

15 Delhi Dying?

A Pragmatic Approach for a Clean and Healthy Delhi.

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Delhi has been one of the great centres of human civilization, famous for its beauty, architecture and culture. To-day Delhi is in danger.

The area of contemporary Delhi in the triangle between the river Yamuna and the Northern and Southern Ridge, on the transit routes from north to south and east to west, saw at least seven cities - or fifteen, or more? It is assumed that Indraprastha, the legendary capital of the Pandavas, scene of the epic Mahabharata, is buried under the Purana Qila, the "Old Fort". Dynasties rose and perished and each founded a new capital, from Lal Kot near the Qutub Minar (about 1052) to Siri, the capital of the Khiljis (about 1302), the first Tughlaq ruler Ghiyas-ud-din, moved south and built Tughlaqabad, his son Mohammed Tughlaq founded Jahanpanah before he unsuccessfully tried to transfer the capital to central India. His successor, Feroze Shah, moved north again to what is to-day Kotla Feroze Shah, then on the banks of the river, and the Moghul emperor Humayun built his capital Dinpanah with the Purana Qila in the 16th century on the soil of Indraprastha. These frequent changes don't necessarily reflect pride and whims of kings, but they were probably caused by changes in the course of the river, failed monsoons and scarcity of water, problems which haunt Delhi even to-day. The seventh city Shajahanabad, built by emperor Shah Jahan from 1638 onwards, was the most splendid capital, vibrating with the arts and sciences, a brief happy period, when Shah Jahan had a Persian couplet engraved in his audience hall: "If there is a paradise on earth, it is here, here and here". The British destroyed much of Shajahanabad, but added New Delhi, the so-called Lutyen's Delhi¹, which served as the seat of government for British-India since 1932. The whole of Delhi is now the capital of independent India and with

its many historic places, its wide avenues, parks and recreational space Delhi is truly the most beautiful metropolis in modern Asia.

However, Delhi has during the last 50 years grown beyond its capacity and when a city becomes a metropolis, the human scale is lost. This means critical changes in complex human relationships, which tend to become impersonal, apathetic, selfish and disinterested.

The capital of independent India has grown from 1,744 million inhabitants in 1951 to 12 million at the turn of the century and may well be home to 14 million people by 2001. Per year 500 000 people are added, 200 000 by natural growth and about 300 000 men and women migrate to Delhi every year. Alongside its political and administrative importance the capital has also attracted the arts and science, commerce and industry. But the fast growth is mainly a fall-out of underdevelopment in some of the neighbouring states. People come in search of work and livelihood.

Needless to say, Delhi is bursting at the seams and civic amenities are insufficient - there is shortage of power and water, lack of an efficient public transport system, hospitals, schools, and housing cannot keep pace. Hence the amorphous growth of slums and an alarming increase of begging and of crime, heightened by the multiplying of monkeys and street dogs, which harass human beings. Pollution has reached intolerable levels - Delhi is now the fourth polluted city in the world and may before long become the most polluted place worldwide. 1 999 tons of pollutants are emitted every day, compared to 100 tons a decade ago.

The scarcities of daily life led to a phenomenon half-jokingly called "internal secession", meaning, who ever can afford it, buys a private vehicle, operates a generator, digs his/ her own well and uses courier services instead of the post-office. Thus pressure on existing facilities gets even intensified.

(Here table 1, map "Growth of Delhi" and table 2 "Growing Concerns of Delhi".)

¹ Edwin Lutyens and Herbert Baker were the architects of New Delhi.

Shortsightedness and lethargy on the part of decisionmakers may be one reason for the present drama. There are however structural factors, which are partly responsible. Delhi is not a normal state like West-Bengal or Tamilnad, since 1993 it is a National Territory, an improvement on its previous status of Union Territory². Delhi now has a Legislative Assembly and a State Government. But being the national capital, the Centre has reserved some administrative competence. I.e. the power of police is exercised by the Central Government, railways, telecommunication and environment are central subjects. No less than six central ministries, from Petroleum to Environment, from Urban Development to Surface Transport are involved in any legislation on pollution control, together with the respective departments in the Government of Delhi, which is responsible for roads, drainage and land acquisition, to name a few. There are even two local bodies, the New Delhi Municipal Council (NDMC) and the Municipal Corporation of Delhi (MCD) and several semi-autonomous bodies in charge of water supply, electricity, sewerage and sanitation. The existing ring-railway around Delhi could, in theory, relieve the congested public transport system, it is operated by the central Ministry of Railways, but feeder busses would have to be supplied by Delhi Transport. These many authorities don't always work and plan together. (here table 3: Functional Responsibilities of different Government Organisations).

The city's main problems are : Water, energy, air, transport, and waste.

1. **Water** : the supply of water falls short of 200 000 gallons daily. Water runs from the household taps only for a few hours a day, at the peak of summer it often fails completely. The main source of water is the Yamuna River, which is tapped at Wazirabad before it enters Delhi and channelled into a treatment plant. It does provide reasonably clean water. In middle-class homes tap-water for drinking will be boiled and/or run through filtering equipment, the more affluent families buy

² Union Territories are small units which do not have the same political representation as the States. They are administered by the Union Government through a Lt. Governor, i.e. Chandigarh or Diu

mineral water drawn from distant sources in the mountains or even from Pondichery more than 2000 km away! Needless to say, that the slum dwellers often don't have access to water taps at all. The river runs 48km through Delhi and becomes a slow drain for nine months of the year. 264 million gallons of industrial sewage are added every day, the city's open drains release 500 million gallons of waste water and sewage into the Yamuna.

2. Energy: Delhi is short of electricity to the tune of 350 MW per day. There are four reasons for this shortage: 1. Delhi does not generate enough power and is therefore dependent on importing power from powerstations in other states, notably in Haryana. 2. Much of the shortage, however, is home-made in Delhi itself. Illegal tapping of power leads to losses of 40-50% and not only poor people pilfer electricity, industries and even the owners of posh farmhouses in the south of Delhi are equally culpable. 3. In addition, maintenance is poor and equipment often substandard. 4. Last not least faulty meter reading adds to the losses. And the citizens suffer frequent power breaks.

3. Air: Delhi is now considered to be the fourth most polluted city in the world. About 2 000 metric tons of pollutants are emitted every day. The contributors are:

Vehicles	64%
Thermal Plants	15%
Industry	12%
Domestic	7%

The dust concentration is unusually high compared to other cities in the world, depending on the location, the season and the time of the day.

Suspended matter microgrammes/cubicmeter:

Mumbai	228
Kanpur	488
Calcutta	527
<u>Delhi</u>	<u>700</u>

London 221

New York 178

Two million vehicles are plying on Delhi's roads and 200 000 are added every year, not counting vehicles in transit from other states. The main polluters are busses, trucks and autorikshahs with their two-stroke-engines. Poor maintenance of vehicles and adulteration of petrol or diesel are the major reasons for the intense pollution.

4. Waste Delhi produces close to 6 000 metric tons of solid waste every day.

On average each Delhi resident causes 0.4 kg of garbage per day, that means 12 kg per month, 144 kg. per year. That is actually much less than what residents of highly industrialized countries produce in the way of garbage, but still, Delhi's three garbage dumps are insufficient. Also garbage is not being collected regularly, as a result wild garbage dumps appear all over the place.

Action to be taken :

Neither are the citizens helpless nor are civil servants without powers..

The need of the hour is to create awareness, citizens and administrators alike must learn to think environmentally, in a holistic and future oriented way.

A "*Delhi Renewal Plan*" is going to be launched soon together with a "*Delhi Renewal Task Force*". The first thrust will be on the reduction of emissions from vehicles. The old busses of the Delhi Transport Corporation must be replaced by busses with an improved design. Similarly vehicles older than 15 years need to be phased out. *Action* : Delhi Government.

Stricter vehicular emission norms corresponding to Euro II will have to be enforced effective from the year 2 000. *Action* : Ministry of Surface Transport and Ministry of Industries.

Cleaner fuels need to be introduced like propane, CNG, Alcohol and batterie-driven motors. *Action*: Ministry of Petroleum and Natural Gas and Delhi Government.

The checking of adulteration of fuel is an urgent task. *Action* : Ministry of Petroleum.

Furthermore the implementation of regular/rigorous inspection and maintenance programmes for all types of vehicles has to be made compulsory. *Action* : Transport Authority.

As can be seen, several central ministries have to get active together with the Delhi Government.

Some steps have already been taken, i.e. three monthly pollution controls for private vehicles are prescribed by law. Only leadfree petrol is being sold at Delhi's petrol pumps.

However thus only the symptoms are being cured, the main task is to improve the public transport system. The existing circular railway could be effectively used. A high capacity bus system would relieve some of the congestion. A mass rapid transport system has to be built and construction has actually started.

Regarding water and the renewal of the Yamuna river several actions are necessary:

Firstly sewage needs to be pumped to the full capacity of the existing sewage treatment plants and the sewers and pumping stations need to be regularly maintained. Entire urban settlements have still to be provided with sewerage and sewage treatment. *Action*: DWSSDU (Delhi Water Supply and Sewage Disposal Undertaking). Furthermore hazardous waste (like used batteries) needs to be identified and disposal facilities have to be developed. *Action*: DPCC (Delhi Pollution Control Committee) and Delhi Government.

Some achievements in controlling the pollution of the Yamuna's 48 km Delhi stretch should be noted though:

14 sewage treatment plants are under renovation/upgradation/construction.

15 common effluent treatment plants in 20 industrial estates have been initiated for construction. All large and medium industries and some units of small scale industries have provided effluent treatment plants.

The shifting of polluting industries from non-conforming to conforming areas is in progress.

Waste needs to be turned into wealth. The art of recycling is fairly advanced in India, but it still needs to be organized in a systematic manner. In order to do that local authorities must take up door-to-door collection. This happens already in some areas, in fact new jobs have been created for this purpose and the residents contribute to the cost. The collection and transportation system needs to be modernized, which is the responsibility of the MCD and the NDMC. Like in some industrialized countries of Europe the public must be made aware of and learn the segregation of waste into biodegradable and solid waste, the former will be recycled as fertiliser. Glass and paper should be collected separately as it is raw material. NGOs and local Residents Association have to be involved in the spreading of public awareness. Biomedical waste is still a great problem, however guidelines for the treatment and disposal of such waste including standards for incinerators have been developed. Rules for bio-medical waste need to be notified *Action* to be taken: Ministry of Environment and Forests. These rules must be enforced by local authorities and small hospitals and nursing homes have to set up common treatment facilities - a task for the Delhi Pollution Control Committee (DPCC). Following a public interest litigation the Supreme Court has directed the Central Pollution Control Board (CPCB) to monitor collection, transportation and disposal practices adopted by the MCD and the NDMC. What has been achieved is: the existing waste receptacles have been improved and are being better maintained than before. Also the frequency of garbage lifting has been increased. The landfill sites have been improved. Awareness among the authorities concerned is being created.

Last not least awareness of saving water needs to be spread. In spite of acute water shortage water is still being wasted mindlessly. NGOs can help to inform the citizens (here table 4 : Unintentional Wastage of Water). The media too should intensify their efforts to create environmental consciousness.

Noise pollution is a new concept for India, but with the availability of various technical devices noise levels have gone up dramatically in the cities. The standards for ambient noise, vehicular noise and guidelines for noise control of appliances and public address systems as well as for diesel generator sets have been developed. But these standards need to be enforced. The use of loudspeakers in residential areas must be restricted and the use of stationary diesel generators prohibited. Unfortunately the public address systems of temples and mosques seem to compete with each other in decibels in the name of misunderstood traditions. Similarly political parties don't spare the eardrums of the voters. 192

There are numerous other issues, the one of utmost concern is the growth of slums following migration of labourers from other states. Builders are the greatest polluters. They recruit labour from Bihar, U.P. etc. but don't provide them with accommodation or sanitary facilities. Nobody builds for the poor. Hence they construct their own temporary huts, so-called jhuggis, in places where there is no water, no electricity, no sanitation. By now about one third of the city's population are slum dwellers. Every removal to a solid building costs the Delhi Government Rs. 50 000.-, obviously resources for such rehabilitation are scarce.

The *Delhi Renewal Plan* mentioned above, seeks to involve the citizens through residents' welfare bodies, women's associations, transporters' unions etc. More power should be given to the Citizen Wardens, whose number must grow from 300 at present. The least citizens could do is to protect the existing trees and plant environment friendly ones which improve the quality of the air like Amla, Peepal, Banyan, Neem and Ashoka, which help to clear the air (here table 5: Panchavati).

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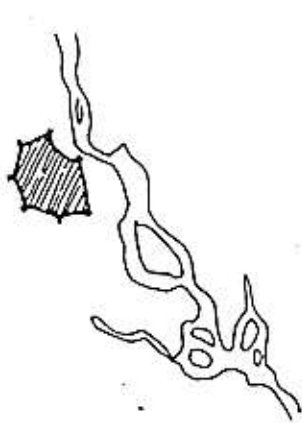
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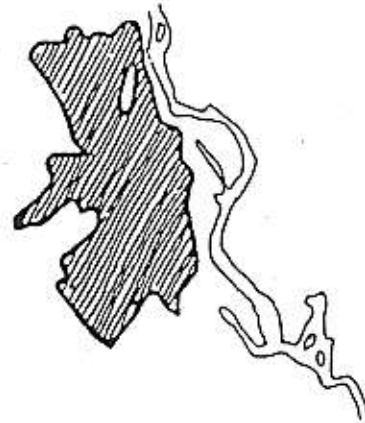
Delhi has been destroyed many times during the last thousands of years, but always a new city emerged. It is time we think about a renewed Delhi.

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Growth of Delhi



Delhi early 19th cent.



Delhi 1914



Delhi 1959



Delhi 1981

THE GROWING CONCERNS OF DELHI

Issues	1991	1997	2001
Population	94.2 lakhs	115 lakhs	140 lakhs
Pollution (ranking in the world)	4	2	1
Vehicles	19 lakhs	26.8 lakhs	40 lakhs
Shortage of drinking water (daily)	2.2 crore gallons	20 crore gallons	22 crore gallons
Shortage of electricity	105 MW	350 MW	408 MW
Shortage of hospital beds	7300	22,930	33,350
Unemployment	9 lakhs	11 lakhs	34 lakhs
Population living in slums	13 lakhs	22 lakhs	48 lakhs
Average speed of vehicles	45 kmph	30 kmph	16 kmph

Annexure (1)

**FUNCTIONAL RESPONSIBILITIES OF DIFFERENT GOVERNMENT ORGANISATIONS
FOR PREVENTION AND CONTROL OF POLLUTION IN DELHI**

Type of pollution:

Nodal Ministry/Govt. organisation

- | | | |
|------------------------|---|---|
| 1. Vehicular pollution | - | Ministry of Petroleum and Natural Gas (introduction of cleaner fuels, supply of 2T-oils, fuel adulteration, unleaded petrol, low sulphur fuel, CNG/LPG etc. |
| | - | Ministry of Surface Transport (legislation on motor vehicles, vehicular emission norms, penalties etc.). |
| | - | Ministry of Urban Development (mass rapid transport system, urban planning and development). |
| | - | Ministry of Industry (industrial policy and promotion, industrial development) |
| | - | Ministry of Home Affairs (for Government of NCT of Delhi) (Traffic Police). |

Ministry of Environment & Forests (protection of environment, recommendation regarding emission standards, surveys on air quality monitoring etc.)

Govt. of Delhi (DPCC, State Department of Environment, Transport Department/Public Works Department)

2. Industrial Pollution:

DPCC, State Department of Environment, Ministry of Industry, MOEF. (standards, surveys, monitoring etc.).

3. Domestic waste water and municipal solid wastes:

MCD/NDMC, Ministry of Urban Development, State Department of Environment, DPCC, Water supply and sewerage undertaking of Govt. of Delhi, MOEF etc.

4. Industrial Solid Wastes:

State Department of Environment, DPCC, Industrial department, Ministry of Power, DESU, NTPC, MOEF etc.

5. Noise Pollution:

State Department of Environment, DPCC, Transport Department of Delhi, Delhi Police, MOEF etc.

UNINTENTIONAL WASTAGE OF WATER

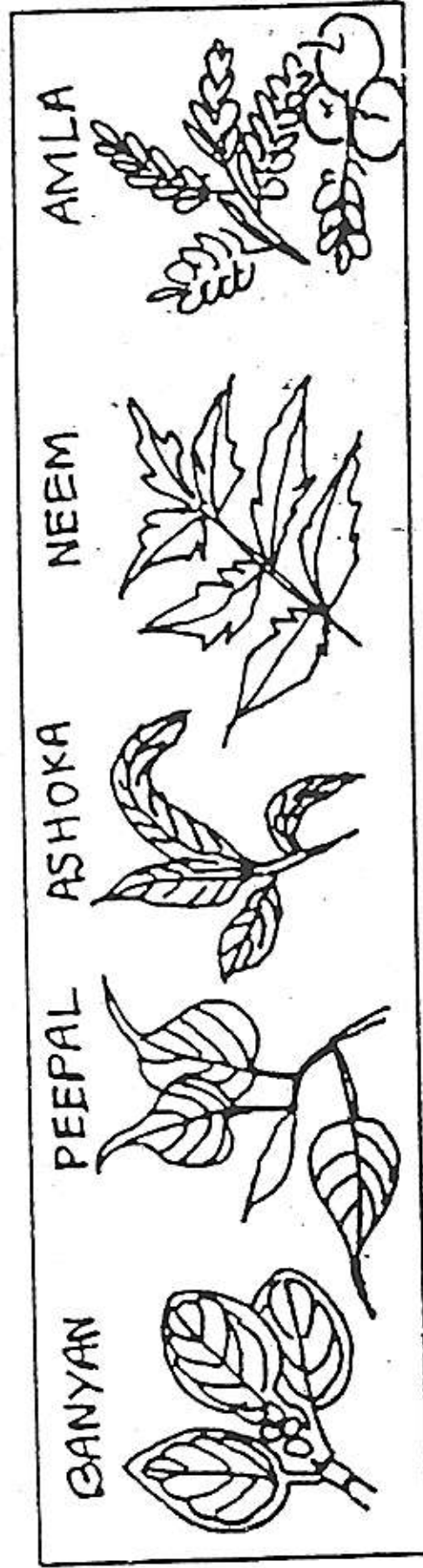
Activity	Method Adopted	Qty. used Ltr.	Method to be adopted	Qty. required Ltr.	Qty. saved Ltr.
Brushing Teeth	Running tap For 5 min.	45	Tumbler or Glass	0.5	44.5
Washing Hands	Running tap For 2 min.	18	Half-filled wash basin	2	16
Shaving	Running tap For 2 min.	18	Shaving mug	0.05	17.95
Shower	Letting Shower run while soaping staying under Shower too long	90	Wet down, tap off, soap up, rinse off	20	70
Flushing	Using old fashioned large capacity cistern	13.5 or more	Dual system short flush liquid waste, Full Flush solid waste	4.5 or 9	4.5 or more
Watering plants	Running hose for 5 minutes	120	Water can	5	115
Washing Floor	Running hose for 5 minutes	200	Map and bucket	18	182
Washing Car	Running hose for 10 minutes	400	Buckets (Two)	18	382

PLEASE USE WATER WITH CARE!

SAVE WATER

WATER IS LIFE

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— ANCHAVAGI —