MUMBAI'S TRANSPORT WOES: IS THERE A WAY OUT?
Dear Friends,

Whether it is congested roads, overflowing trains, unuseable pavements or dirty air, all of us citizens of Mumbai, whether rich or poor, are affected by the many transport-related issues faced by this city.

The question is: Is there a way out?

This issue of The City addresses the twin concerns of transport and pollution in Mumbai. Reasoned debate is the hallmark of the democratic decision process. With the intention of discussing various aspects of the problem and getting a status report on developments, a meeting was organized by Bombay First with the World Bank Mission on MUTP-II. Meanwhile, a Seminar on Road Transport held in April, brought together representatives of Government (MSRDC and MMRDA), industry and environmental groups to throw light on the flyover project and discuss alternative scenarios for traffic management.

Just as the issues of transport affect all of us, so does the responsibility for solving them lie with all of us. From the Government to the corporate sector to the college student — we all have roles to play. This issue gives case studies of cities as dissimilar as Curitiba in Brazil and Brussels in Belgium which have adopted imaginative measures to deal with the problems of mass transport and pollution. It also describes the innovative steps taken by three European companies to curtail the use of private cars to work. As these studies make clear, it is only through an intensive awareness campaign, and a partnership involving local authorities, transport companies and businesses, that these programmes have met with success.

In Mumbai too, the efforts of the Action Groups (composed of NGOs, Petrol Dealers’ Association, WIAA, as well as government bodies), proposed by Dr. Chahande (then Collector of Mumbai) and the initiatives taken by the Transport Commissioner, Mr. V.M. Lai, are having a small but sure effect on the problem of vehicular pollution. Already, more than 4000 vehicles emitting pollutants beyond prescribed limits have had their licences suspended; and oil companies are proposing to sell mixed fuel through petrol pumps to reduce pollution from two and three wheelers.

Ultimately, it is only by creating awareness, adopting a combination of measures, and taking a cooperative rather than a confrontational approach, that we will be able to find a way out of the tangled issues that are responsible for Mumbai’s transportation woes.

The City welcomes suggestions and feedback from readers. Please write to us and give us your views.

S. D. Kulkarni
Chairman, Bombay First

Mr. S. D. Kulkarni was formerly MD & CEO of Larsen & Toubro Limited and Past President of Bombay Chamber of Commerce and Industry.
Dear Industry Leaders,

Greater Mumbai’s population grew by 38% from 1971 to 1981, and another 20% between 1981 to 1991 to reach 9.9 million. Today it has exceeded 12 million. The suburban rail services transport about 5.2 million suburban passengers per day on some 2000 daily EMU services. The total number of motor vehicles registered as on 31.3.1999 in all the three Regional Transport Offices in Mumbai is 9,10,728. Of these, 55,000 are taxis, about 1,00,000 are autorickshaws and 3,500 are buses. Though the existing road infrastructure can handle only 2,50,000 vehicles, the number of vehicles is likely to touch 1.6 million by 2010 as 110 vehicles are added to our roads every single day. The average speed of vehicles in the city is 6 to 8 km/hour.

A 1990 study of two high density traffic areas in Mumbai found a significant correlation between concentrations of air pollutants and the frequency of colds and attacks of breathlessness. Mumbai has the second highest pollution levels in India (660 tonnes of pollutants), next to Delhi (1,046 tonnes of pollutants). Of this, 69% is caused by vehicular pollution, 27% by industries and the rest by other sources such as refineries, thermal power stations, dumping grounds, bakeries, etc. A World Bank study reveals that some 4,500 deaths in Mumbai were reported in 1997-98 due to respiratory diseases and chest complications caused by pollutants.

We are a commuter city. We move the whole population of Australia or Singapore every day. Commuting is for work and trade. Roti, Kapada, Makaan aur “Commute”.

And yet the conditions faced by commuters are abysmal. Long, exhausting journeys in extremely overcrowded and dirty conditions have had inevitable results:

a) Low productivity of people
b) Unhealthy environment
c) Inability to live in clean suburban areas

As a matter of fact, if we delve deeper, we find that many of the major economic and social ills faced not only by our city but by our country viz; poverty, poor healthcare, slums, low productivity – are directly linked to transport problems. Therefore, the transport problem will have to be on top of the social responsibility agenda of the leaders of industry in our city.

It is a classic project for the Bombay First platform, as there are a number of participants in the tragedy. We, the industry, the Government Departments and other agencies, the railways, the NGOs, Citizens groups, etc. should initiate improvement of transport, especially public transport in the city. Various activities and suggestions which are already on the table are:

1. The MUTP-II project.
2. Critical Assessment of the Flyover Project.
3. Initiation of Water Transport.
4. Area Traffic Management in the City.
5. Environmental Issues directly related to Transport.

We would like you to participate and help in making Mumbai once again a livable city.

Krishna Kotak
Chairman, Transport Committee,
Bombay First
CNG: THE COST-EFFECTIVE, NON-POLLUTING GREEN FUEL

In the recent anti-pollution drive launched by the RTO in Mumbai, in the first three days alone, some 365 taxis, 59 trucks and 5 tankers were found to have smoke density levels way above the permitted level of 70 hartridges. Some spewed smoke with density levels as high as 90 to 100 hartridges.

The amount of pollution caused by automobiles running on petrol and diesel is alarming. Among several hundred pollutants, hydrocarbons (HC), carbon monoxide (CO) and oxides of Nitrogen (NOx) are the most harmful ones for human beings. HC emissions originate from fuel tank, carburetor, crankcase and engine exhaust. CO emissions are caused by rich air-fuel mixtures and incomplete combustion. NOx emissions occur mainly due to high coolant temperatures, combustion chamber deposits, advanced ignition timing or defective vacuum advance. Typically, in a car with no emission controls, 55% HC emissions come from exhaust, 25% from crankcase, 20% from fuel tank and carburetor evaporative losses while 99% of CO and NOx emissions come from engine exhaust.

The high level of pollution associated with petrol and diesel has led to an increasing awareness of the advantages of Compressed Natural Gas (CNG) as an alternative automotive fuel. The idea is not a new one. In countries like Australia, New Zealand, Italy and Argentina, CNG has been used for almost 50 years. Technology has developed over this period and is now more widely available as many countries are realizing the benefits of CNG as an automotive fuel.

Like petrol and diesel, natural gas is a fossil fuel, derived from mineral oil. Mineral oil is formed by the decomposition of marine plants and animals, compressed under layers of sediment on the sea bed, although land movements may have shifted the deposits. Crude oil consists of compounds of hydrogen and carbon (hydrocarbons) which can be split up by distillation. The hydrocarbons that boil at a low temperature form petrol, those that boil at higher temperatures produce diesel. Natural gas collects over oil deposits and can be released by drilling. Its main constituent is methane. Natural gas is piped to wherever it is needed. CNG is the same natural gas which is supplied by pipelines to homes, offices, commercial and industrial premises, but is compressed to enable sufficient quantity to be stored in cylinders for vehicle operations.
Advantages of using CNG

**CLEAN BURNING**

First and foremost, in contrast to petrol, emissions from a vehicle driven by CNG are minimal and are harmless to human beings. A comparison is given below:

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<thead>
<tr>
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<th>Petrol</th>
<th>CNG</th>
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<tr>
<td>CO (gms/km)</td>
<td>13.40</td>
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<tr>
<td>HC (gms/km)</td>
<td>1.70</td>
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<td>CO (at idling speed)</td>
<td>2.40</td>
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<td>(% by exhaust volume)</td>
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**COST EFFECTIVENESS**

CNG is quite economical in comparison to petrol. Petrol costs Rs.27/- per litre whereas 1 kg. of CNG costs Rs.12/- (1 kg. of CNG is equivalent to 1.44 litres of petrol). Considering that a car in normal conditions runs an average of 10-12 kms. on 1 litre of petrol, the same car will cover at least 20 kms. on CNG!

In many countries, the overall costs of natural gas operations, including capital maintenance and fuel are much less than the total costs of running conventionally fuelled vehicles. Payback periods, sometimes less than two years, vary with local circumstances especially those relating to Government taxes and financial incentives.

**EFFICIENT OPERATION**

Wear and tear of the engine is greatly minimized as CNG is much cleaner than petrol and diesel. Another advantage with CNG is that, unlike petrol, fuel cannot be stolen as gas escapes when the cylinder is opened.

As CNG is lighter than air, in the event of leakage it will rise and disperse rapidly in air.

CNG will ignite only if the gas-air ratio is between 5% to 15% by volume. The ignition temperature of a gas-air mixture is approximately 700°C.

**ABUNDANT AVAILABILITY**

Petrol prices have been going up. On the other hand, unused natural gas is flared up in oil wells. As natural gas resources are quite large in India, it is advisable to make proper and constructive use of the same instead of letting it go waste.

In present, there are only 6 refilling stations in Mumbai – at Vile Parle, Chembur, Mumbai Central, Agripada and at Saki Naka – Andheri, besides Mahanagar Gas Limited's (MGL) master station at Wadala. It is hoped that MGL will soon open more stations so as to give better service to CNG-operated vehicles and encourage petrol and diesel vehicle users towards converting to CNG. There is also an urgent need to open gas filling stations on highways. Once these infrastructural problems are solved, we are sure that more and more vehicle owners will convert to CNG and help maintain a cleaner environment.

In Mumbai, there are approximately 8,000 vehicles running on CNG, most of them being taxis. The B.E.S.T. has taken a positive step in this direction by successfully converting few buses to CNG. We hope that more such buses come on the road soon.

Let us press for better infrastructure of CNG filling stations in Mumbai and let many more vehicle owners convert their vehicles to CNG.

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**Role of Premier Auto Electric Ltd. (PAE)**

Premier Auto Electric Ltd. (PAE) is the leader in the field of retrofitment of dual-fuel CNG kits and cylinders. PAE has till date, converted more than 750 cars to CNG and plans to convert another 1000 cars in the current financial year. PAE has been authorized by GAIL to carry out CNG Conversion on automobiles. The major components of the CNG Conversion Kit are:

- CNG Cylinder
- CNG Regulator
- Change-over switch
- Petrol Solenoid
- Platino
- Air Gas Mixer

Any petrol driven car can convert to CNG and what is more, even after conversion, the car can continue to run on petrol. If the car runs out of gas and there is no gas station close by, the driver has the option to switch to petrol.
As a city which is poised to become the second most populous in the world around 2010, the choice of urban transport is an issue which is of great concern. Mumbai has a unique public transport system, in which no fewer than 86 per cent of the population travels by train or bus. However, instead of doing everything in its power to strengthen these services, the Maharashtra government is augmenting its road network by erecting as many as 50 flyovers, which will primarily benefit private motorists.

All over the world, transport experts are coming round to the view that the car is the biggest nuisance on the roads: cars are polluting (60 per cent of Mumbai’s air pollution is caused by vehicles), noisy, dangerous and block space, whether stationary or mobile - space which would otherwise be open for public transport and pedestrians. Every day in Mumbai, there are now 8 lakh vehicles, 4,000 trucks, 300 milk tankers and 400 trucks with perishables negotiating the roads. As a consequence, the average speed of vehicles, which was 20 km per hour in 1993, has slowed down to 12 kmph last year and threatens to crawl to 2 kmph in 2001.

As realization has dawned that the unique benefits promised by cars - personalised, efficient and comfortable conveyance - are negated once everybody gets into the act, many countries are putting curbs on cars. In the square mile that constitutes “The City”, London’s international finance centre, no one takes cars to work and every destination can be reached on foot in 15 minutes. The most ruthless in restricting the use of cars is Singapore, where the government auctions cars. Every owner not only has to pay a hefty tax which sometimes may exceed the cost of the car; he has also to confirm that he has parking space. Besides, there are fees to be paid to enter the central business district. Of course, all this is backed up by excellent public transport. An even better example, as far as poor cities are concerned, is Curitiba, a town in Brazil, which is world-renowned for its virtually universal bus transport. It has planned its city in such a way that buses ply continuously and unhindered for a nominal price. Many other European cities are declaring areas in city centres out of bounds for traffic, which benefits pedestrians and shops alike.

For a city to turn its back on this global experience and instead of trying to restrict the use of cars through higher taxes, anti-pollution penalties, etc. actually to create additional facilities for motorists, would seem to be an act of wilful self-destruction, but that is exactly what we in Mumbai are doing. Wheel taxes have not gone up for 60 years, even while bus fares have risen very nearly a hundred-fold.

While it is one thing to oppose additional facilities for cars, how else can a city like Mumbai augment its transport services? The second phase of the World Bank - aided MUTP-II project scheme envisages additional rail lines, east-west city connections and more trains, which is what Mumbai really needs. Probably, there is no city in the world of this magnitude where so many commuters depend on local trains to reach their offices - equal to the entire population of Singapore! What the authorities are considering is an underground railway, which was proposed nearly three decades ago. The project was buried not only because of the cost but because it was assumed to be not feasible technically, given Mumbai’s propensity to flood during the monsoons. However, more sophisticated technology now may exist to take care of such eventualities. A private consortium headed by Tata...
Consultancy Services has in fact resurrected the project, proposing a 25-km-long line from Kurla to Colaba. It is now estimated to cost Rs.6,500 crore. Experts should also look at the possibility of constructing railway lines above the existing central and western tracks. This would not, unlike an underground system, entail huge excavation and occupy additional space. There is also sufficient land available along the Mumbai Port Trust road, which runs along the city’s north-south axis and is now severely underutilised.

**Marine Transport**

Marine transport is yet another alternative which deserves serious consideration. While it may not replace rail and road, it can certainly supplement these. Private operators are considering providing a service between Borivli in the western suburbs to Nariman Point, which would only take 20 minutes and there would be bus connections at either end. It would be expensive, but would eliminate 4,000 cars a day along the west coast and cater to those who share taxis today. Operators believe that with more sophisticated craft available, the service need not shut down for more than 15 of the roughest monsoon days. There is the added advantage of being able to transport cargo by barges along the east coast.

**Improved Bus Service**

Last, but by means least, is to improve the efficiency of the bus service, which is widely recognized to be the best in the country, but which can barely cope with the tremendous pressure. The introduction of air-conditioned buses on point-to-point services should ease the demand for cars and taxis. Other suggestions—which are applicable to trains as well—are to reconfigure the seating so that standing passengers are given more room. Buses could move along circular routes in the suburbs and drop commuters to the nearest point on arterial roads, where faster and bigger vehicles could whisk them to the city. As in Bangkok, which has about the worst road traffic in the world (after Lagos, apparently), there could be a special lane for buses to move against the flow of traffic on the opposite side of main roads.

But all this has one caveat. Unless experts devise means of curbing the use of cars, any attempt to introduce an element of sanity in an urban transport system will be doomed to failure.
Mr. D.M. Sukthankar, Chief Advisor, Bombay First pointed out that private vehicles occupy over 80% of road space and carry only 17% of all passengers, while public transport occupies only 16% of the space and carries over 80% of passengers. Priority should therefore be given to public transport over private vehicles. In the context of Mumbai, there are certain peculiar features like the north-south linear movement. There are also problems like parking of vehicles on the road, handcarts, and proliferation of stray cattle, all of which reduce the efficiency of available road space. There is very little scope for widening roads in the city. East-west connectivity is also not well developed. As regards solutions, Mr. Sukthankar felt that better traffic management is more essential than highly capital-intensive solutions.

Stating that various traffic studies undertaken in Mumbai had never contemplated the construction of so many flyovers as undertaken today by MSRDC, Mr. Sukthankar expressed concern about the delayed implementation of MUTP II and the fact that rail transport has not been given prime importance.

Mr. P.L. Bongirwar, Chief Guest, shared the plans of MSRDC with regards to the flyover project and various other schemes under implementation. He described the Maharashtra Government's plan to construct four expressways i.e. Mumbai-Pune, Mumbai-Nasik, Mumbai-Talasari-Ahmedabad and Mumbai-Sawantwadi (costing approximately Rs. 10,000 crores), and explained that the main concern was the need for fast accessibility to the starting point of these expressways, as they started outside the limit of Mumbai city. He in the north of Mumbai Island. Of the 50 flyovers, 36 are on the Western Express highway, the Eastern Express highway and the Sion-Panvel road (i.e. the east-west corridor). The Jogeshwari-Vikhroli link road is being developed as another east-west corridor. Mr. Bongirwar mentioned the difficulties in developing some of the other east-west corridors like the Goregaon-Mulund link road due to the Borivli National Park, and the Santacruz-Highway and Andheri-Ghatkopar link road due to heavy encroachments.

MUTP I findings show that flyovers have improved the flow of traffic and congestion substantially and have also reduced vehicular pollution. MUTP II findings show that flyovers are cost-effective solutions for vehicles and buses. Commercial exploitation was explained as usage of space under flyovers. Potential customers are courier services, private airlines, and airfreight agencies, who have space constraints near existing airports. The aim is to prevent encroachment under the flyovers and at the same time to generate as much revenue as possible. Also car parking space, display showrooms and space for godowns are planned.

"The objectives of this seminar were to enlighten the public about the flyover project and its benefits, to provide a forum for debate and to discuss alternative scenarios for traffic management in Mumbai."

Mr. W.J.N. Danait, CEO, Bombay First.
Mr. Shirish Patel, SPA Consultants, stated that the decision to invest Rs.1500 crores in flyovers is a case of misplaced priorities. He compared the percentage of the population which would benefit by spending the said amount on infrastructure schemes like water supply and sewage disposal as compared to the flyover program. Mr. Patel asserted that flyovers have a small role to play in improving traffic conditions of the city. The WS Atkins report of 1994 shows that 88% of peak hour journeys in the city are made by public transport. Hence major investments should be in upgrading public transport. The report also shows that only Rs.45 crores need to be invested in the flyover program against the present Rs.1500 crores. The Report recommended that the bulk of the spending should be on railways (69%) and on various highway schemes (22%) – of which 2.25% was for ROB (Road Overbridges) and RUB (Road Under-bridges) for railway crossings.

Ms. Sucheta Dalal, Journalist and former Business Editor, Times of India, pointed out that it would be fruitless spending time on debating whether the flyovers are justified or not as the construction of most of them has already started. Before undertaking work on the remaining flyovers, it should however be ensured that a detailed assessment of their traffic and environmental implications is first made. Alternative solutions to ease traffic problems should also be explored. She also stressed that BEST should change its monopoly attitude and allow private sector investment in public transport which will ultimately improve the public transport system in Mumbai and discourage car owners from commuting by private vehicles.

Mr. A. V. Ghangurde, Chief, Transportation and Communication Division, MMRDA, stated that in traffic and transportation engineering, flyovers are one of the major solutions for better traffic management. However, flyovers are a highly capital intensive solution. Further, although the main objective of the MMR Regional Plan is to change the north-south axis to the east-west axis, the flyovers already planned will mostly benefit north-south movement.

Despite the fact that over the years, north-south vehicle movement has declined, the east-west axis is still being neglected. The area-wise impact on traffic on the entire network of roads also needs to be studied. For example, in the Island city, the present capacity cannot even cope with the present demand and if additional traffic is generated in the city, city roads are bound to get further congested.

The main goal, as the Atkins report had suggested, should be to improve the level of service on WEH and EEH, and not construct more flyovers. For example, capacity building and traffic management in areas between intersections, commonly termed as midblocks, needs to be upgraded. The planning of bus systems on flyovers, improving service roads, removing all encroachments and discouraging ribbon development along the highways, planning for convenient pedestrian movement and crossing, proper drainage systems, intersection improvement, are some of the measures which should be implemented before constructing flyovers. In their absence, the optimum benefits of flyovers will not be achieved.

The design of a long viaduct is very complicated and different from that of a flyover. Clubbing the two is not justified. Commercial development conflicts with the quality and level of service. If the level of service has to be improved, then commercial development should be discouraged.

Mr. Debi Goenka, Bombay Environmental Action Group, explained the background and intricacies of filing the writ petition against the allocation of commercial space underneath the Andheri flyover. He also enquired whether an EIA study had been undertaken for the flyover projects, which are likely to cost more than Rs.1500 crores, as was, in fact, obligatory. He said that initially there was a proposal to build 9000 sq.mtrs of commercial space, mainly warehouses, below the Andheri flyover. This had now been increased to 45,000 sq. mtrs, without assigning any reasons. The members also stressed that Bombay First which represents the corporate sector should actively take up with the state Government the issue of flyovers and their overall impact on the city, and such debate should periodically continue.

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**Panel Discussion**

Mannohan Singh  
A. V. Ghangurde  
Nitin Dossa  
Sucheta Dalal
MISSION UPDATE
A meeting with the World Bank Mission on MUP-II on 29th June 1999

World Bank: Christopher Hoban, Harald Hansen, Arun Mokashi, Sameer Akbar, Alok Bansal

Inaugurating the meeting, Mr. Krishna Kotak explained the background of the project and why Bombay First is concerned about it. He recalled the World Bank’s withdrawal from the project more than two years ago and the subsequent letters addressed to the World Bank in Delhi by the various Chambers - BCCI, IMC and Maharashtra Chamber - supporting the Project, and urging its revival. The corporate sector was specially concerned about the hardships faced by its employees in commuting and the increase in pollution levels due to breakdown of public transport.

Mr. Kotak emphasized that Mumbai is the business and financial capital of the country, with fifty top companies headquartered here. He said that the voice of the Corporate Sector can make a difference and hoped that the project would go back on stream.

Mr. Christopher Hoban, World Bank Team Leader, stated that they expected the project to move forward within the next 12 months or so. He added that several states are facing a financial crunch since the implementation of the latest Pay Commission’s recommendations and measures will have to be taken to re-structure state finances for funding large projects of the MUP-II type.

Mr. Hoban said that the Mission had proposed that MMRDA should engage in a wider process of consultation with the general public and that they would like MMRDA to take on Bombay First as partners in this consultative process.

Mr. Kotak said that he was concerned about the ownership by the Railways of rail projects pertaining to Mumbai city. Mr. Hoban responded by saying that discussions with the Railways were more positive this time and that the World Bank was quite optimistic about the Railways’ commitment to the project.

Mr. Kotak said that Bombay First would try and play a useful and constructive role in the consultative process on R&R and in creating general awareness among the public about the project and its benefits. It was agreed that a meeting would be arranged for Bombay First representatives to meet the Railway Minister at Delhi to discuss issue-related to MUP-II and the operations of MRVC.

Project Funding

Regarding the surcharge on rail tickets, Mr. Sukthankar referred to the deep feeling of frustration among the public because of the long time it has taken for the project to take off. If action on the project starts soon, people may not mind paying the extra surcharge. The Railways are planning the addition of new coaches, painting of existing coaches etc. to show some visible improvement in the present situation.

MUP-II is now mainly waiting for the formation of MRVC, so that funds can be released by the GOM and Railways. Bombay First should take up with the Railway Minister the urgency of completion of all formalities for the formation of MRVC.

Rehabilitation of Project Affected Persons (PAPs)

This has already started and about 1000 families have been relocated. It has been proposed that re-settlement cells should be constituted by different project-implementing agencies, such as MSRDC, MCGB, Railways etc., both for road and rail components. These cells should start acting soon and financing will not be a hurdle. The resettlement of project-affected persons along the main Western and Central Railway lines will be taken up first and will be followed by that of PAPs along the Harbour Line, which is far more difficult. However, in case the Railways need to deal with certain locations even on the Harbour Line, which are hampering their operations, they can take these up and extra funds could be provided for such specific areas without waiting for the entire Harbour Line PAP rehabilitation being taken up.
JOINING FORCES

Starting on April 1, 1999, the then the Collector of Mumbai, Dr. Sanjay Chahande held a series of meetings with various concerned agencies of the government, Bombay First and NGOs such as Clean Mumbai Foundation. The idea was to concentrate on one causing potential. These emissions could be due to various reasons such as old engines, use of adulterated fuel, lack of vehicle maintenance, non-compliance of PUC requirements, etc. Dr. Chahande proposed the constitution of a Task Force. Steps to address the above issues were planned at a meeting organised by IMC, Bombay First, CLEAN-AIR and Clean Mumbai Foundation.

Use of CNG by Taxis
already a number of taxis are running on CNG, which is an economical and clean alternative. However, for wider adoption of CNG more outlets are required in different parts of Mumbai. Mr. Ajit Kamlani submitted a document about promoting the use of CNG to the Collector. He stated that out of 200 petrol pumps in the city, 100 are willing to put in facilties for distribution of CNG. Only petrol taxis (say about 10,000) would be willing to convert to CNG if more distribution centres are available.

At a meeting held with the World Bank Mission on MUTP-II, Mr. Danait described the action plans which have been drawn up to tackle vehicular pollution in the city. One of these is to check PUC centres to ensure the correct measurement of pollution parameters. In this connection, Mr. Sameer Akbar, Environment Specialist from the World Bank mentioned that PUC is only for checking hydrocarbon and carbon monoxide emissions, whereas particulate matter (PM) which is the main source of pollution by diesel vehicles cannot be checked by PUC. Timely and effective maintenance of vehicles and strict enforcement are key components of any anti-pollution campaign.

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<th>CO (g/km)</th>
<th>HC-NOx (g/km)</th>
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<tr>
<td></td>
<td>Petrol</td>
<td>Diesel</td>
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<td>1996</td>
<td>8.68 – 12.40</td>
<td>5.7</td>
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<td>3.16</td>
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<td>1.13</td>
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<td>Originally Scheduled for 2000, it will now be enforced in NCR from June 1, 1999</td>
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<td>EURO II (Enforced in Europe in 1996)</td>
<td>1.00</td>
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<td>0.70 – 0.90</td>
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Euro I and Euro II norms for new petrol and diesel cars following the Supreme Court order of April 29, 1999
New Initiatives
Subsequent to the transfer of Dr. Chahande to Mantralaya, he suggested that the subject of pollution be pursued up with the new Transport Commissioner, Mr. V.M. Lal. Mr. Lal arranged a Press Conference on 1st July to announce the pollution drive for commercial vehicles, including taxis, trucks and tankers:

Mr. Lal pointed out that the major pollutants are diesel taxis and that 75% of polluting taxis have J-series registration. He also said that there are many taxis that have been converted to diesel without permission.

In the first phase of the drive from July 5 – Aug. 20, RTO officials flagged down four wheelers emitting dense black fumes and took them to their offices at Tardeo, Andheri or Ghatkopar where the vehicles were duly tested for pollution norms.

Mr. Lal explained that if the problem is rectified by a mechanic on the spot, the vehicle is released after a penalty of Rs.1,000. But if the problem is of a serious nature, registration of the vehicle is suspended for three months. However, the vehicle owner is given a grace period of four days to rectify the problem. If a vehicle, whose registration has been suspended, is found on the road, its owner is liable for criminal action.

In conclusion, Mr. Lal said that polluting three wheelers would be dealt with in the second phase, during which the drives will be extended to Thane and Pune.

Representatives of Bombay First and Clean Mumbai Foundation who attended the press conference hailed the initiative taken by the Transport Commissioner. The meeting was also attended by Mohinder Singh Ghura, President of the Maharashtra Truck Tankers and Tempo Mahasangh, who pledged all assistance towards making the drive successful.

PRESENTATION MADE BY MR. V. M. LAL, TRANSPORT COMMISSIONER, MAHARASHTRA STATE.


The main points of Mr. Lal’s talk were:

1. The Motor Vehicle Act 1915, which was amended in 1988, prescribed norms equivalent to Euro norms to be applicable from April 1, 2000. Automobile manufacturers do not comply with the present standards, though vehicles exported from their plants are being built according to the Euro II standards.

2. Stress should be given on
   a. Better quality engines - emphasis on 4 stroke.
   b. Quality standards of fuel.
   c. Conversion of cars and three wheelers to CNG fuel.

3. Plans were underway to check the pollution standards of vehicles, especially trucks entering Maharashtra through PUC checks at the border of the state.

4. Introduce Supreme Court directives prescribed for the National Capital Region in Mumbai.

5. Stop the new registration of diesel-run taxis, as they are the main culprits responsible for environmental pollution among commercial vehicles.

Measures Suggested

- Enforcement machinery to catch culprits issuing bogus PUC certificates
- Separate bus lanes and synchronized traffic signals for the city.
- Campaign to encourage the use of public transport and to introduce car pooling.
- Certifying the roadworthiness of the vehicles through private sector participation.
In January 1990, the city of Brussels launched a campaign entitled “Air-Transparency”, the aim of which was to continually monitor and provide its 950,000 citizens with information on the quality of the air they breathe. The Programme provides citizens with reliable information on air pollution levels through a round-the-clock telephone service. According to the degrees of pollution, the air quality is classified as “low”, “average” or “elevated”. If the ozone levels exceed EU thresholds, a warning goes out via the media, in particular through the radio stations. Risk groups, such as persons who engage in outdoor work or sports, have sensitive reactions to ozone, or suffer from respiratory or cardiovascular disease, are identified and advised to avoid outdoor physical exertion and to consult their physicians if symptoms occur.

Supplementing this information is an illustrated and easy-to-understand brochure that deals with the subject of air pollution and air quality management in Brussels. A section entitled “Everyone can do Something” advises people to have their heating systems or stoves checked every year, to avoid burning such materials as treated wood or plastic in their wood stoves, to have their automobiles tuned regularly, to switch to public transport or car-pooling to reduce automobile use, and to dispose of toxic waste separately so that it does not end up in the incinerator with normal household refuse.

Regular monitoring of air quality has not only resulted in lower health risks for the population, but has also enhanced the population’s awareness that emissions from automobile traffic contribute far more to air pollution in Brussels than industrial emissions.

It is hoped that growing awareness, will, in turn, make it easier to implement longer-term solutions later on. People will perhaps not be so averse then to the idea of leaving their cars at home!

WITH BEST COMPLIMENTS FROM

The Associated Cement Companies Limited

Cement House
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Tel. No. : 203 91 22  Fax No. (022) 208 0076
CASE STUDIES

Not many Indians have heard of Curitiba. But this city of 1.6 million inhabitants is not only the fastest growing city in Brazil, it has also evolved a unique public transport network that meets the needs of 70% of the population, and which is at the same time accessible, economically viable and environmentally sustainable.

Established in the early seventies, Curitiba’s Urban Planning institute aimed at diminishing downtown traffic by decentralizing jobs, creating specific places for leisure and walking areas, and encouraging the use of public transport.

Integrated Approach

An integrated approach was adopted: Curitiba’s transport system is jointly managed by the city and by private firms. The city builds and maintains the road infrastructure; but the buses are owned by private companies. These companies are in charge of the financial management of the receipts, and are paid on the basis of the number of kilometres of bus lanes they manage – and not on the basis of number of users. In the long run, this has encouraged the development of the network.

Financially Viable Network

TRANSPORTS

Curitiba’s Remarkable Bus Transport System

A flat fare is levied on all users, the idea being to avoid penalizing those who live in the poorer outskirts of the city. The system is nevertheless economically and financially viable because long journeys subsidize shorter ones, thanks to twenty strategically located transfer stations. The bus network was organized on the lines of a surface subway, though 500 times cheaper. Buses were given their own reserved lanes. Big articulated vehicles which could accommodate a large number of passengers were built. (Old buses, meanwhile, were used for the creation of mobile schools.) And bus stops were equipped with boarding tubes (where passengers could pay their fares) and elevated platforms which allowed a flow of passengers equivalent to 4 times that of conventional bus stops.

In Curitiba today, more that 800,000 commuters, some 70% of the total population, use the bus network every day, as compared to 50,000 in 1974. Per-capita gasoline consumption is 30% lower than in other Brazilian cities of comparable size, and Curitiba has the fewest cars and the cleanest ambient air in any Brazilian city.

NGO REPORT

"The application forms are over. Come again next week."

"This doesn’t come under the Pest Control department. Try Infectious Diseases."

All of us, at one time or another, have had frustrating interactions with government services. We feel helpless, dismiss these services as corrupt and inefficient, and wish we could emigrate to America.

It was in Jan 1999 that a few young Mumbaikars, most of them professionals, decided that the ‘curse-and-bear-it’ approach would no longer do. On reflection, they realized that corruption is not a one-way road.

Within government agencies, it is true, there is a warped understanding of “accountability”. Staff generally feel more accountable towards their superiors who hold the keys to their promotions, rather than to the citizens who are really their customers. But a share of the blame for inferior public services is also the result of lack of people’s participation.

Thus was born PRAJA, an organization that focuses on the role of all of us, as citizens, in the deterioration of the public services. It has a simple and clear vision:

Create an accountable and efficient society through people’s participation.

The following is a report by the Praja team on what they have been doing to make this vision a reality.

The Citizens’ Charter

The Citizens’ Charter first commanded our attention in 1997

Continued on Page 14
Emissions from private vehicles account for a major portion of air pollution. And most people use their cars primarily to commute to work. It is thus encouraging to learn that private companies in many parts of the world are taking steps to limit the use of individual cars. What's more, they are discovering that these measures not only improve the general quality of life, they also make good business sense.

Two Dutch engineering companies, Hijdemij and Grontrij, have taken the lead in developing innovative transport plans that aim at encouraging commuting by bicycle. Schemes include:

- **Bicycles paid for by the company if employees ride to work on an average of three times a week.**
- **Financial incentives in the form of purchase-coupons for bicycle gear and maintenance, given to people who already have private bikes which they use to come to work.**
- **Showers and changing cabins in all offices so that cyclists can wash and change before going to a business meeting.**
- **Purchase of a number of company bicycles so that people who come to work without a car, but need to visit a client, can use company bicycles.**

Every eventuality has been thought of, and provided for. To cope with bad weather days, for instance, Grontrij gives coupons for free public transportation to its cycling employees. And since some of Grontrij's offices are not easy to reach by public transportation and employees need to walk quite a distance to get from the train or bus station to the offices, the company proposes to build covered bicycle garages in cooperation with the local authorities at the stations.

Other major policy initiatives include the purchase of annual public transportation cards for employees at reduced prices. And the encouragement of car-pooling.

The Belgian airline company, Sabena, has also focussed on car-sharing. Sabena has some 8,800 employees working in the international airport of Brussels. With only three trains per hour to connect the airport with the main railway stations in Brussels, it was not at all surprising that 90% of Sabena's staff travelled by car to work. When consulted, the majority of the staff was in favour of implementation of new bus lines, but for financial reasons Sabena could not carry out such a project. The transport project thus focussed on car-sharing.

- **A data bank of offers and demands for car-pooling is managed by the company and put at the disposal of its employees.**
- **Free and reserved parking place is given to carpooling groups.**
- **The action in favour of carpooling is supported by an important information campaign within the company.**

The results of these and similar experiments are clear:

- Better internal relations between employees
- Reduction of space used for the parking of employees' cars
- Dramatic savings in car kilometres per year
- Improved health of employees.

The Grontrij, Hijdemij and Sabena examples also show that only a combination of measures, and cooperation between employees, the company and transportation companies, is effective in implementing programmes.

**PRAJA Continued**

when the Citizens' Charter of the New Delhi Municipal Corporation was distributed at a workshop. The concept of the Citizens' Charter was borrowed from the United Kingdom. Observing the success of this in improving the performance of public service providers, the Indian government decided to apply this idea to government agencies at the central, state and city-level. So far, forty-three Government Departments have developed Citizens' Charters. The Municipal Corporation of Greater Mumbai is one of them. However, its circulation is limited.

What distinguishes the PRAJA initiative is that it is truly a charter of, for and by citizens, while concurrently enlisting the support of municipal officials, thus making it a joint effort. The Citizens' Charter enables citizens to interact more effectively with the municipality. One of the fundamental problems faced by people in dealing with public officials is the non-availability of precise information. What exactly are the services to which we, as citizens, are entitled? Which particular department is responsible for these services? What is the extent of the responsibility? What is the procedure for complaint redress? Apart from providing this essential information, we decided to develop a system to supplement the complaint redress procedure, wherein chronic problems that have repeatedly been ignored by the Municipality would be taken up by PRAJA.

We then approached the Municipality with our project. To our pleasant surprise, Mr. Ratnakar Gaikwad, then Additional Municipal Commissioner, a forward thinking official, was extremely responsive to our ideas. Mr. Gaikwad introduced us to the Heads of Departments. These officials set
aside time to meet us and documented information for us. They patiently explained to us the systems at work in the Municipal Corporation and our queries were welcomed.

The information collected was supplemented by extracts from the BMC Act and other BMC publications. The heads of departments authenticated each chapter, which was also whetted by retired BMC officials. The Tata Press Yellow Pages is carrying a condensed version of the Charter in their latest edition. A major daily newspaper is also working with us to print the Citizens’ Charter in Marathi and English for distribution to its subscribers.

The Citizen - Municipality Inter-Active Workshops

Thus far we had succeeded in getting the municipal officials aligned with our objectives. The next step was to garner the support of the staff actually delivering the services. We did this through interactive workshops. So far, workshops have been held at 16 of the 23 municipal wards. At these workshops, staff are informed about the Citizens’ Charter and the standard of performance expected of them. Their feedback is taken on the content of the Charter, making them feel a part of the process. These workshops also facilitate a valuable bond between municipal staff and PRAJA members.

What the future holds...

We realize that there are plenty of organizations that share our vision. We look forward to associating with them to foster a dovetailing rather than a duplication of activity. We have already started working with groups like Bombay First, Dignity Foundation and Agni. A number of Resident Groups are also absorbed in struggles with the municipal authorities. These groups would benefit from the information contained in the Charter. Simultaneously, we would encourage them to support each other to combat any lethargy and corruption experienced.

We also plan to encourage the formation of such groups in areas where no such citizen bodies exist. Such associations would shake the service providers out of their apathy and encourage people’s participation in the current system of governance where this is grievously lacking.

Pressure Group

Though the Charter has developed a clear line of complaint redress, there are still situations when certain problems would not be effectively dealt with. We therefore propose that a group of distinguished citizens such as retired Municipal Commissioners, viz., Mr. B.G. Deshmukh, Mr. Jamshed Kanga and Mr. D. M. Sukthankar, as well as professionals like Mr. Gerson da Cunha, could meet with the Additional Municipal Commissioners, the Municipal Commissioner and the Mayor frequently to work through macro urban issues.

Project Performance

To follow up the Citizens’ Charter, the essence of which is people’s participation; we would then initiate our next project - the basis of which is accountability.

Project Performance adopts the Report Card system of evaluating the performance of public service providers and elected representatives, viz. Corporators, M.L.A.s and M.P.s. Developed and used extensively by the Public Affairs Centre, Bangalore, this evaluation by citizens is carried out scientifically through the Survey method. Feedback is provided to the municipal officials and elected representatives and commitments are extracted from them to improve services that were rated low.

Epilogue

The Charter has been distributed through the Tata Yellow Pages and the Indian Express. We hope that citizens will now feel empowered to hold government agencies and their elected representatives accountable and demand their right to competent public services. Simultaneously, we trust that service providers will begin to respond to the feedback of the service users effectively, thus building a spirit of mutuality between citizens, service providers and elected representatives.

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