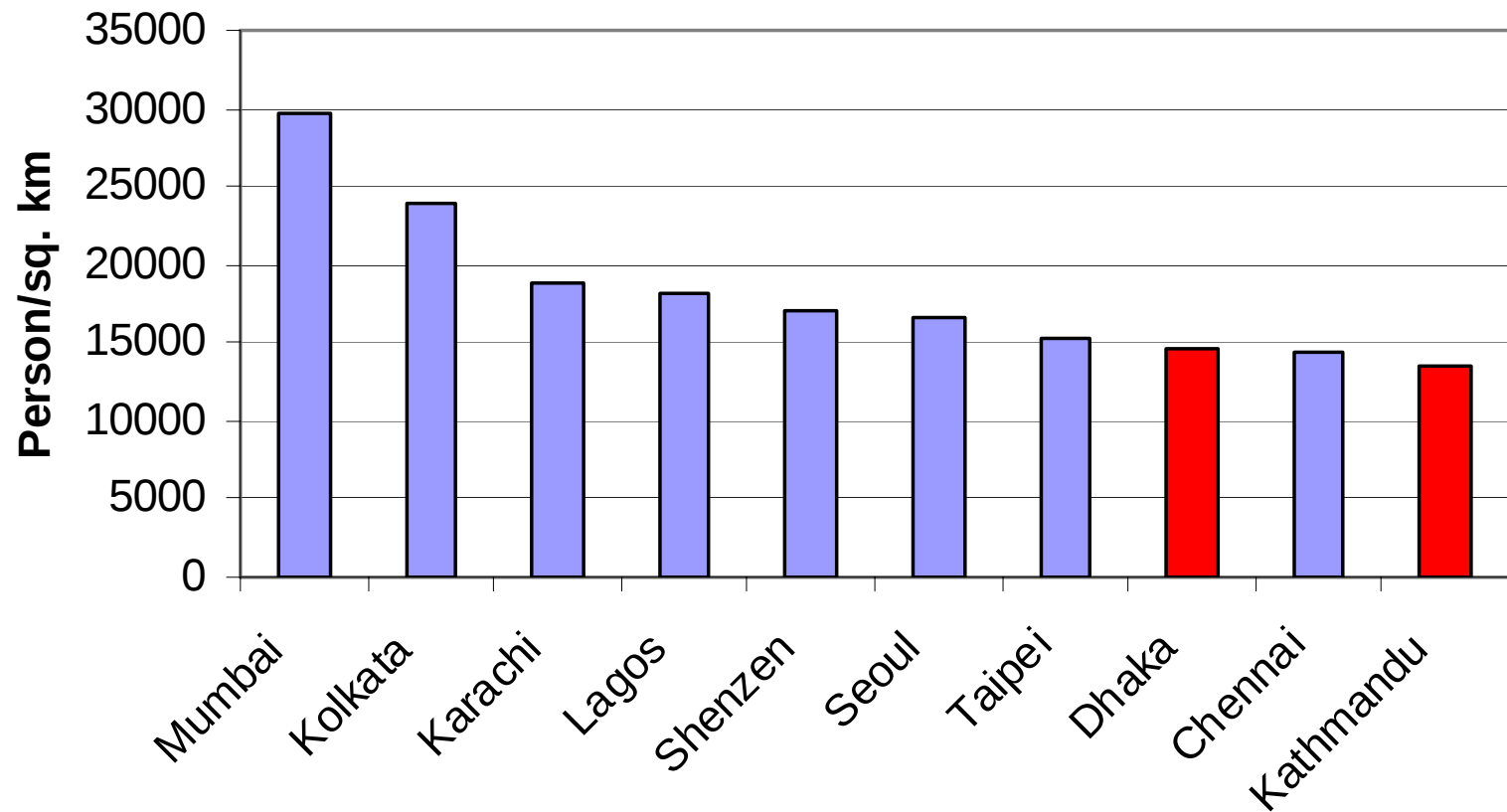
Population

- Kathmandu – 1.4 million
- Dhaka – 12 million

Population Growth Rate (% of 2001)



Population Density of Top Ten World Cities



Poverty in Dhaka

- 50% of population in households earning less than Tk 8,000 per month (\$115)

	Hardcore Poor <2,500 Tk	Moderate Poor 2,500-5,000 Tk	Lower Middle 5,001-10,000 Tk	Middle 10,001-25,000 Tk	Upper Middle 25,001-50,000 Tk	High 50,001+
Example occupations	Maid Street vendor Garment Worker	Garment Worker Rickshaw puller	Factory Supervisor	Government Officer	Garment Merchandiser	Manager Entrepreneur
% of household income spent on transport	9.5	14.6	13.1	9.2	6.5	6.6

- Low income groups are forced to curtail trips that they can make
- Low income groups cannot afford higher transport fares
- 1.2 million garment workers – vast majority walk to work

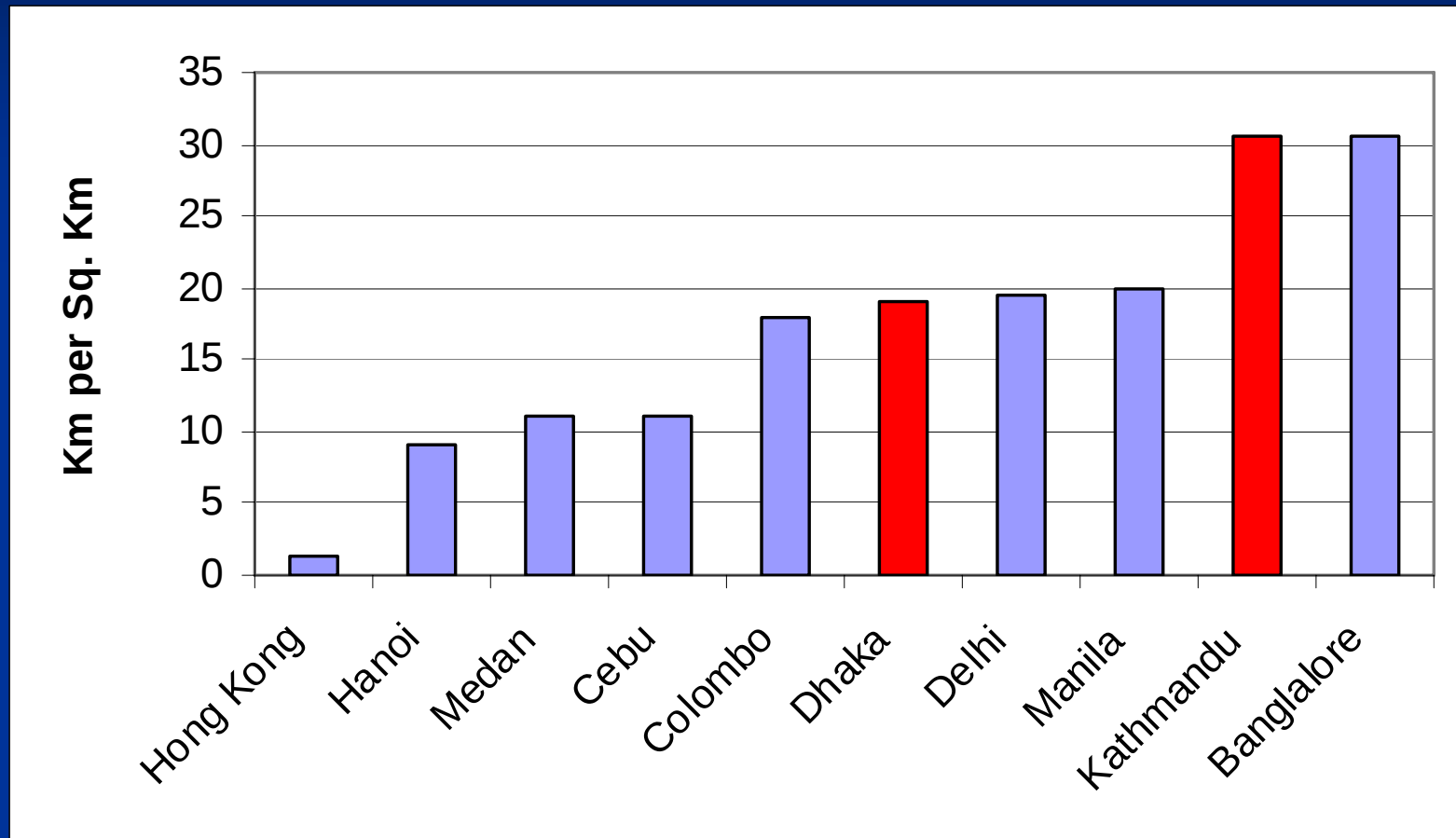
Poverty in Kathmandu

- Less than 4% of population are considered hard-core poor
- Typical monthly wages, US\$

Maid	56
Garment worker	68
Secretary	113
Factory Supervisor	161
Government Official	290
Private sector boss	2903

	Mean Income (NRs per month)	%
Poorest	4003	1.2
Second	6727	0.6
Third	9697	3.3
Fourth	14917	14.9
Fifth (Richest)	40486	80

Road Densities (km per sq.km.)



Kathmandu : characterised by narrow roads with few footways

Public Transport

- Dominated by bus services
- Large number of small operators
- Large number of small vehicles
- Large and double-decker buses only in Dhaka
- Route permit system
- Fares regulated
- Average fare levels in Kathmandu
- Dhaka fares high for longer trips

City	Normalised for GDP	
	5 km	10 km
Beijing	0.02	0.02
Manila	0.03	0.05
Bangkok	0.02	0.02
Jakarta	0.06	0.06
Dhaka	0.03	0.06
Singapore	0.02	0.02
Kathmandu	0.03	0.03

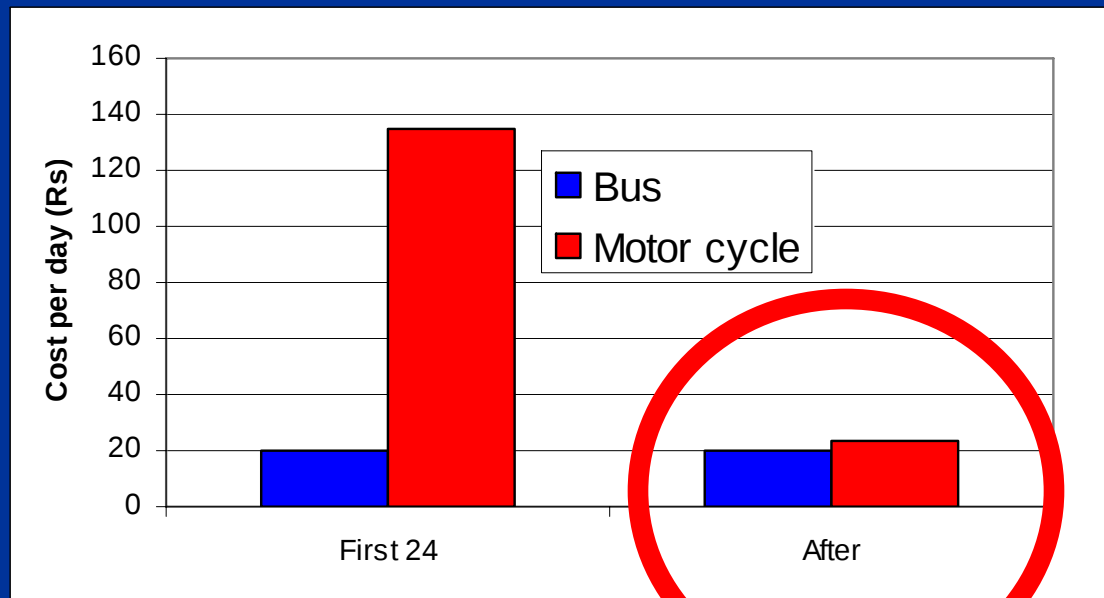
The Bus Business

- Income worth \$350 million per year in Dhaka
- Very high return on investment in Dhaka
- Income worth \$34 million per year in Kathmandu
- Good return on investment in Kathmandu
- No problem attracting new entrants in both cities
- Route franchising and bus priority measures – high chances of cash-positive bids
- Funds can be used to secure unprofitable, socially necessary routes
- Franchising establishes the model for securing Bus Rapid Transit

Company	Turnover US\$ M
Beximco	236
Islami Bank	208
Siemens	193
Bangladesh Railway	133
Rahimafrooz	125
AB Bank	121
ACI	82
Rupali Bank	25
Keya Cosmetics	17

Economies of a Motor-Cycle in Kathmandu

- Rs 20,000 deposit
- Rs 3,300 per month for 24 months
- Daily Cost for 25km per day – Rs 135
- Equivalent Bus cost – Rs 20



Result

- Happiness for owner
- Misery for City

Pedestrian Facilities

- Poor level of provision, lack of maintenance
- Pedestrians forced into carriageway



Kathmandu



Dhaka

Traffic Management

- Poor design of junctions, especially for pedestrians
- Poor signal plans, not using the available capacity
- Police over-ride signals, cause excessive cycle times;
- Lack of enforcement of rules
- Poor management of buses
- Encroachment on roads and footways by street vendors



Rickshaws in Dhaka



- 12% share of trips
- Tk. 8-10 per km
- 1-1.5 million rickshaws
- High return for owners
- Little segregation
- Perceived by policy-makers as part of the problem

Lack of system integration in Dhaka and Kathmandu

- No land use/transport plan followed
- No unitary authority to plan or manage transport
- Poor physical integration between public transport services
- No fare integration

Major Issues and Constraints

- Policy vacuum, lack of setting and measuring targets
- A lack of clear vision for urban transport
- Government allows private vehicles priority
- Small buses, poorly regulated contribute to congestion
- Weak institutions for delivery of the public transport
- Lack of capacity in Government agencies to deal with complicated and inter-related urban transport issues
- No lead agency for planning/transport in Kathmandu, no powers in Dhaka
- Poor traffic management capabilities
- Pedestrians are not given basic human rights

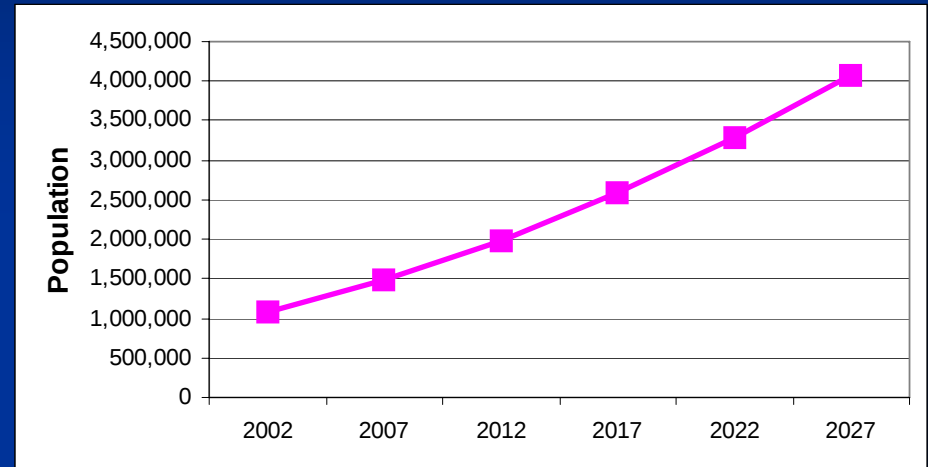
Future Trends - Dhaka

- Increasing population – to 20 million by 2024
- Dominated by poor in-migrants
- Unlimited supply of labour as rickshaw pullers
- Without intervention - unsustainable increase in car use

Year	% Share by Car
2005	6.4
2010	9.8
2015	13.7
2020	17.4
2025	20.8

Future Trends - Kathmandu

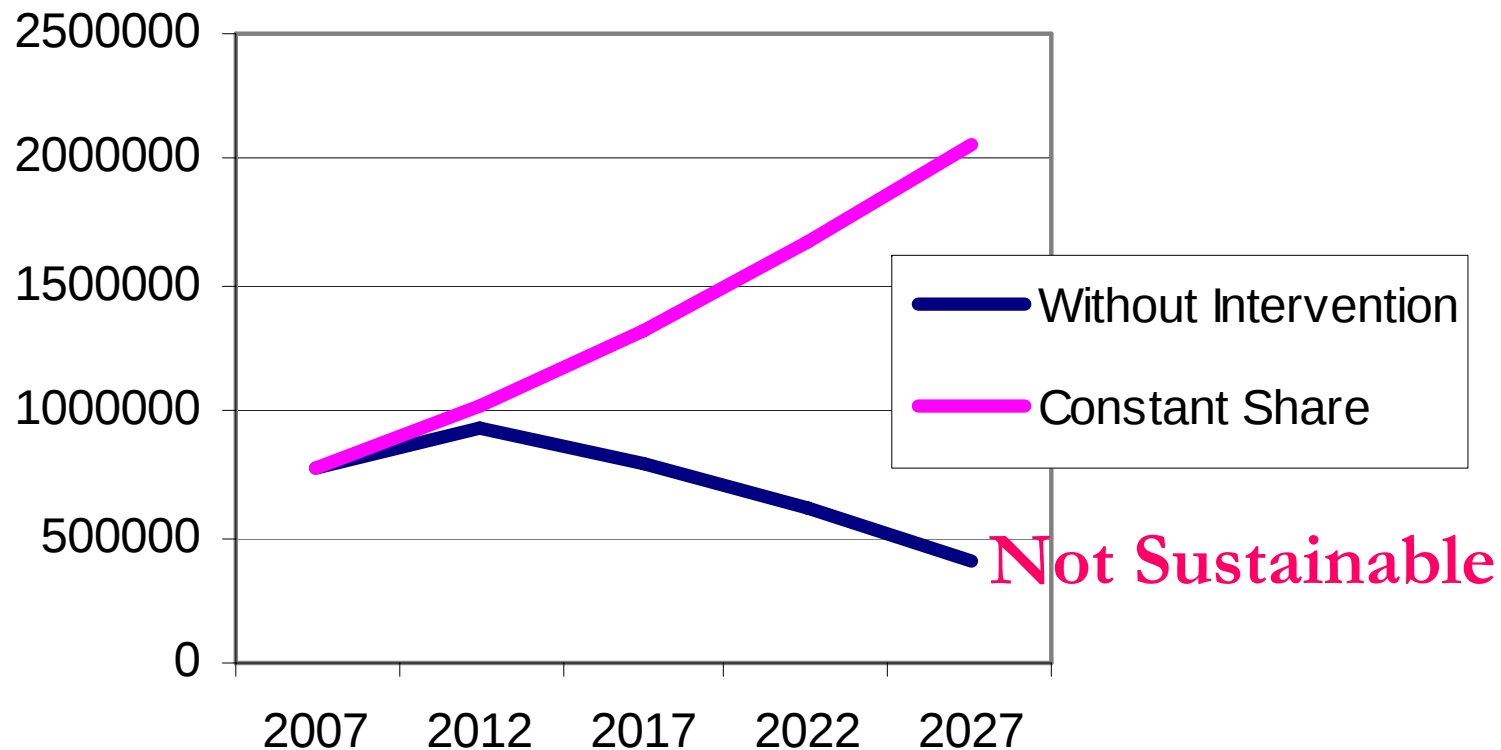
- Increasing population – to 4 million by 2027
- Dominated by poor rural in-migrants
- Unsustainable increase in car ownership



Share by car, %	
2001	8
2007	11
2012	14
2017	19
2022	25
2027	33

Need to Intervene

■ Scenarios for number of daily bus passengers in Kathmandu



Strategic Transport Plan for Dhaka

Implementation in
3 years

■ 50 Highway schemes	2%
■ 3 Elevated expressways	0%
■ 3 BRT lines	0%
■ 3 Metro Rail lines	0%
■ Traffic management	0%
■ Bus industry consolidation	0%
■ Bus Lanes/Bus priority	0%
■ Pedestrian First policy	0%

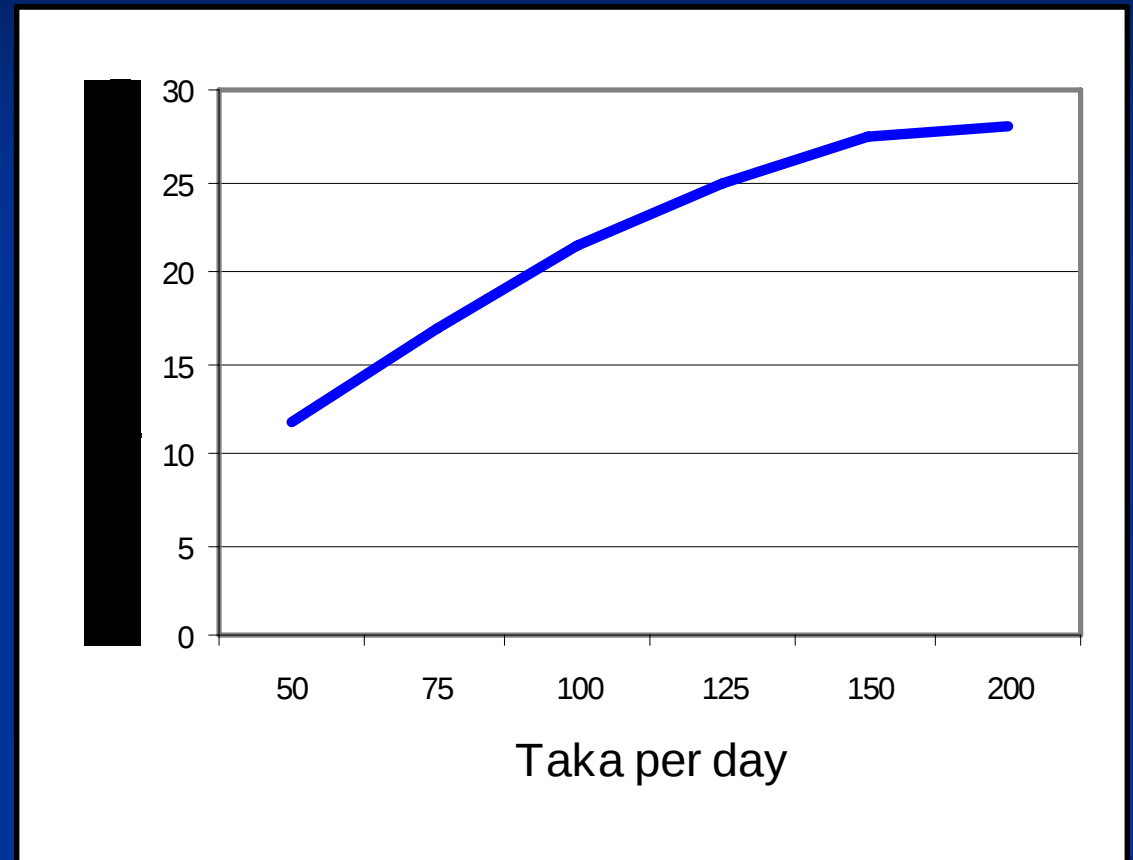
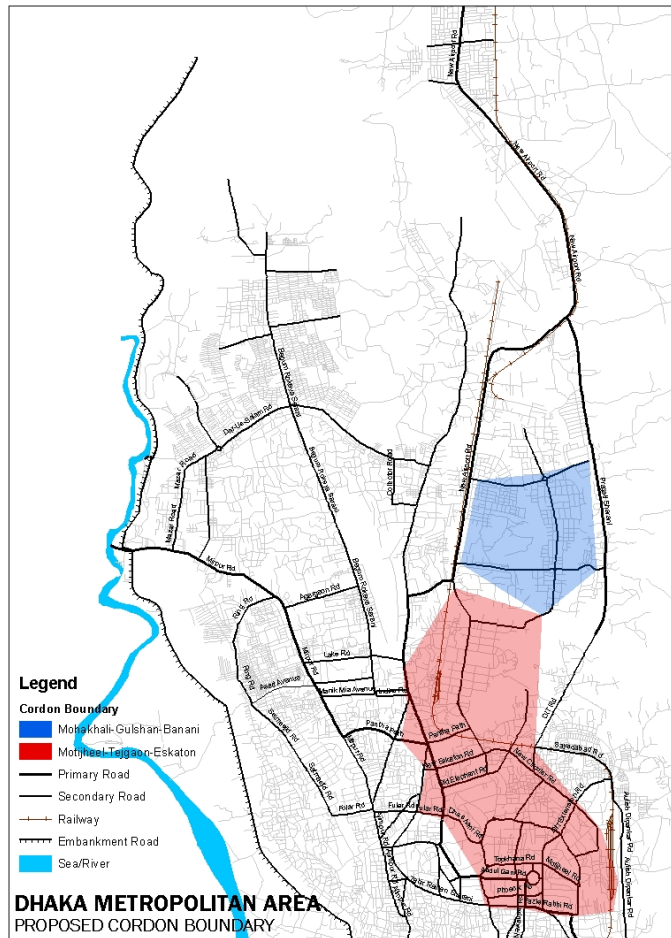
Vision for Sustainable Urban Transport

- ***Environmentally sustainable*** to improve safety and reduce air pollution. Should address congestion, pollution, road user charges, and public transport fares, to change modal split
- ***Socially sustainable*** to provide the poor and other disadvantaged groups with access to employment, education and health services.
- ***Economically sustainable*** to create competition and enhance user participation. True charges for the use of infrastructure and services.
- ***Financially Sustainable*** – minimising untargetted subsidies and losses, avoiding white elephants

Common Solutions

- ***Efficient bus planning and operations*** – institutional reform, planning, bus franchising, contracting and regulation
- ***Traffic Management*** – to maximise road capacity and allocate it equitably
- ***Pedestrian measures*** – maximise safety and accessibility for all users, especially poor
- ***Congestion charging*** – to ration scarce road space and provide income stream
- ***Mass Transit*** – an integrated network to serve the majority of trips (not necessarily metro)

Management by Congestion Charging



Financially Sustainable

Area Based : Phases 1 and 2

Supporting Strategies

Dense Population

Lack of road
capacity

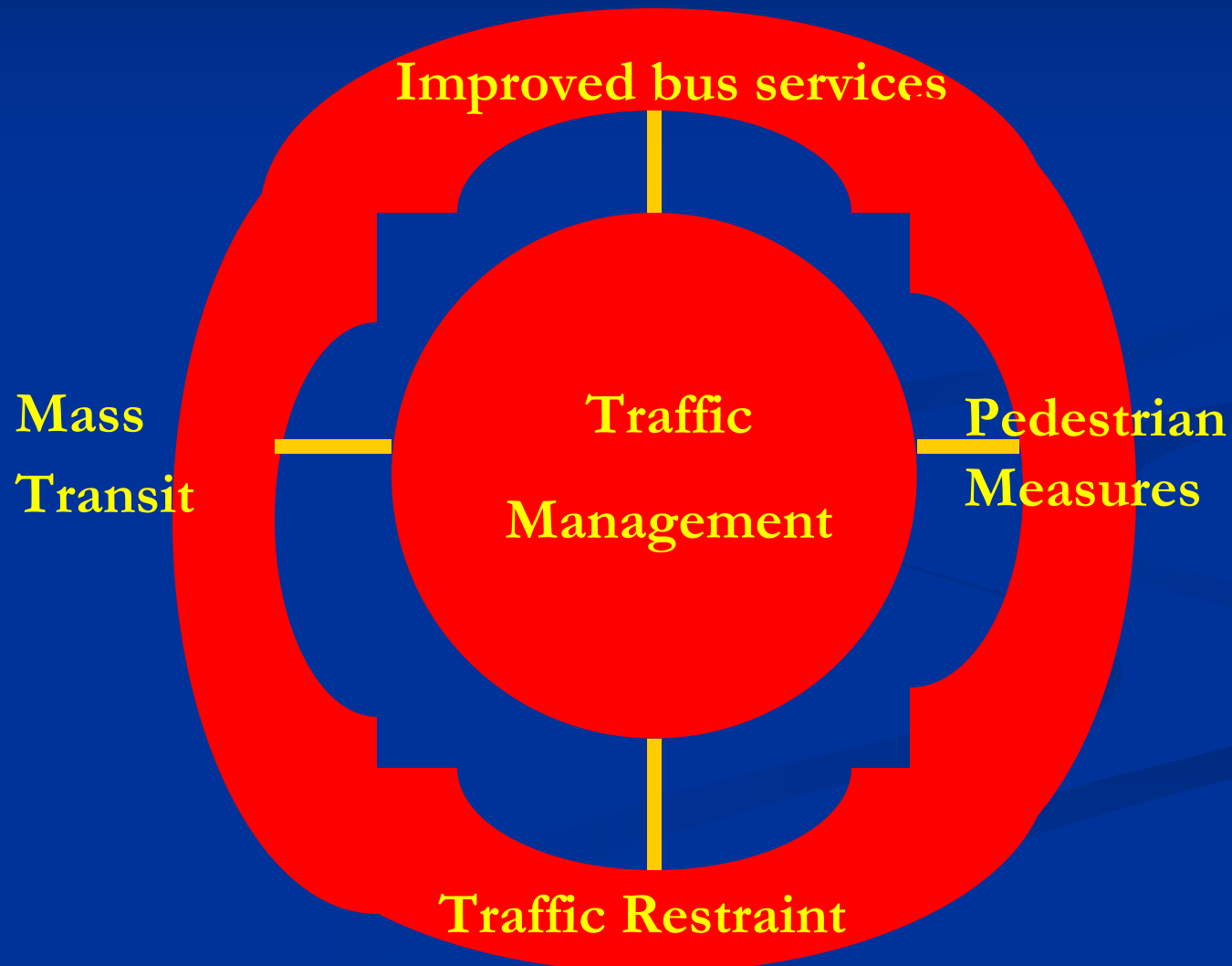
Efficient Public
Transport

Pedestrian Priority

Integrate

The diagram illustrates the relationship between four factors in urban transport planning. At the top, 'Dense Population' and 'Lack of road capacity' are the starting points. 'Dense Population' leads to 'Efficient Public Transport' via a thick red arrow. 'Lack of road capacity' leads to 'Pedestrian Priority' via a thick yellow arrow. Additionally, a red arrow points from 'Dense Population' to 'Pedestrian Priority', and a yellow arrow points from 'Lack of road capacity' to 'Efficient Public Transport', forming an 'X' shape. At the bottom, a large yellow curved arrow labeled 'Integrate' connects the two bottom nodes, indicating that both strategies should be integrated.

Vision for Sustainable Urban Transport



Bus Franchising Objectives

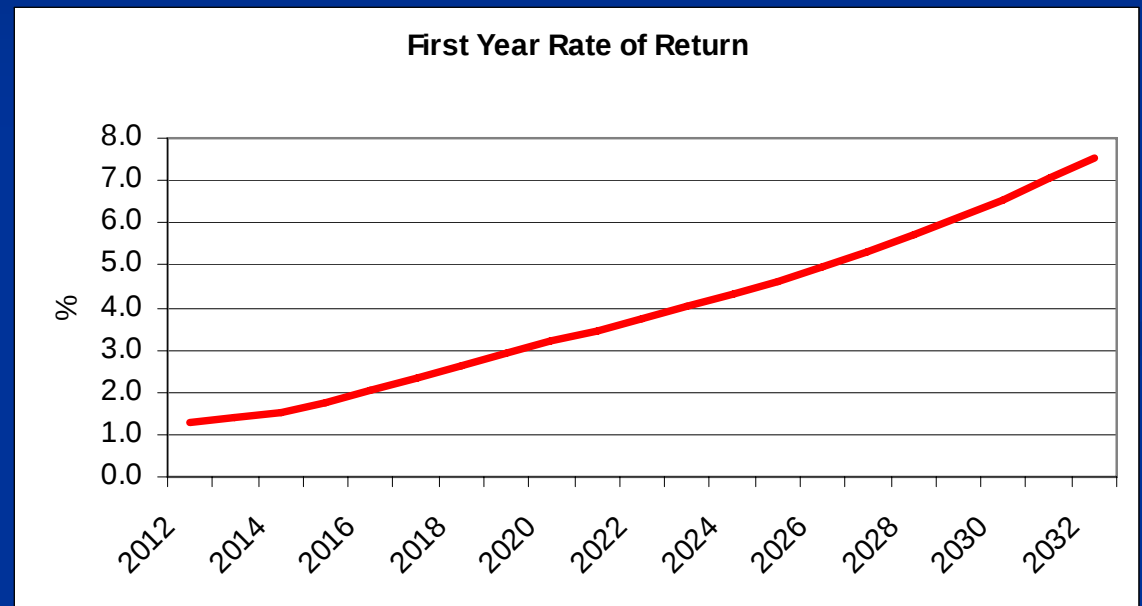
- A **planned** bus network that meets all needs
- Proper **regulation** and controls that act in the interest of the bus passenger (social sustainability)
- Effective and transparent **competition** (economic sustainability)
- **Equitable fares** that meet travelers ability to pay, and meet special needs (social sustainability)
- Platform for mass transit

Bus Franchising Components

- Single proper bus franchising law
- An appropriate administrative structure
- Genuinely independent supervisory board
- Clear network definition
- Policy on concessionary fares and compensation.

Metro Issues in Dhaka

- Preliminary Cost, Line 1 :
\$900 million
- Average fare, 2 x bus fare
- Income will not cover operating costs
- Income + economic benefits will exceed operating costs
- Affordability Issues



Enabling Environment

- Institutions and their capacity are weak
- Cannot wait for capacity building before implementing SUT
- Needs strong policy drive and leadership
- Capacity building in parallel with SUT programmes
- Creation of Urban Transport Programme Co-ordination Office recommended in Kathmandu

Institutional Proposal - Kathmandu

