

Bus Transport in Delhi: Concerns and Action



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**EMBARQ and Indore
City Transport
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First generation measures in Delhi

On fuel quality

- Low sulphur fuels and petrol with 1 per cent benzene
- Mandated supply of pre-mix petrol to two- and three-wheelers

On vehicle technology

- Advanced enforcement of Euro II emissions standards for both petrol and diesel vehicles in 2000 and Euro III in 2005

On alternative fuels

- Move three-wheelers and taxis to CNG or clean fuels
- Move the entire city bus fleet to CNG. Augmented bus fleet

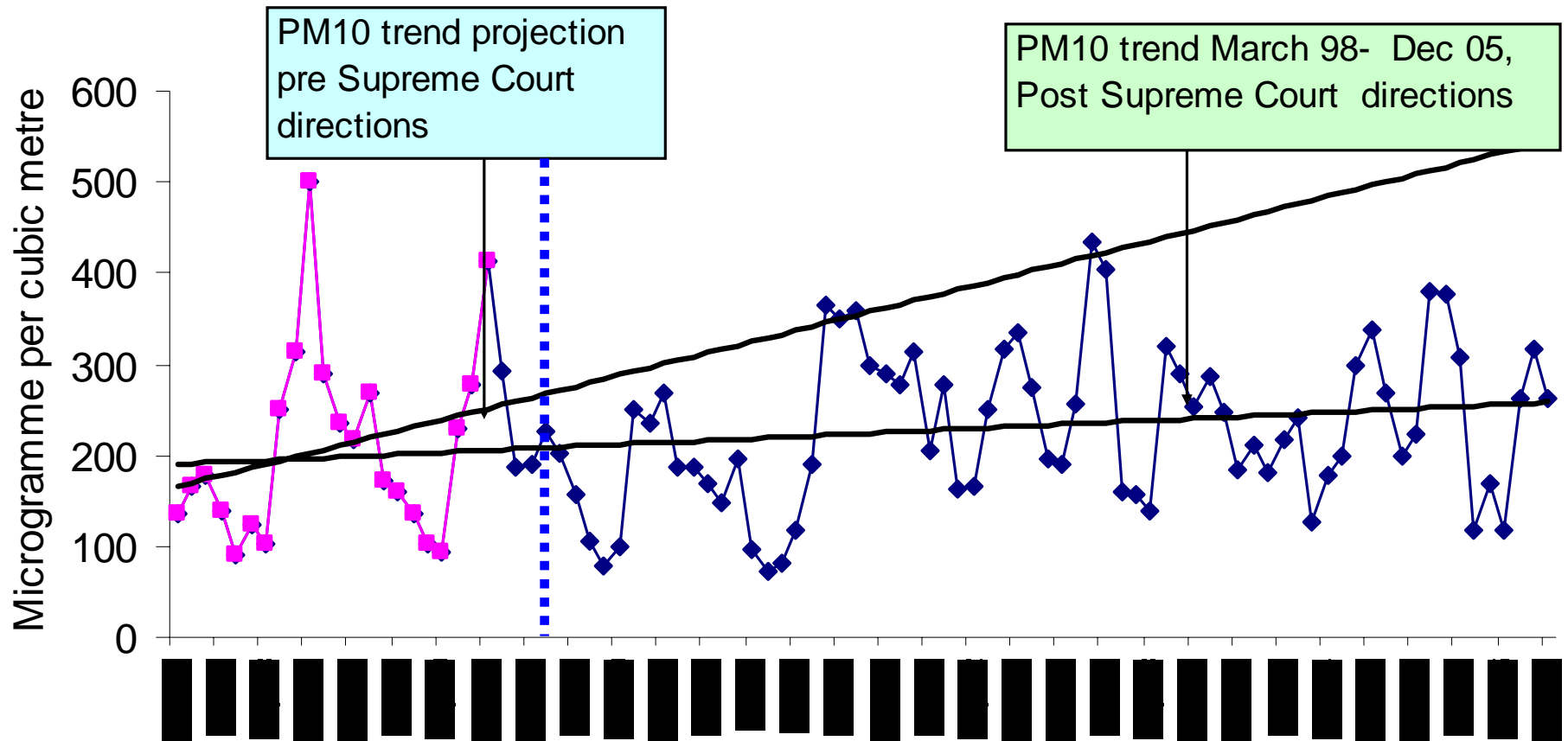
Cross cutting policy measures

- Strengthen air quality monitoring
- Set up inspection and maintenance programme
- Create bus terminus at the city boundaries to bypass transit traffic
- Set up independent fuel testing laboratories to check fuel adulteration

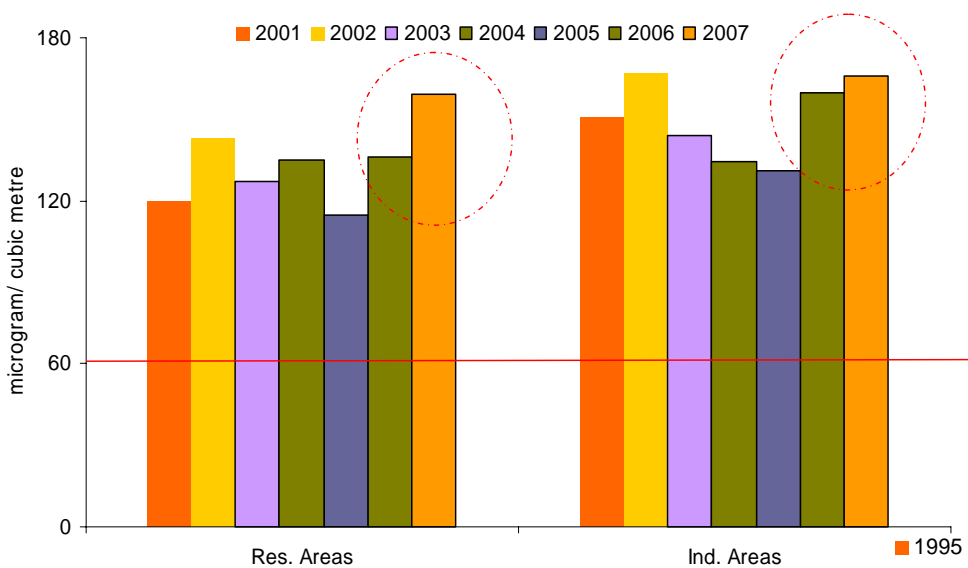
Delhi got cleaner air: it avoided pollution; got health benefits



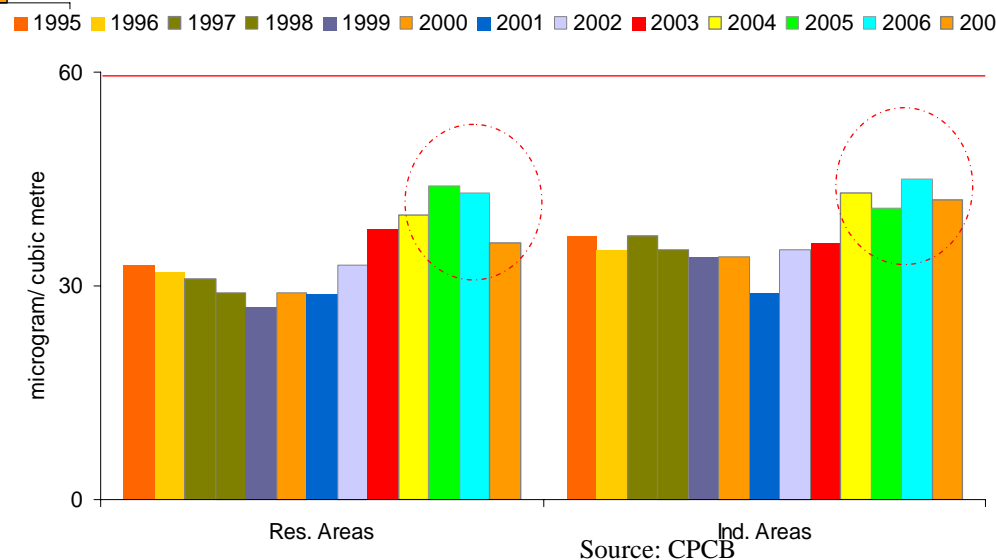
PM10 at ITO Traffic Intersection



Delhi: at risk of losing gains

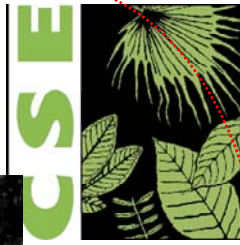


NOx levels Rising steadily

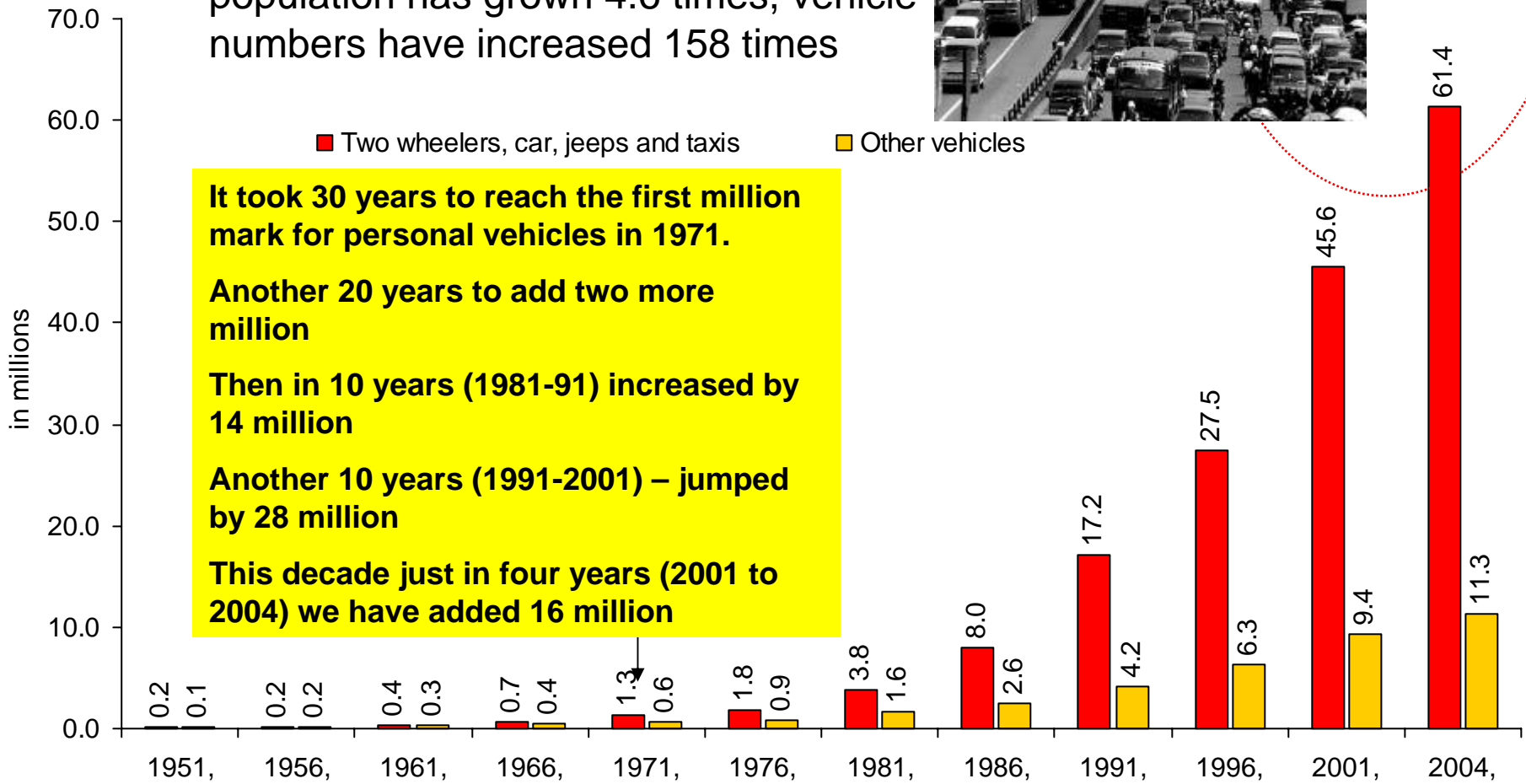


PM curve upward

Explosive numbers



Vehicle registration in India: India's urban population has grown 4.6 times, vehicle numbers have increased 158 times





Need second generation reform

Need big answer:

Need to make transition to public transport

In our cities **Car** has **not replaced** the **Bus**

In our cities car **has marginalised** the bus

Metro in first phase carries 0.5 million
passengers/day

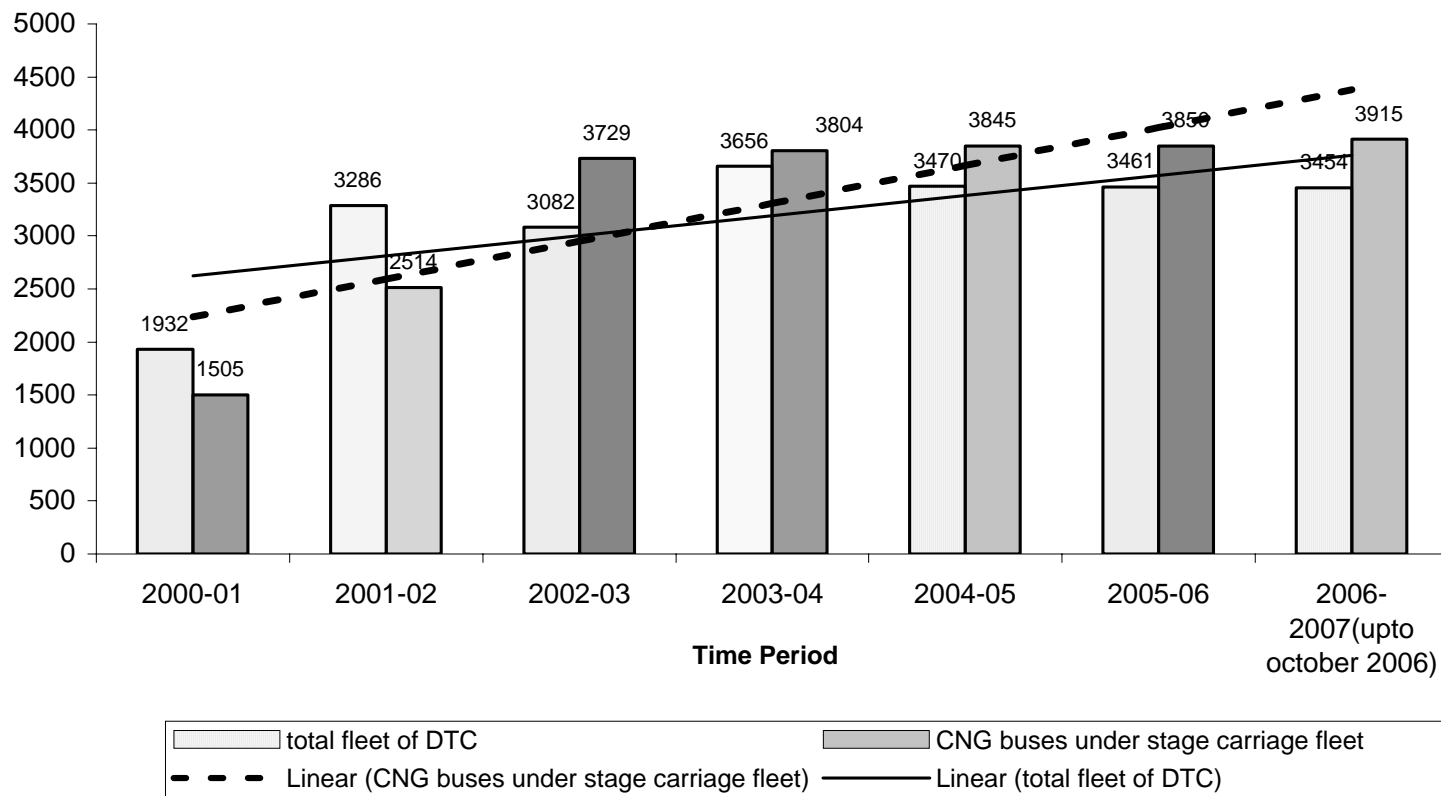
DTC+private buses carry roughly 9 million



We looked at bus numbers.....



- Delhi adds 1000 vehicles/day, but few buses/year
- Missed the target of 10,000 buses by 2002



Bus availability going down

1980-81: 57 buses/lakh population

2007-08: 34 buses/lakh population

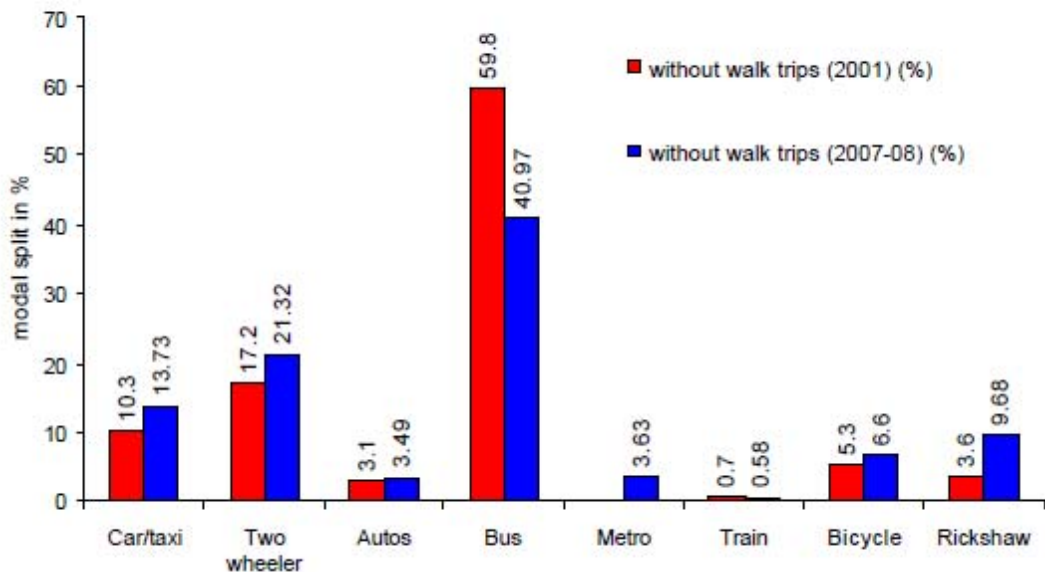
Source: DIMTS

Source: CSE

Nationwide bus registration dropped from 11 per cent in 1951 to a mere 1 per cent in 2004

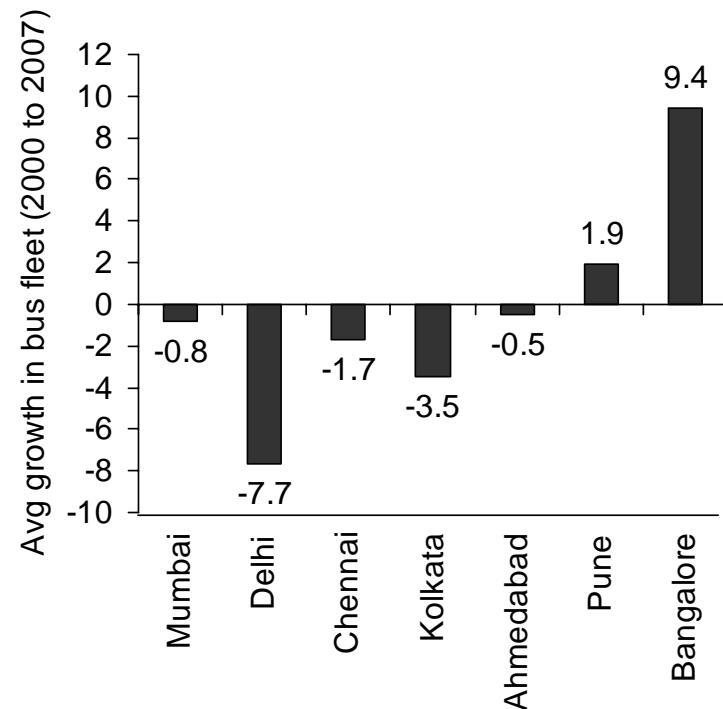
Reality check

Buses marginalised in Delhi



RITES: Modal share in Delhi

The Annual Average Growth in STU Bus Fleet in selected cities (2000 to 2007) (In%)





Biggest barrier, ironically, is the bus itself.....

Delhi government is investing to expand the bus fleet by nearly 5000 buses – Cities want modern, convenient and even air conditioned buses.

But.....



Barriers

Constraints of supply....

- Tata and Ashok Leyland produce nearly 90 per cent of the buses. But serious delays in delivery.
- As per contractual agreement between Tata and DTC there is delay penalty of 10 per cent per month. Tata has been fined for Rs 2 crore for this delay.
- JNNURM stimulus package has created committed demand of nearly 15,000 modern urban buses. This needs ramped up production over and above the 30,000 standard buses manufacturers produce annually.

Diverse bus specifications fragmenting markets, increasing costs

-- **Case of bus procurement in Delhi and Ahmedabad** -- Wide variation in design specs from operators, and near monopoly pushing up prices – Height of bus floor,, manual or automatic transmission, type of suspension, standard vs monochoque body, CNG vs diesel.....

The first bid fetched staggeringly high price in Ahmedabad Rs 62 lakh a bus. But with more features Delhi got the same for Rs 41 lakh/bus.

Ahmedabad re-tendered for semi low floor diesel bus with automatic transmission but not a full air suspension. It cost Rs 26 lakh per bus.



Solutions exist.....

Standardised specs exist.....There is no reason why market should remain fragmented....

- Bus code of the Union Ministry of Shipping, Road Transport and Highways
- Guidelines on bus specs of the Union Ministry of Urban Development

With standardisation cities can even do collective bargaining with bus industry to procure buses at reasonable standardised rates

Sale volumes should allow economy of scale and reduce prices further

Even the tendering process can be simplified

Only increasing numbers will not help

Need reform in the bus sector

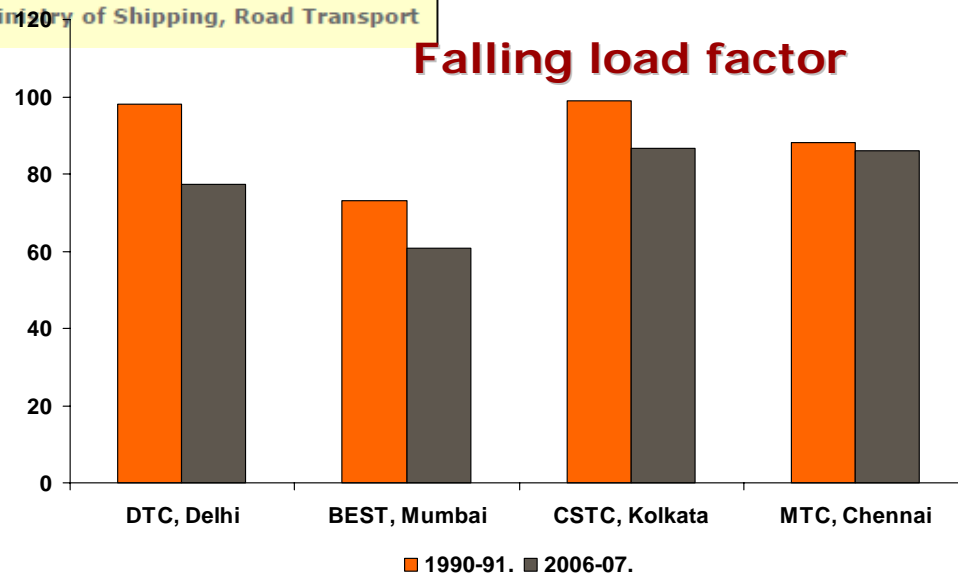
Revitalise the public bus agency
Implement new model for private
operations...

Even this hits roadblock...

City bus corporations: In the red

Bus company	Fleet size	Average (years)	Fuel efficiency	Staff/ bus ratio	Vehicle productivity (km/bus /day)	Total revenue (Rs crore)	Total costs (Rs crore)	Net profit /loss (Rs crore)
Calcutta	1,144	6.4	3.70	6.65	124	72	177	-105
Mumbai BEST	3,391	5.56	3.31	10.11	194	850	1,088	- 238
Chennai Metro	2,773	8.39	3.77	6.40	209	472	557	- 85
Delhi DTC	3,467	4.70	2.99*	8.21	205	464	1,267	-803
Bangalore MTC	3,977	4.47	4.66	4.78	218	687	574	+ 113
Ahmedabad MTS	685	11	—	5.72	172	76	99	-23

*Runs on CNG, and price has not increased, so costs of fuel are under control
 Source: Review of the performance of state road transport undertakings, Ministry of Shipping, Road Transport and Highways. Government of India. 2007





Restructure.....

All city bus routes have been bunched into 17 clusters. Private bus agencies will bid and operate these clusters within defined performance parameters.

But unaffordable.....



Affordability challenge of public transport...

The bid for the first cluster shows cost at Rs 47/km with low floor buses. This can cost Rs 85 crore per annum per cluster. This can be even higher for other clusters – Rs 50-60/km while the operating revenue will be half of this.

The financial gap is estimated to be Rs 600 - Rs 1000 crore annually..... Government's contribution will be enormous....Need strategy to address this.

How do we reduce the costs of capital and operations?

Negotiate bids to reduce both capital and operational costs.....

Should we move from low floor buses to semi low floor buses to reduce capital costs ...? Renegotiate operational costs and make operators fully responsible for meeting that cost.

Government is already paying hugely for the inefficiency of the state owned agency – Rs 66/km

How do we increase revenue?

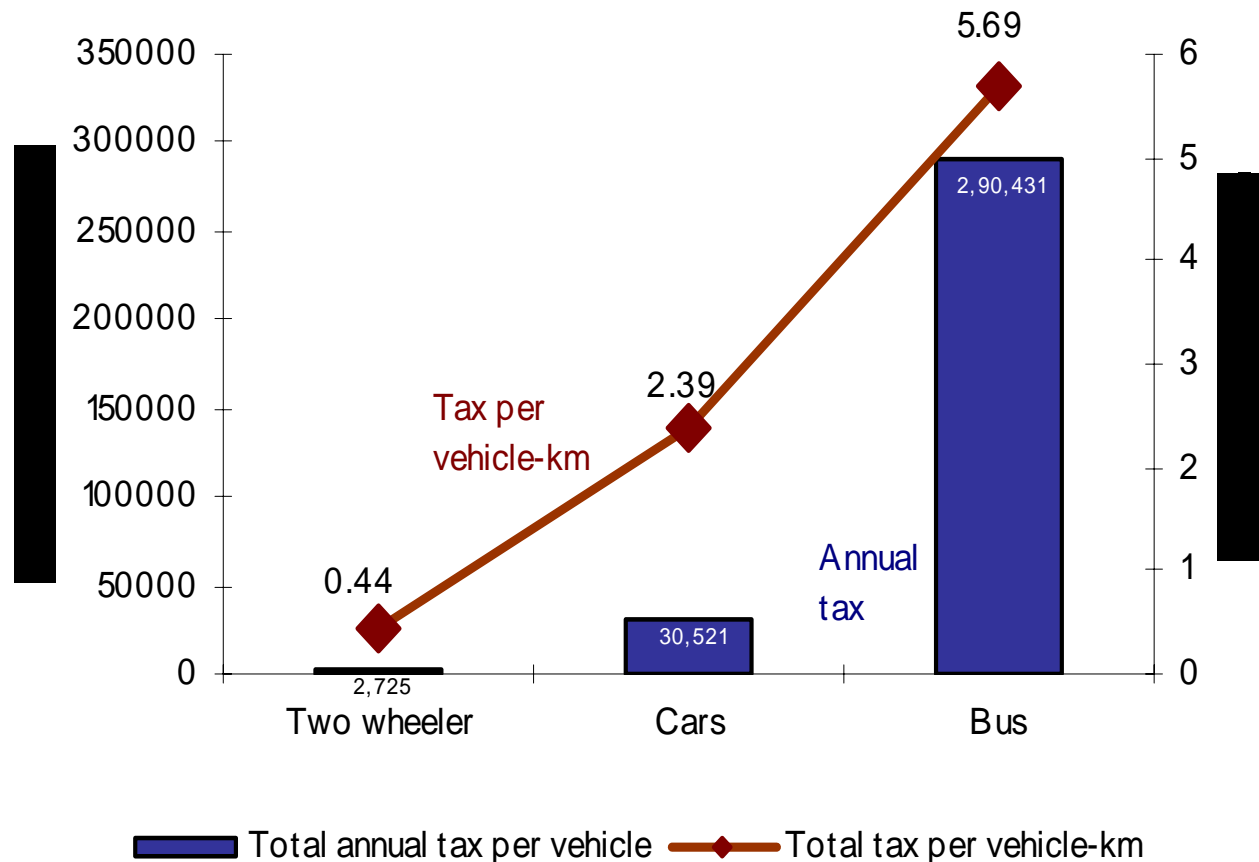
How can we build public transport funds?

Difficult within the existing tax regime



Buses bear significantly higher tax burden than cars and two-wheelers.

If not corrected and bus fares are raised, a substantial public transport ridership can be lost to two wheelers that have a running cost of a mere Re 1/km



Taxing the poor to subsidise the rich?

Delhi: If lifetime tax is amortised for the life of the vehicles then car pays roughly Rs 300 as taxes per year. But buses pay for more for carrying passengers. They pay about Rs 13000 per year – 43 times more than cars. .

Mumbai: bus occupies one tenth of the road space per passenger compared to personal cars. Cars pay one time registration fee which is only 3.5 per cent of the value. Buses pay annual passenger tax. Cars pay Rs 9000 for life and bus pays Rs 41000 every year.

Name of the state	Estimated tax paid annually by two - wheelers	Estimated tax paid annually by cars (only petrol cars)	Estimated taxes paid annually by buses	Number of times the tax paid by buses exceeds a car
Haryana	33	100	27,000	270
Punjab	67	267		
Delhi	53	533	13,765	26
Himachal Pradesh	80	533	27,000	50
Uttar Pradesh	107	667	1,970	30
Rajasthan	133	800	12,000	15
West Bengal	260	1980		
Goa	187	933	12,420	13
Maharashtra	187	1067		
Gujarat	100	1333		
Chattisgarh	107	1333	97,200	73
Karnataka	187	2400	1,08,000*	45
Andhra Pradesh	240	2400		

Reinvent the fiscal regime for transport



Reform taxes to lower the cost of capital and operations

- Demand for complete waiver on central excise duty on buses. It has now been reduced to 8%
- State governments should waive off state taxes like passenger tax that perversely taxes passenger carrying capacity

Options to generate revenue to create urban transport funds

DIMTS is considering the following sources. No decision yet.

- Receipts from inter-state bus terminus
- From plan allocation for public transport
- 50 per cent of collection from the Air Ambience Fund
- Fees levied on transport department for issuing licenses, vehicle registration, etc
- Fees and cess that may be levied in future on polluters
- Fund deposited with the supreme Court
- Budget support
- Waive off taxes on buses

Need clear policy on sources of revenue to augment the fund, restrain cars and increase bus ridership

- Higher road tax on cars and two wheelers. Currently, it's the lowest in Delhi
- Parking tax
- Congestion tax etc

Tap Advertisement revenue for public transport (Delhi has designed a policy under the aegis of EPCA)

Revenue from land-use densification. But this should be done with proper land-use and network plan

Bus is not just about numbers. It is also about frequency and speed



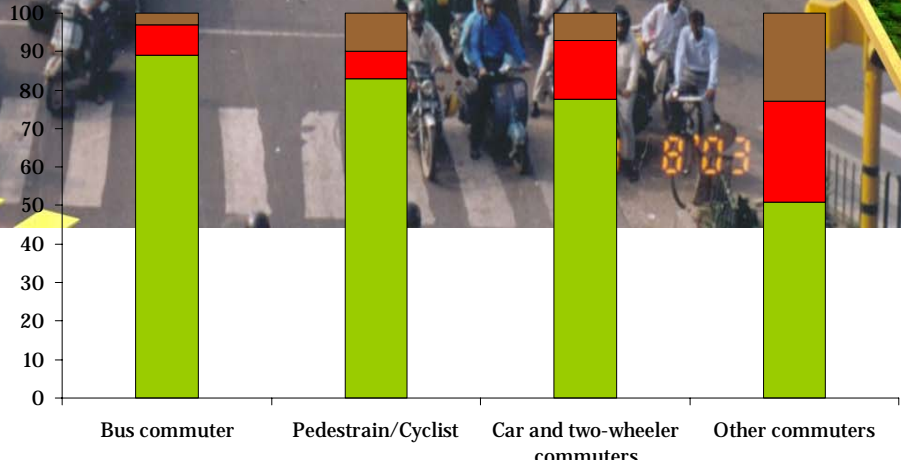
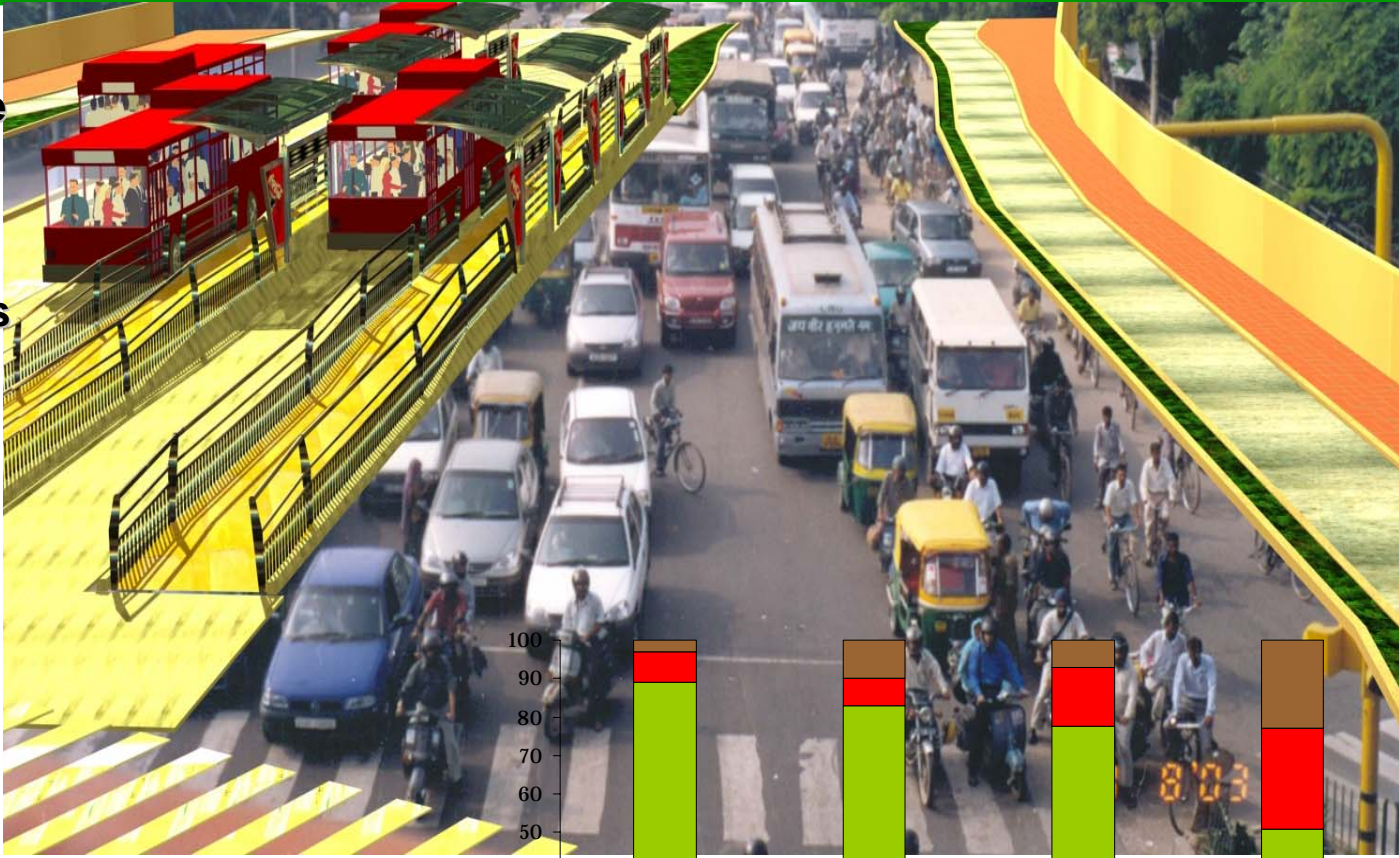
Build support for the BRT

EPCA is monitoring and coordinating to expedite its implementation

CSE organised surveys to see how people feel about the corridor:
 Found overwhelming support amongst the bus users, pedestrians and cyclists

Commissioned studies to understand the benefits of the pilot corridor

Awareness raising: Meeting with schools etc



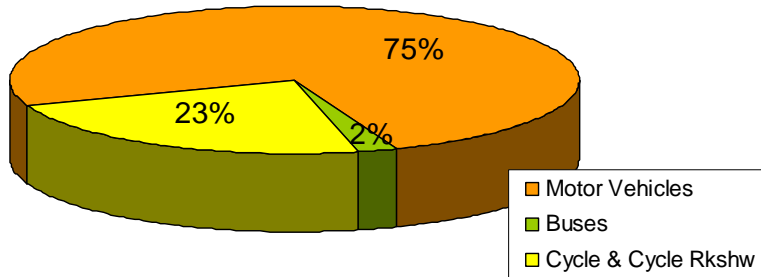
Are you happy about the corridor? ■ Yes ■ No ■ No specific answer

The new assessment has helped to highlight real improvements....

Benefits for more people, not vehicles
Waiting time reduced for more people

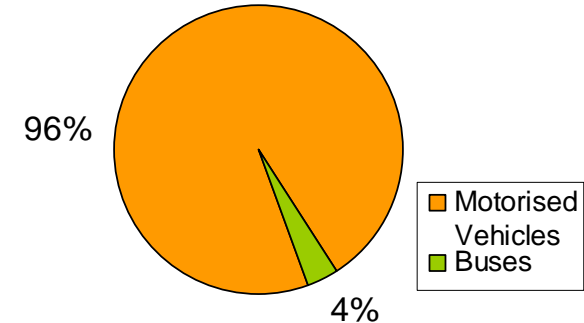


Distribution of Vehicles - By Mode



Chirag Delhi Junction
Morning Peak Hour
AK to MC
4,916 Vehicles
11,480 People

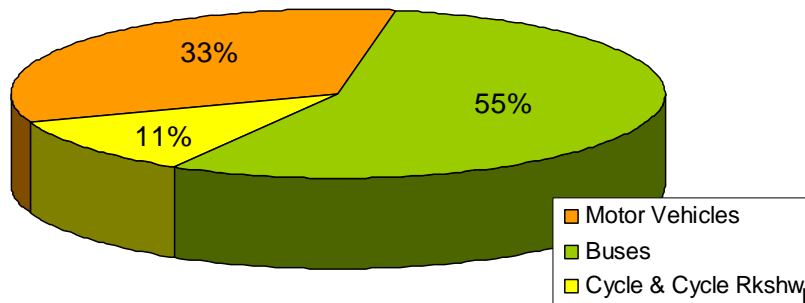
Distribution of wait time @ Chirag Delhi junction - Vehicles



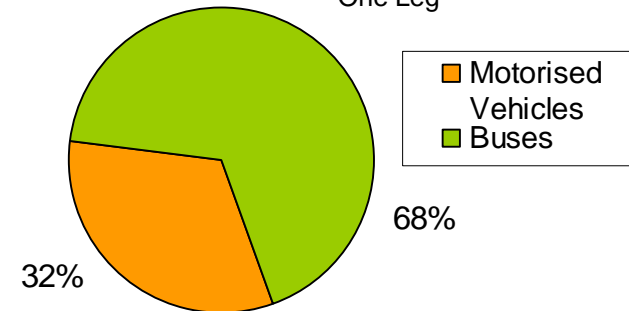
Calculation based on Webster's Delay Formula for Signalized Intersections

One Leg

Distribution of People - By Mode



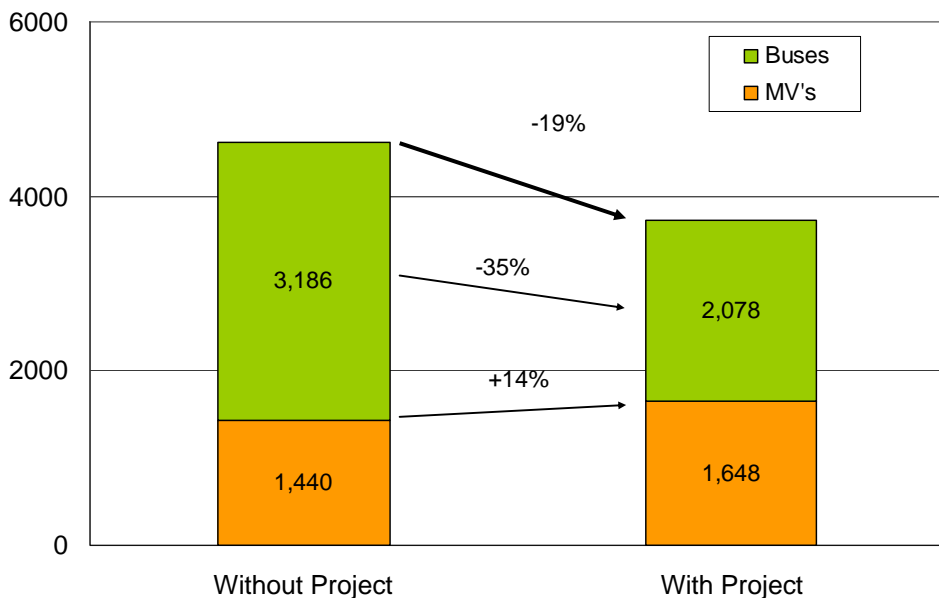
Morning Peak Hour
AK to MC
53.0 Vehicle-Hours
164.8 Person-Hours



Distribution of wait time @ Chirag Delhi junction - People

..... Bus Corridor has also reduced the average travel time

People Delay - Morning Peak Hour - In Hours



Bus transport is a chance to make a
difference in our cities.....



The reform agenda

Reforms linked with bus procurement

Form Unified Metropolitan Transport Authority

Dedicated Urban Transport Funds

Reimbursement of taxes by state governments

Advertisement policy

Parking policy

Vehicle Tracking system

Passenger information system

Traffic information control centre etc

This is a chance to make a difference.....