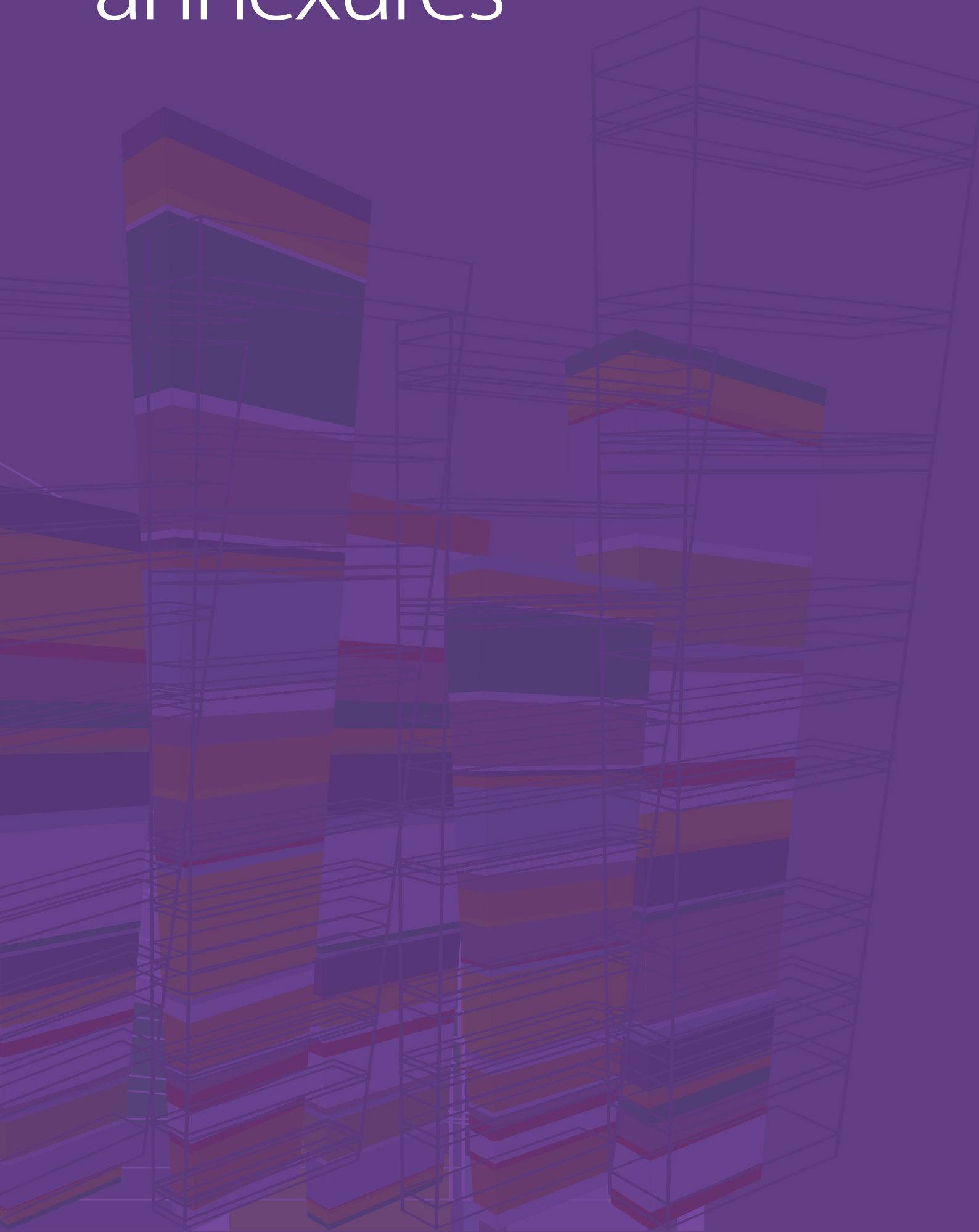# annexures

1 | urban governance in india

history

Municipal governance in India was first introduced in 1687 when the Madras Municipal Corporation was formed, followed by the creation of the Calcutta Municipal Corporation and the Bombay Municipal Corporation in 1726. In 1850, the Improvements in Towns Act was passed by the Government of India that established a system of councillors and gave them administrative authority. Subsequently, Lord Mayo's Resolution of 1870 instituted the system of city municipalities and called for the introduction of an elected president to lead them.

In 1882, Lord Ripon's Resolution of Local Self-Government created the outline and structure of municipal governance in India. It introduced a two-tier system of governance to increase governance efficiency through decentralisation of functions. Based on the 1918 Montague-Chelmsford Report, the Government of India Act 1919 introduced the system of 'Dyarchy', where power-sharing arrangements between the state and the local bodies differed, but conformed to the same organisational pattern.

The District Municipalities Act of 1920 transformed the Municipal Councils into elected bodies and granted them powers to flesh out their own budgets. The Government of India Act 1935 brought local government within the purview of the state or provincial government and granted them enhanced powers[143].

the 74th constitution amendment act, 1992[144]

Prior to 1992, Indian local governments did not have a constitutional status but only a statutory status under state law. Therefore, the governance of urban areas was directly under the control of the state government. This changed with the enactment of the 74th Constitution Amendment Act, 1992. For the first time in the history of urban governance, Urban Local Bodies (ULBs) were granted a constitutional position as the third tier of government.

These bodies were given a constitutional outline for conducting regular elections, powers and financial devolution. The Amendment assigned local bodies with the responsibility of providing basic services.

Urban Local Bodies (ULBs) are classified depending on the population:

- Nagar Panchayats: for 'rurban' areas
- Municipal Councils: for smaller urban areas
- Municipal Corporations: for metropolitan areas

> "In many States local bodies have become weak and ineffective on account of a variety of reasons, including the failure to hold regular elections, prolonged supersessions and inadequate devolution of powers and functions. As a result, Urban Local Bodies are not able to perform effectively as vibrant democratic units of self-government."
>
> *74th Constitution Amendment Act, 1992*

[143]First State Finance Commission Report (1996), Government of Tamil Nadu; Cross, Cecil Merne Putnam (1922), 'The Development of Self-Government in India 1858-1914', University of Chicago Press, Chicago
[144]Also known as the 'Nagarpalika Act'; for full text see http://indiacode.nic.in/coiweb/amend/amend74.htm

urban governance in india

Municipalities were designed to incorporate elected representatives, experts and the Municipal Chairperson. They were awarded a five-year term with re-election scheduled for within 6 months of dilution. Towards this, a state-level Election Commission was established.

The 74th Constitution Amendment Act also sought to institute the Directive Principle of decentralisation in the urban context[145]. ULBs were granted powers and responsibilities in terms of preparation of plans, implementation of development schemes, and administration of taxes. A state-level Finance Commission was established to review the finances of ULBs falling within its purview.

In addition to these three tiers of local government, two other important organisational structures -- the District Planning Committee and the Metropolitan Planning Committee[146] -- have been created under the Constitution. The 74th Constitution Amendment Act also added the 'Twelfth Schedule' to the Constitution. The Schedule (Article 243W) enumerates the functional responsibilities that the municipalities are meant to shoulder.

Today, there are around 3,700 ULBs with 100 municipal corporations, 1,500 municipal councils and 2,100 Nagar Panchayats, besides 56 cantonment boards[147]. While these figures might be indicative of a decentralising policy environment, a cursory survey of contemporary city-level institutions throws light of how much ground is yet to be covered.

A study by a prominent research institute in Delhi assessed the impact of the 74th Constitution Amendment Act in twenty-seven states and one union territory. It concluded that, "…municipalities in India are confronted with a number of problems, such as inefficiency in the conduct of business, ineffective participation by the weaker sections of the population in local governance, weak financial condition, lack of transparency in the planning and implementation of projects, etc., which affect their performance adversely[148]."

divisions of powers - elected, nominated and administrative

The 74th Constitution Amendment Act provides the outline for elected and nominated councillors. The number of elected councillors varies according to the population of an area. Nominated councillors are to be selected by the elected councillors for their expertise in municipal administration. However, they are not granted voting rights.

the municipal corporation - organisational structures

The 74th Constitution Amendment Act does not specify any specific organisational structure for municipal administration in India. This is an issue for state legislation and the structure differs from state to state.

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[145] Article 40 of the Constitution states that, "The State shall take steps to organise village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self government." While the 73rd Constitution Amendment Act addressed decentralisation of governance in rural areas through the Panchayati Raj system, the 74th Constitution Amendment Act applies this principle in the urban areas

[146] The District Planning Committee is meant to consolidate development and growth plans for both rural and urban areas falling in its jurisdiction to create a comprehensive development plan for the district. Similarly, the Metropolitan Planning Committee is meant to create a development plan for the metropolitan area falling in its purview. See Article 234ZD and 243ZE of 74th Constitution Amendment Act

[147] A kind of extra-constitutional body

[148] 'Impact of the Constitution (74th Amendment) Act on the Working of Urban Local Bodies (Volume I)' (2005), National Institute of Urban Affairs, Delhi

The Ministry of Urban Development drafted a Model Municipal Law, 2003 which was circulated to state governments. The rationale for the lack of a centrally administered Municipal Model is that local bodies need to be flexible to respond better to local requirements[149]. As detailed below, two broad models are commonly in use.

commissioner system[150]

mayor

The Mayor in the Municipal Corporation is typically chosen through indirect elections by the councillors among themselves, for a term of one year which is renewable. The Mayor does not have executive authority. Councillors and Committee Councillors act as a committee. The most powerful committee is the standing committee, which functions as the steering board exercising executive, supervisory, financial and personnel powers. It is composed of elected members varying in number between seven and sixteen through a system of proportional representation of councillors.

the executive

The Municipal Commissioner acts as the Chief Executive Officer and head of the executive arm of the Municipal Corporation. All executive powers are vested in the Municipal Commissioner. The powers of the Commissioner are provided by the statute and delegated the Standing Committee.

mayor in council model[151]

This form of city governance is similar to a cabinet government and follows the framework of state and national governments. This model consists of a Mayor and a cabinet, with individual portfolios, chosen from among the elected councillors. The Municipal Commissioner acts as the Principal under the supervision of the Mayor who is the Chief Executive Officer.

governance structure of cities: the reality

The above "model" structure may seem relatively simple, but in reality urban governance is a confusing mix of multiple agencies. Some are new while others are legacies of older regimes; some are answerable to local government while others to state level or even national government.

The following charts have been sourced from the Integrated City Making report (2008) of Urban Age, London School of Economics and Political Science. They are illustrative of how government structures are organised in cities and how transport and spatial planning powers are assigned. They are intentionally designed to give a crude impression of how the basic patterns of responsibilities are organised

[149] Model Municipal Law, 2003
[150] As seen in Mumbai
[151] As seen in Kolkata

within each of these cities, identifying some of the key functions carried out at central, state and local government level. While they offer a useful comparative overview they are not intended to give an accurate account of the detailed systems of accountability which can only be explained comprehensively on a case-by-case basis. We have also shown London to provide an international comparison.
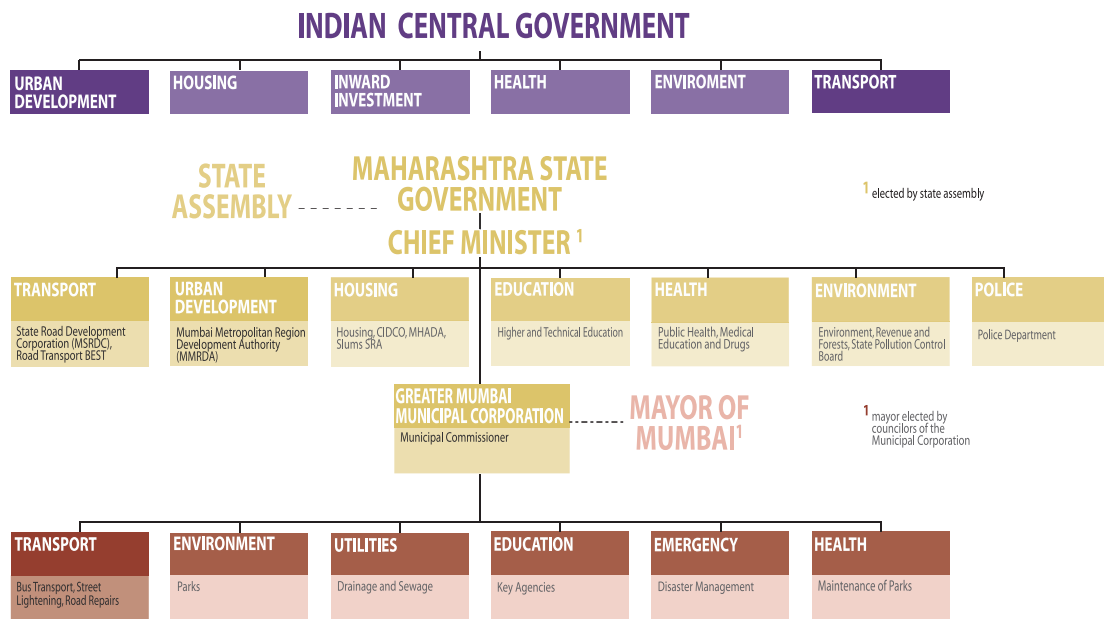

Figure 31: Mumbai's Governance Structure
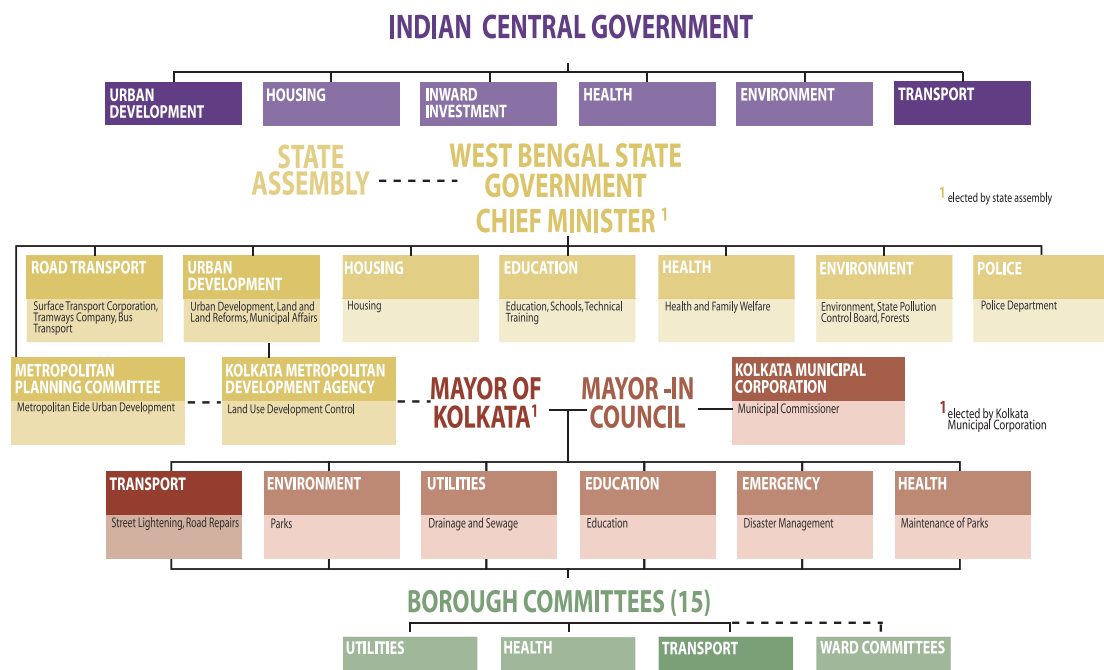
©Urban Age, London School of Economics, www.urban–age.net

Figure 32: Kolkata's Governance Structure

©Urban Age, London School of Economics, www.urban age.net

INDIAN CENTRAL GOVERNMENT
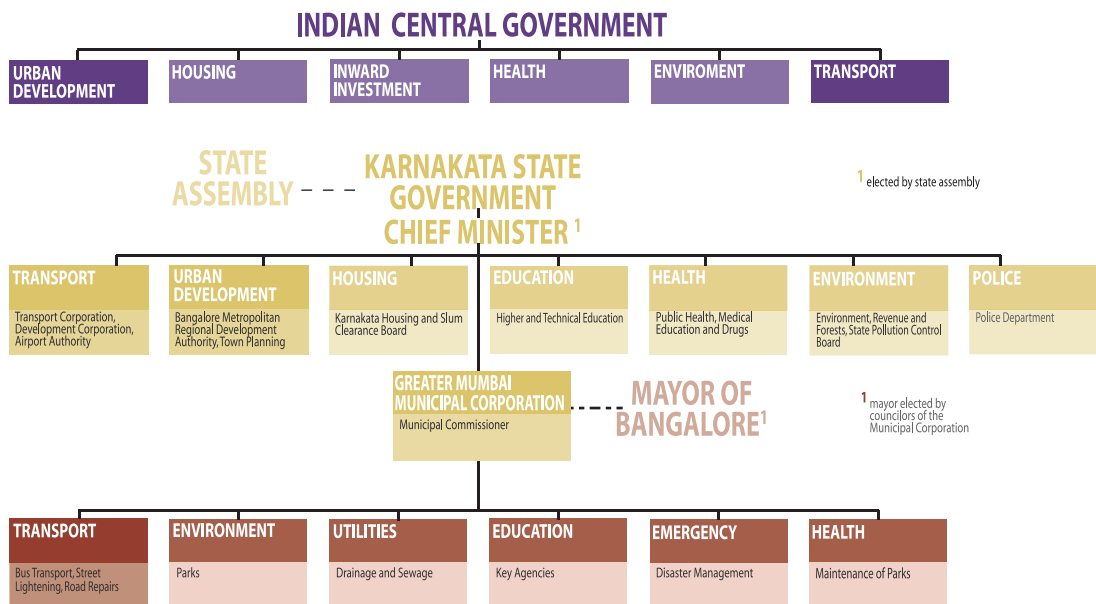
URBAN DEVELOPMENT	HOUSING	INWARD INVESTMENT	HEALTH	ENVIROMENT	TRANSPORT

STATE ASSEMBLY - - - **KARNAKATA STATE GOVERNMENT CHIEF MINISTER** [1]

[1] elected by state assembly

TRANSPORT	URBAN DEVELOPMENT	HOUSING	EDUCATION	HEALTH	ENVIRONMENT	POLICE
Transport Corporation, Development Corporation, Airport Authority	Bangalore Metropolitan Regional Development Authority, Town Planning	Karnakata Housing and Slum Clearance Board	Higher and Technical Education	Public Health, Medical Education and Drugs	Environment, Revenue and Forests, State Pollution Control Board	Police Department

GREATER MUMBAI MUNICIPAL CORPORATION
Municipal Commissioner

- - - **MAYOR OF BANGALORE**[1]

[1] mayor elected by councilors of the Municipal Corporation

TRANSPORT	ENVIRONMENT	UTILITIES	EDUCATION	EMERGENCY	HEALTH
Bus Transport, Street Lightening, Road Repairs	Parks	Drainage and Sewage	Key Agencies	Disaster Management	Maintenance of Parks

Figure 33: Bangalore's Governance Structure

© Urban Age, London School of Economics, www.urban-age.net

UK CENTRAL GOVERNMENT

COMMUNITIES	CULTURE	TRANSPORT	EDUCATION	HEALTH	ENVIRONMENT

MINISTER FOR LONDON

GOVERNMENT OFFICE FOR LONDON

LONDON ASSEMBLY[2]   **MAYOR OF**[1] **LONDON**

[1] direclty elected
[2] elected body with scrutiny role

TRANSPORT	POLICE	FIRE	INWARD INVESTMENT	STRATEGIC PLANNING
Transport for London	Metropolitan Police	London Fire and Emergency Planning Authority	London Development Authority	The London Plan

LONDON BOROUGHS (33)

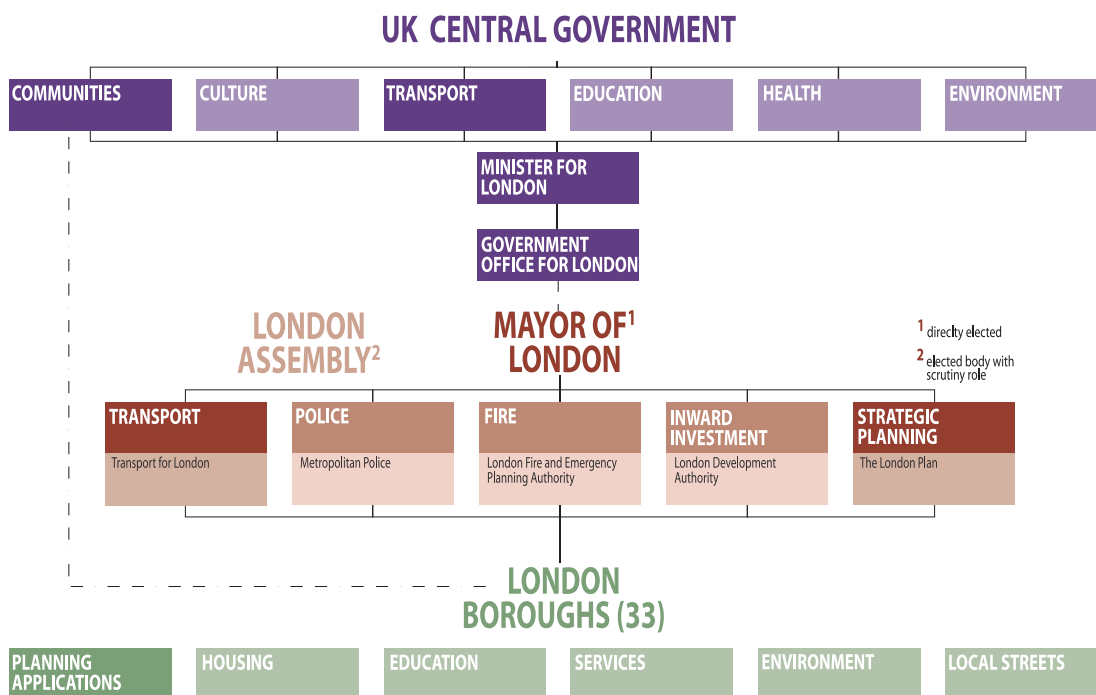| PLANNING APPLICATIONS	HOUSING	EDUCATION	SERVICES	ENVIRONMENT	LOCAL STREETS

Figure 34: London's Governance Structure

© Urban Age, London School of Economics, www.urban-age.net

2 | brief overview of urban planning in india

Most of today's major Indian cities have their roots in pre-Independence India and still rely on colonial era infrastructure. However, there have been some attempts at creating new urban paradigms in the last several decades. In the 1950s, Jawaharlal Nehru commissioned architect Le Corbusier to build a new city that was to be the symbol of the India's modern and progressive outlook. That city was Chandigarh, which Nehru famously declared to be "unfettered by the traditions of the past (and) a symbol of the nation's faith in the future".

The 2nd Five Year Plan 1956-61[152], commenced the creation of town and country planning legislations in many states and initiated institutions to prepare masterplans for important towns. Masterplans for a number of cities were set up and the state capitals of Gandhinagar (Gujarat) and Bhubaneswar (Orissa) were developed in the 3rd Plan, 1961-66[153]. New industrial towns like Durgapur were also built. In all cases, the emphasis was on building housing and offices for the public sector and government.

The need to limit the further growth of population in larger cities was emphasised in the 4th Plan, 1969-74[154]. The idea of restraining the growth in larger cities and encouraging the development of smaller towns was pursued in the 5th Plan, 1974-79[155]. Note that prevailing socialist ethos often affected urban policy preferences and caused long term damage. We saw rent control acts being introduced in many places during the socialist period (for instance, the Delhi Rent Control Act 1958). Similarly, the Urban Land (Ceiling and Regulation) Act, 1976 was enacted to prevent concentration of land holdings in urban areas. All this caused serious distortions in ownership rights and, in turn, in the nature of real estate markets. According to World Bank estimates, rent control regulations have frozen 30 percent of Mumbai's housing stock, leaving it dilapidated because landlords see little point in investing in them. Weak property rights imply that only 10 percent of the housing stock has legal title, so land redevelopment is curtailed.

The 6th Plan, 1980-85[156] set up the Integrated Development of Small and Medium Towns (IDSMT) for towns with population below one hundred thousand for roads, pavements, minor civic works, bus-stands, markets, shopping complexes etc. The eighties and nineties did not see new many new

> "To improve urban infrastructure and provide urban services for the poor, we urgently need urban governance reform. I am happy that this Mission (JNNURM) has been structured with a clear focus on these two important components – urban infrastructure and basic services to the urban poor, with governance reform as an overarching third component."
>
> *Prime Minister Manmohan Singh, JNNURM Inaugural Speech, December 2005*

[152] Chapter 26, '2nd Five Year Plan', Planning Commission of India
[153] Chapter 33, '3rd Five Year Plan', Planning Commission of India
[154] Chapter 19, '4th Five Year Plan', Planning Commission of India
[155] Chapter 5, '5th Five Year Plan', Planning Commission of India
[156] Chapter 23, '6th Five Year Plan', Planning Commission of India

government initiatives on the urban front as attention shifted to opening up the overall economy. The new urban centres were the result of investments by private developers. While construction quality improved with individual developments, the overall urban infrastructure suffered severe strains without public investment. There has been renewed interest in cities in the last few years. Launched in 2005, the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) is the most recent Central Government initiative. The Mission is the largest initiative yet of the Government of India for planned development of Indian cities[157].

jawaharlal nehru national urban renewal mission (jnnurm)

JNNURM was launched in 2005[158]. It "aims at improving the living conditions…through infrastructure development and capacity building of the Urban Local Bodies (ULBs)…through a series of reforms at the state and city level…[159] "

JNNURM is a Central Government programme that seeks to regenerate 63 Indian cities[160] by initiating planned governance reforms and infrastructure development. Planned Central investment of over Rs.500 billion, along with additional State and City level funding is expected to inflate the total programme budget to Rs.1500 billion[161]. This is the single largest government effort in the urban space although it is still too early to discern its impact on India's urbanisation.

CITY DEVELOPMENT PLANS FUNDED UNDER JNNURM[162]				
Agartala	Agra	Ahmedabad	Aizwal	Ajmer-Pushkar
Allahabad	Amritsar Asansol	Bangalore	Bhopal	Bhubaneshwar
Bodhgaya	Chandigarh	Chennai	Cochin	Coimbatore
Dehradun	Delhi	Dhanbad	Faridabad	Gangtok
Guwahati	Haridwar	Hyderabad	Imphal	Indore
Itanagar	Jabalpur	Jaipur	Jammu	Jamshedpur
Kanpur	Kohima	Kolkata	Lucknow	Ludhiana
Madurai	Mathura	Meerut	Mumbai-Thane	Myore
Nagpur	Nainital	Nanded	Nashik	Patna
Panaji	Pondicherry	Pune	Puri	Raipur
Rajkot	Ranchi	Shillong	Shimla	Srinagar
Surat	Thiruvananthapuram	Ujjain	Vadodara	Varanasi
Vijayawada	Vishakhapatnam			

[157]See, www.jnnurm.nic.in

[158]Jawaharlal Nehru National Urban Renewal Mission, 'Overview'

[159]Datta, P.D. and Gupta, S. (2006), 'Community-Oriented City Development Plans', National Institute of Urban Affairs Working Papers, National Institute of Urban Affairs, Delhi

[160]These cities have been selected on the basis of population. Within this pool, there are 7 cities with a population of more than 4 million, 28 cities with a population between 1-4 million and 28 cities with population less than 1 million.

[161]http://www.ccsindia.org/jnnurm.asp; IDCL (http://www.ilfsindia.com/downloads/bus_concept/JNNURM.pdf)

[162]http://jnnurm.nic.in/nurmudweb/missioncities.htm

brief overview of urban planning in india

The JNNURM programme is divided into two sub-missions; the 'Sub-mission for Urban Infrastructure and Governance' and the 'Sub-mission for Basic Services to the Urban Poor'. While the Ministry of Urban Development implements the first, the Ministry of Urban Employment and Poverty Alleviation implements the second.

The City Development Plan (CDP)[163] is the mainstay of the JNNURM reforms. ULBs are expected to develop the CDP through a participatory process involving key stakeholders in the planning stages. The resultant CDP is envisaged as a responsive and contextual document addressing local issues. Detailed Project Reports (DPRs) submitted by city authorities detail project progress and fund utilisation by them.

This framework is supplemented by a Memorandum of Agreement (MoA) signed between the Centre, State and the ULB. After development and approval of the CDP and the DPR, the ULB signs a MoA with the Centre and the State government committing itself to the project and setting out a timeline for its completion[164]. Two other Central Government initiatives supplement JNNURM; the Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) and the Integrated Housing & Slum Development Programme (IHSDP). These schemes differ from JNNURM in respect of establishing CDP as a planning tool. While under the JNNURM, configuration of a CDP is mandatory, under the UIDSSMT and the IHSDP, the CDP mechanism is absent.

SECTORS ELIGIBLE FOR JNNURM FUNDING[165]		
Urban Renewal	Water Supply Management	Sewerage and Solid Waste Management
Drain Construction	Urban Transport	Development of Parking Lots (PPP-basis only)
Heritage Conservation	Soil Protection and Renewal	Preservation of Water Bodies
Slum Development	Slum Rehabilitation	Service Delivery to Urban Poor
Housing Projects for Urban Poor	Street Lighting	Civic Amenities (including Operation and Maintenance)

[163] According to the JNNURM Toolkit No.2 a "City Development Plan (CDP) is an action plan for equitable growth in a city, developed and sustained through public participation to improve the quality of life for all citizens. A City Development Plan (CDP) is both a perspective and a vision for the future development of a city. It presents the current stage of the city's development — where is the city now? It sets out the directions of change — where does the city want to go? It identifies the thrust areas —— what does the city need to address on a priority basis? It also suggests alternative routes, strategies, and interventions for bringing about the change — what interventions should be made in order to attain the vision? It provides a framework and vision within which projects need to be identified and implemented. It establishes a logical and consistent framework for evaluation of investment decisions."

[164] Ibid.

[165] Jawaharlal Nehru National Urban Renewal Mission, 'Overview'

3 international collaboration: bridging the gap

The urbanisation of India opens up enormous potential in sectors such as green technology, construction of green and efficient buildings, effective water and waste management and transport solutions, among others. This section identifies the areas for possible collaboration and opportunities for co-development, wherein city governments, institutions and companies can collaborate along with the role that foreign governments, institutions and companies can play to support the drive for sustainable urbanisation in India.

1. partnerships between institutions/municipal governments

Bangalore and San Francisco signed a Memorandum of Understanding[166] (MoU) under the Sister Cities Programme in October 2008 to initiate a direct, international collaboration between the two cities. Collaborative plans in areas of economy and trade, education, health, traffic and transportation, social and cultural ties, tourism, and exchange of environmental knowledge, legal support and intellectual property will be devised under this agreement. Historically, however, it is not easy for international governments to work directly with cities in India[167]. There are three layers of governance in India i.e. the Central, State and Local Governments, and the Central Government had historically monopolised international linkages. With globalisation and liberalisation, things are slowly changing.

In April 2008, three other Indian cities formalised city-to-city partnerships with three European cities. City of La Rochelle in France and Ahmedabad agreed to cooperate in the area of heritage management and energy conservation, while City of Halle in Germany offered to host management students from Ahmedabad and Indore and Valladolid, Spain, offered to explore partnerships with Ahmedabad for heritage management and with Pune in the automobile sector. It is too early to tell if these partnerships will bear fruit.

Of course, collaborations are also possible in the non-government space as well. I-CE Interface for cycling expertise is an international non-governmental organisation created in 1996. I-CE aims at the promotion of cycle-inclusive sustainable integrated urban and transport planning, through transfer and development of cycling expertise. The initiative is supported financially by The Netherlands' Government. It supports 30 to 50 partner cities in Africa, Latin America and Asia through the Bicycle Partnership Programme (BPP) in their ambition towards cycle-inclusive urban and transport planning. In India ICE has been promoting its programme through three formats which are:

a. Capacity-building of organisations promoting the interest of cycling through research and training, development of concepts and support of initiatives to create a market for low-cost bicycles, influencing policies to promote cycling and giving technical expertise to engineers, designers and city planners for cycling infrastructure planning.

b. Funding local NGOs working on cycling programmes.

c. Funding and providing technical knowledge to PhD students working on low cost mobility studies.

I-CE has a presence in Pune, Nanded and Delhi at the moment.

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[166]See www.sfbangalore.org for more info

[167]Kulwant Singh, Association of Municipalities and Development Authorities (2008). The Association of Municipalities and Development Authorities (AMDA), established in 1983, is an Association of 63 Municipalities and Development Authorities in the country. The Association, is a knowledge sharing platform and addresses the issues pertaining to interface between the state, municipal bodies and urban development authorities in the realm of urbanisation, urban development and urban governance

2. education, training & knowledge exchange

One of the biggest constraints for India is that it lacks skilled manpower in areas such as waste management, renewable energy, urban planning and so on. For instance, India suffers from a severe shortage of trained urban planners[168]. In India there is 1 planner for every 100,000 people, while in the USA there is 1 planner for every 5000 people and according to global best practice Bangalore alone needs 5,000 additional planners. The tertiary education system is just not equipped to supply this need; India has just eleven urban planning programmes across the country. Clearly, there can be large gains from bringing in international quality education and training. Unfortunately, this is related to a larger and politically contentious area of higher education reform. This is not the place to debate the issue of liberalisation in higher education in India, but we do feel that there is an opportunity for the creation of platforms that can play a role in this space by bringing together key stakeholders. The newly established "Sustainable Planet Institute" is trying to fill this gap (for details see: www.sustainableplanetinstitute.org).

3. business partnerships and investments

There are clearly investment opportunities in India in the areas of transportation infrastructure, waste management, water treatment and so on.

In June 2008, Singapore's water agency PUB signed a MoU with Maharashtra Jeevan Pradhikaran (the Maharashtra Water Supply and Sanitation Board) to collaborate on projects that minimise water wastage and improve water infrastructure in Maharashtra's cities and towns. The MoU will facilitate collaboration between PUB and MJP, as well as promote participation by Singapore-based companies in urban water management in the state, including major cities such as Mumbai and Pune. Areas of cooperation will include leak detection and reduction in unaccounted-for water; water and wastewater treatment and recycling; emerging technologies and best practices in water reuse; the management of urban runoff; management of water supply and demand; and institutional capacity building. One of the first projects identified under the MoU will transform the intermittent water supply in the town of Ambernath, near Mumbai. Ambernath's population of 270,000 has water for only three to four hours a day, and there is a high level (21 per cent) of unaccounted-for water (UFW). The plan is to introduce a round-the-clock water supply and reduce UFW, with the PUB sharing its capabilities in integrated water resource and demand management, and the secrets to Singapore's 5 per cent UFW rate, which is one of the world's lowest. Singapore-based companies such as pipeline rehabilitation specialists Teacly (S) Pte Ltd will work with MJP and Indian partner companies on MoU projects. PUB's wholly-owned subsidiary, PUB Consultants Pte Ltd, will act as technical consultants.

Another example is the Clinton Foundation which is helping set up a 5-gigawatt solar project that could cost almost USD 5 billion. The project, coined the Integrated Solar City, is supposed to be built in the state of Gujarat in western India in collaboration with the state government. It will both provide solar power and manufacture solar materials. The Clinton Foundation is also in talks with governments of Andhra Pradesh and Rajasthan for setting up solar power projects.

[168]Ramanathan, S. (2007), 'Where are the Urban Planners?', www.Janaagraha.org

4 smart growth versus sprawl[169]

	SMART GROWTH	SPRAWL
EMPHASIS	Accessibility-to goods, services and activities	Mobility-physical movements, particularly by car
DENSITY	Higher density, clustered activities	Lower density, dispersed activities
GROWTH PATTERN	Infill development	Urban periphery (greenfield) development
LAND USE MIX	Mixed	Single use, segregated
PUBLIC SERVICES	Local, distributed, smaller, walking access	Regional, consolidated, larger, requiring car access
TRANSPORT	Multimodal transportation and land-use patterns that support walking, cycling, and public transportation	Car-oriented, poorly suited to walking, cycling, and public transportation
CONNECTIVITY	Highly connected roads, pavements and paths allowing more direct travel by motorised and non-motorised transport modes	Hierarchical road network with many unconnected roads and walkways, and barriers to non-motorised transport
STREET DESIGN	To accommodate a range of activities, with street calming	Designed to maximize vehicle throughput
PLANNING PROCESS	Planed and coordinated between jurisdictions and stakeholders	Either unplanned/little coordination, or planned (e.g. US)
PUBLIC SPACE	Emphasis on streetspace, pedestrian areas, public parks and public facilities	Emphasis on private realm-of shopping malls, gated communities, private clubs

[169]Asian Development Bank (2007), 'Environment and Transport Background Paper', Managing Asian Cities Study, Manila

5 analysis of CDPs of 20 cities vis-à-vis urban form and walkability

CITY	URBAN FORM/ DENSIFICATION	PEDESTRIANISATION
DELHI	Re-densification of the zones with low density and high land value has been proposed. As per the provision of MPD-2001, the gross density of residential areas should be 350 PPH or 78 DU/ha with FAR of 33%. Low Density areas as identified include: | Existing Area	Gross Density in PPH	Ground Coverage	FAR
---	---	---	---
Lodhi Colony	222	18	37
RK Puram	190	17	35
Moti Bagh	145	15	31
Laxmibai Nagar	225	19	38 | (See below for re-densification plan for Delhi)	• The Karol Bagh area - The grid iron pattern is to be treated as an asset to regulate and pedestrianise traffic movement. • "Prepare Special Integrated schemes for movement in CP and Old City Area strategy" includes pedestrianisation of inner circle inConnaught Place including parking below inner circle and pedestrianisation (partial) of Chandni Chowk Area with heritage considerations. • Transport strategy includes equitable use of space on roads, and priority to pedestrians. A total of Rs.1.25 billion has been allocated for strengthening and improvement of footpaths along major arterial roads, construction of foot over bridges/subways at ten critical locations and modernisation of street lighting.
CHENNAI	• Plan to densify the city by 35% has been proposed in the CDP. • A spatial strategy to permit high density development along transport corridors and in peri-urban areas viz., higher FSI within the influence area of the MRTS Corridor, Outer Ring Road.	• An amount of Rs.1.02 billion has been allocated to build pedestrian subways
KOLKATA	• Plan to densify the city by 35% has been proposed in the CDP. • A spatial strategy to permit high density development along transport corridors and in peri-urban areas viz., higher FSI within the influence area of the MRTS Corridor, Outer Ring Road.	No mention.
MUMBAI	No mention.	No mention.
BANGALORE	No mention.	• The city plans to develop pathways and subways at railway gates for pedestrians. • 100 km of restoration of footpaths- Improvement of old/worn out footpaths and restoration of footpaths where they do not exist and removal and relocating utilities that are present on footpath to provide right of way to pedestrians has been planned. • Raised Crosswalks/Pelican Signals have been planned for 50 locations and Pedestrian Walkovers for 10 locations. • 10,000 m of Barricading of footpaths has been planned. • Pedestrian only zones to be introduced.

CITY	URBAN FORM/ DENSIFICATION	PEDESTRIANISATION
INDORE	No mention.	• Improvement of pedestrian facilities is part of the traffic management strategy.
PUNE	The Slum Redevelopment Authority allows FSI of 3 to promote high density development in slum areas as against the normal FSI of 1. Action plan includes revitalisation of core area by promoting high density and high rise provision in the old city limits. Peri–urban city corridors will be identified for redensification and integration with transport networks. High density housing will be encouraged. For every 1 FSI an extra 0.4 FSI is given to the builder.	• Improvement of pedestrian facilities has been proposed.
AHMEDABAD	As per the CDP in terms of spatial expansion unlike Bangalore and Hyderabad, the city during the past ten-year period has expanded in a contiguous manner and remained compact. (See below for Population density map of Ahmedabad and comparison of Ahmedabad land use with Bangalore and Hyderabad)	No mention.
KANPUR	No mention. The core city is already very dense.	Plans to improve pedestrian facilities have been proposed.
VADODRA	No mention.	No mention.
NAGPUR	The density of Nagpur is considered very low as compared to other cities. Plans to carry out detailed studies would be carried out to identify corridors where densification is possible. Schemes to revise FSI norms to allow high density development have been proposed.	No mention.
VARANASI	The density in inner city is considered abnormally high leading to unhygienic conditions.	No mention.
CHANDIGARH	No mention.	No mention.
GUWAHATI	No mention. Unplanned urbanisitation has led to increase in density and congestion. The city thus plans to develop a decongestion programme	No mention.

analysis of CDPs of 20 cities vis-à-vis urban form and walkability

CITY	URBAN FORM/ DENSIFICATION	PEDESTRIANISATION
JAIPUR	High density within the walled city is considered a weakness. The government sees the decline in density in the walled city since 1991 as a positive phenomena. As per the CDP, densification of areas in the city might lead to high levels of burden on the infrastructure. Bye-laws have been proposed to decrease the density of the walled city. However redensification of low-density areas on the periphery of the city such as Ashok Nagar, Bani Park, Gandhi Nagar is being planned.	No mention.
ALLAHABAD	No mention.	Improvement of signals for the benefit of pedestrians and creating a good environment for pedestrian movement has been planned.
UJJAIN	No plans for further densification.	Certain areas in the city like the Chowk area have been planned to be completely pedestrianised. Developing better pedestrian facilities has been planned.
MEERUT	The development authority and other agencies in Meerut are trying to reduce the population density within the inner city area. As per the CDP, high population density and increased economic activities in the inner city areas have resulted in excessive stress on existing infrastructure.	Improving pedestrian facilities has been planned.
COIMBATORE	No mention.	Pedestrian subways, crosswalks and 1.5m - wide footpaths have been proposed along the major roads where heavy pedestrian movements are observed.

6 population density chart of cities

The following charts have been sourced from *Integrated City Making report (2008) of Urban Age, London School of Economics and Political Science.* They illustrate the land use pattern in cities in terms of sprawl and compactness.
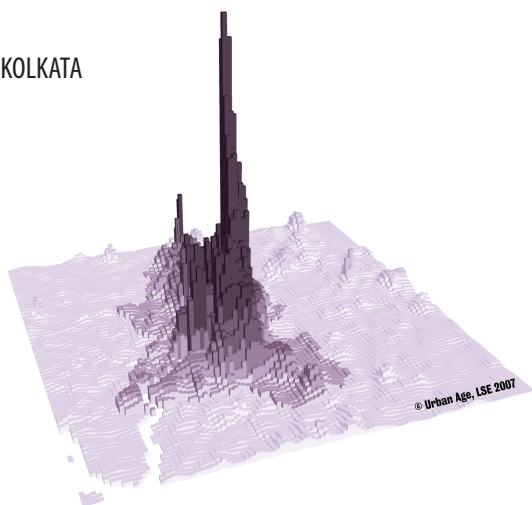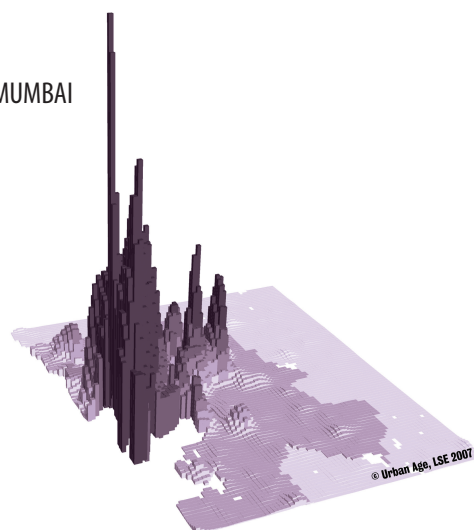
DELHI

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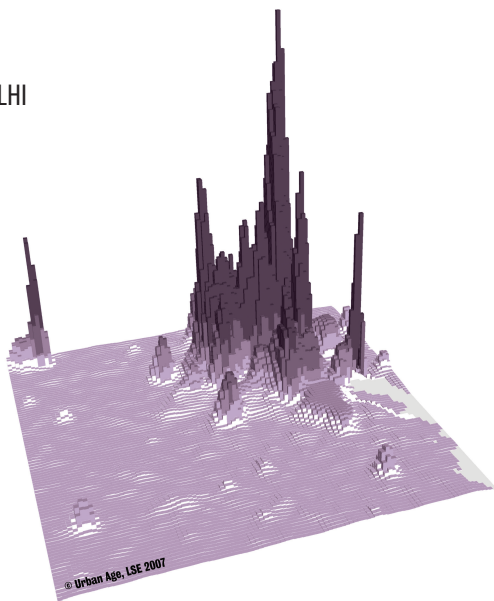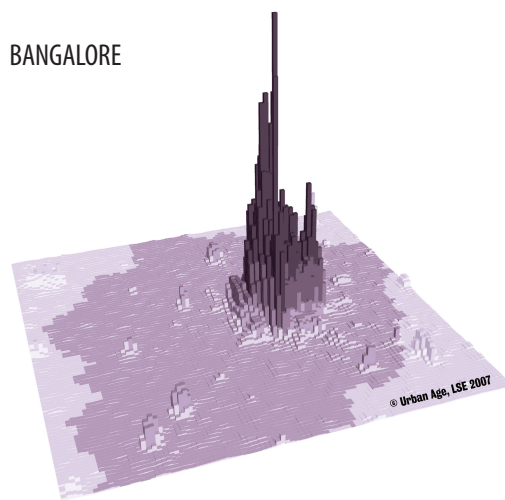
7 on two legs and a prayer[170]

Automobiles overwhelm Indian urban space: physical and imagined. Walking does not figure in the Great Indian Urban Plan. Pedestrians face grave risks. But automobiled city managers ignore a simple fact: walking is the basis of urban mobility. Even in car-crazy Delhi, one in every three trips is only on foot.

Stuck in traffic on an old scooter, Amarnath Tewary, journalist in Patna, was getting late for an appointment. After progressing 100 metres in 20 minutes, a question occurred: why not walk? Two legs could speed up things on the road. And then there was the inviting prospect of shedding a few kilos around his waistline. He discussed it with his wife and daughter.

Tewary described how his first walk-to-work day began: it featured a recently purchased pair of Nike joggers, an absent scooter, and a chartbuster from the Mumbai film factories that whistled through his lips. An estimated 25 minutes would transport him across the four-km daily commute to his office at Fraser Road. Four minutes into his new routine, he hit the marketplace and saw things he had not noticed from above the safety of two wheels."There just wasn't the space to walk, no pavements," he said. He discovered the difficulty of walking past someone without body contact. "I should have bought a horn instead of the Nike shoes," he said.

The horn, though, would not have helped negotiate a bull that he skirted, but that meant his leg slipped into sludge heaped beside an open manhole. Before long, a bicyclist expectorated betel juice right on to his trouser legs and shoes. Next on the obstacle course was a series of puddles. Tewary rolled up his trousers and attempted a jump. Without so much as a splash, he landed on his athletic feat. Before he could feel too happy, a motorcycle sped past, depositing the contents of the puddle on to his trousers. He had had enough of walking. He hired a rickshaw on his way back.

how many people walk?

Hiring a rickshaw or riding a scooter are not options available to Annapurnabai. Her 60 years saw her leave farm labour to become a domestic help in Nagpur. Now, she does not work-not because she is too old to work but because traffic makes it impossible to walk. She used to walk between 10 km and 14 km every day."In those days, there were wide roadside spaces and shady green trees. One could walk barefoot," said she, claiming she is physically fit to walk the same distances but cannot cope with the traffic and the heat-the trees are gone to create more space for motorised traffic.

Indian cities have millions of stories like Tewary's and Annapurnabai's. But it isn't easy to put a number to these stories. Geetam Tiwari, professor at Indian Institute of Technology in Delhi, tried to obtain data on walking. She could not find any from before 1994. For motorised vehicles in Delhi, data is available since the 1950s. "This shows walking has not been a priority in the planning of cities and transport infrastructure."

A 2008 study of 30 cities showed 16-57 per cent of all trips involve no vehicles at all. Smaller cities and hill towns, where walking commands a greater share of trips, figured at the higher end of this classification. Bigger cities, which have some semblance of pedestrian infrastructure unlike the smaller cities, have fewer people relying only on walking. The study by US consultancy Wilbur Smith Associates assessed footpaths and overall infrastructure, including pedestrians' ratings of the

[170]Sen, J., Seth, B.L. and Jamwal, N. (2009), 'On Two Legs and a Prayer', Down to Earth, Society for Environmental Communications

facilities. The Union Ministry of Urban Development had commissioned the study to draft a transport strategy.

The study indexed cities for walkability. The national average was 0.52. Chandigarh came on top with 0.91; cities such as London score 1.5 to 1.7.

measuring walkability indian cities ranked on scale of 4

The survey showed 21 per cent of all trips in Delhi were only on foot. This share was 34 per cent in another 2008 survey, this one by RITES Ltd, a government-owned consultancy. The figures vary depending on the survey, but there is no other way to estimate the unestimated. The two studies are not comparable, said Vinoba Sunder Singh of Wilbur Smith. "There are limitations to our study. While people's perception got 50 per cent weightage to the score, mere presence of footpath was accounted," said Singh, adding they did not study its quality.

Mumbai has more walkers than Delhi-43 per cent, according to a 2005 study by the World Bank-about four times the number of people using private vehicles. Another survey from 2005-08, by the Mumbai Metropolitan Region Development Authority, estimated the number at 52 per cent. In Ahmedabad, cycling and walking constitute 54 per cent of all trips, said a 2005 report of the Centre for Environmental Planning and Technology.

Walkers outnumber those using vehicles in Indian cities. Even in car-crazed Delhi, the percentage of walking-only trips has remained high over time, said Yash Pal Sachdeva of RITES; it was 32 per cent in 1994 and 33 per cent in 2001.

The walk-only trips in cities would be higher if public transport trips were included in estimates; each public transport user is also a walker at least four times a day. The Wilbur Smith report showed Kolkata ranked low in terms of pedestrian share in trips per day-19 per cent, excluding trips linking public transport. But the city has the highest public transport share: 54 per cent.

So, people walk. Was Tewary in Patna too hasty in reverting to his scooter after a one-day trial? A close look at roads in Indian cities shows how the pedestrians never seem like a constituency to city managers. The employment-and safety-of Annapurnabai in Nagpur is not a real concern, though the old woman and her need for employment is very real, as is her fear of roads.

insurance for walkers?

Diwakar Mohani is 80 and an inveterate cyclist. "The roads of Nagpur are better than ever before. But traffic has become unruly and law enforcement has not kept pace. The bicycle has become a vulnerable mode. My family is always nervous about me moving around on one."

Unlike Mohani, Subrata Sen, writer and social activist in Nagpur, has stopped walking. "On improved

roads, vehicles speed at no less than 60 km per hour. Because of poor traffic regulation, people jaywalk. It is dangerous," he said.

The number of people killed in road accidents in India has increased about 8 per cent each year for the past decade. Pedestrians account for 60 per cent-more than 80,000-of all fatalities in urban areas, revealed a joint report by researchers from the US University of Michigan and IIT, Delhi.

Ramchandra Nayak knows. The 75-year-old from Bhubaneswar survived a road accident six months ago. "A car hit me during my morning walk. Since there are no footpaths, I had little choice but to walk on the road," said he. He has stopped going for a walk since.

During 1970-2005, the number of motor vehicles registered increased 50 times. While the road network grew less than three-fold, accidents increased four-fold. Lack of footpaths, cycle tracks and unchecked speeding were to blame.

India's National Urban Transport Policy acknowledged the risk: "Use of cheaper non-motorised modes like cycling and walking has become increasingly risky, since these modes have to share the same right of way with motorised modes."

From policy to urban plans is a short journey. Delhi's Master Plan 2021 desires a pedestrian friendly city, major work centres with large numbers of pedestrian networks.

The master plan talks of upgrading public transport to international standards for the 2010 Commonwealth Games. To optimise the carrying capacity for each mode, transport projects must be integrated, said Pradeep Sachdeva, an architect in Delhi who designs public spaces in Indian cities.

The Public Works Department in Delhi has commissioned a pilot project to improve walkability in select areas. The project is to design and develop about 25 km around four stadium areas and some arterial roads. The concept design along side footpaths includes lanes for non-motorised transport and auto rickshaw stands, he said.

It is essential to connect Delhi's metro stations with pedestrian networks, said Tripta Khurana, chief architect, Delhi Metro Rail Corporation. "We plan jointly with the Delhi Transport Corporation to establish feeder bus services. For pedestrians, urban local bodies must ensure their needs are fulfilled." A senior official of the New Delhi Municipal Corporation admitted that more needs to be done.

The Centre for Science and Environment, NGO in Delhi, surveyed pedestrians on Delhi walkways to understand their convenience, security, safety and quality of services. No location made the top grade. Of all the sites assessed, the dedicated pedestrian path in the pilot bus rapid transit corridor (between Ambedkar Nagar and Chirag Delhi) scored the highest.

"Little attention is given to pedestrians outside the corridor," said Sachdeva. The captive pedestrian, who cannot afford alternative modes of transport, is the biggest loser.

vehicles, vehicles, vehicles

The reasons for congested cities are well known. Planners focus on the movement of vehicles, not people. Governments invest large sums in roads and elevated roadways to provide mobility to a minority: vehicle owners. Yet traffic speed and road availability per vehicle have reduced, despite road widening and flyovers.

Faulty designs and urban land use policies are fast razing the walking environment in India. The widening of roads alongside elevated routes and flyovers are a constant hindrance on pedestrian routes. The direct course of access for pedestrians is replaced by long-drawn routes. The vehicle lobby pushes pedestrians to subways and foot overbridges. To save time and effort pedestrians put themselves in harm's way.

Ill-planned motorisation kills one person every six minutes on average. This has pushed the Union Ministry of Shipping, Highways and Road Transport to draft a National Road Safety Policy. It talks of traffic education and social and economic implications of road accidents. It says the government will provide financial assistance to states and local bodies to improve the quality of investigation of crash incidents for data collection, transmission and analyses. The Indian Road Congress, premier technical body of highway engineers set up in 1934, has design guidelines for roads and pedestrian pathways. These ask for a minimum footpath width of 1.5m to 4m. But no urban body is legally bound to maintain a dedicated space for pedestrians.

not binding by law

In a 2008 consultation paper, the Law Commission of India observed that in the absence of a Central legislation, it is left to the states to legislate on road safety. The Motor Vehicles Act, 1988, is supposedly a deterrent to rash and negligent driving. The Rules of Road Regulation, 1989, do mention pedestrians' right of way at unregulated crossings.

But little of all this means anything on the road. "I know it's wrong but cars never stop for pedestrians," said Rohit Pillai, a Delhi motorist. "People either honk or abuse if one attempts to do so." A Down To Earth correspondent caught up with Chandrasekhar, in Mumbai, as he was waiting to cross the road at the Marine Drive. "One needs to sprint, even on a zebra crossing. The traffic signal turns green for such a short while that barely half the road can be crossed.

The Marine Drive is a three-km stretch along the Arabian Sea. It has a promenade that lends itself to pedestrians. But the footpaths are too high, especially for the elderly. Other parts of the city are devoid of pedestrian facilities. "There are no footpaths in Mumbai's suburbs," said Pankaj Joshi, architect and executive director of the Urban Design Research Institute in Mumbai. The Mumbai Metropolitan Region Development Authority is busy implementing infrastructure projects such as the metro, monorail, sea links, expressways and flyovers. But footpaths are not on its agenda. "Business districts have been developed for only those who have cars. Even though footpaths have been provided in some places, these do not connect or integrate with other parts of the city," said Joshi.

vehicles, vehicles, vehicles

Urban planners and architects claimed the state government was working against its own data, which showed that walking accounts for about 55 per cent average daily trips. "In its right sense, any planning agency should cash in on this figure and strengthen infrastructure for walkers," said Ashok Datar, a transport expert working with the non-profit Mumbai Environmental Social Network. "But it looks like the development authority wants people to use their cars. It has now started constructing skywalks for pedestrians. The skywalks resemble caterpillars, are ugly, and do not solve the problem. These are required in some areas but should not be replicated all over."

Off the road, on to a skywalk elevated walkways are meant to disperse commuters from congested areas like bus stations. The development authority has planned 50 skywalks in the Mumbai Metropolitan Region at an estimated cost of Rs 6 billion. One such pilot skywalk, between Bandra (E) station and Bandra-Kurla Complex, is operational since June 2008. It is 1.3 km long and four metres wide.

"The skywalk was constructed for a peak hour capacity of 5,500 commuters but less than 100 people use it. The authority spent about Rs 130 million on it," said Datar. He added there is a mismatch between pedestrian needs and what the state has to offer.

Sudhir Badami, transport consultant in Mumbai, said mindless sprouting of skywalks proved the government did not want to get footpaths in order. Badami, who studied at IIT Mumbai in the 1970s, lives in Babulnath Marg in south Mumbai." Footpaths in Mumbai were in a much better condition earlier. I would walk back from the Grant Road station. But now I am forced to take a taxi because the footpath is a mess and nonexistent."

non- negotiable right

Everyone has a right to space on the road, said Faizan Jawed, an architect-cum-activist in Mumbai. "Why should they be left for private cars, and pedestrians be pushed on to skywalks? Pedestrians must be provided space on the road. This is non-negotiable." Non-profits have launched a campaign against skywalks in areas that have footpaths. Jawed also campaigns for dedicated cycle tracks in the city." Cars cannot solve the transportation and congestion problems. They are the problem. We must pressure our government to provide good footpaths and dedicated cycle tracks," he said.

Neera Punj, convener of a people's group called CitiSpace, alleged the state government was ready to push only those transportation projects that involved millions of rupees and private companies. "The footpath in front of our society used to have hundreds of hawkers," said Punj who lives in Lotus Court near Churchgate station in south Mumbai. "In 2001, our residents' association decided to adopt the pavement and maintain it. It entailed a lot of administrative hassles but we managed to remove the hawkers. Our association spends Rs 40,000 per month for the pavement's protection and upkeep." But not all associations are rich enough to spend that kind of money. "Why should residents pay when they are paying taxes?" asked Punj.

As a policy, agreed a few town planners and architects Down To Earth spoke to, cities need to ensure there is an adequate network to help pedestrians directly travel to destinations. But the urban habitat model is changing rapidly. With segregation of land use supporting low-density development, commuting distances have steadily increased. The burgeoning Indian middle class is aspiring and

looking at motor vehicles as an indispensable extension of itself.

Indian cities, unlike the ones in the US, have dense urban cores that are highly conducive for walking. But the share of walking trips is fast disappearing with the modern urban expansion being more car and two-wheeler oriented. "A disturbing trend revealed in the 2008 survey is the share of bus trips has slipped drastically," said Sachdeva. Delhi faces the danger of losing its walkability heritage, he added. The percentage of bus trips have fallen from 60 per cent in 2001 to 41 per cent in 2008, while over the same period car trips have increased 3 per cent to 13.

RITES projects if Delhi implements all the public transport schemes as planned today, there would still be a shortfall of nine million trips. The projections are based on estimates that the population of Delhi between 2001 and 2021 shall grow from 14 million to 23 million. During this period vehicular trips are estimated to grow 131 per cent.

walkability is no rocket science

Urban planners say it is easier to turn Mumbai into a pedestrian-friendly city provided the planning authorities will it. It will also be cost-effective compared to other transport projects such as the Rs.200 billion metro rail project.

Joshi of the Urban Design Research Institute said there is a need for citywide study to identify bottlenecks for pedestrians first and then take simple measures such as painting zebra crossings, reprogramming signals or increasing the duration of traffic signals so that people like Chandrasekhar don't have to sprint to cross the road. These measures can go a long way in easing pedestrian problems, he said. The institute has launched a year-long project to study how Mumbai can be made more walkable. Initial findings show how the system discourages pedestrians.

Two traffic signals in front of the Chhatrapati Shivaji Terminus, one of the busiest stations in Mumbai, illustrate the problem. "Both these traffic signals are programmed in a manner that pedestrians can never cross the road," said Kirti Maknija, architect with the institute. "The divider between the road is so narrow that barely one person can stand on it. There are many more traffic signals like these which discourage pedestrian movement."

a public space called the road

Architects are trying to incorporate hawkers in the city's plan. An architecture institute in Juhu in Mumbai is conducting one such study. "Our study area has a mixed population, ranging from film personalities to two urban villages, fishing villages and slums," said Benita Menezes, lecturer at the design cell of the Kamla Raheja Vidyanidhi Institute for Architecture (KRVIA). "We realised that the Irla nala flows through these areas and we could use it." The institute, along with P K Das and Associates, an architecture firm, and Juhu residents conducted a study in 2008. Commonly known as Vision Juhu, the aim of the study was to integrate various public spaces in Juhu and make the areas more pedestrian friendly.

a public space called the road

The Institute has proposed a six-metre-wide stretch on both sides of the Irla nala should be protected and developed in a way that the water flow is enhanced and the developed area used to relocate hawkers. The developed area would also have walkways and be connected to other open areas of Juhu, allowing pedestrian movement.

Then there are three metro stations within Juhu and all three open on the main roads. "Can you picture the chaos on roads when commuters from these stations come out? We have proposed realignment of these stations. If that is done, then burst points for metro stations would be open spaces. From there people can use footpaths or the developed sidewalks of Irla nala," said Menezes.

There are several nalas like Irla, and small rivers in Mumbai, that can be developed along the same lines. But Menezes is of the opinion that one big plan for the city won't work. The city needs a multi-scalar approach in which neighbourhoods prepare their own plans and see how best their area can become walkable, she added.

Citizens are becoming assertive. Several cities now have campaigns to push the pedestrian agenda. Hyderabad's Right To Walk campaign has led to the creation of a pedestrian safety cell. Last year, a Mumbai group headed by Krishnaraj Rao formed Sahasi Padyatri (meaning brave pedestrians), an informal group of residents demanding easy and safe footpaths. In March 2008, the group went around Mumbai suburbs and painted lanes on the road and declared them "only for pedestrians".

"We organised many such events. We expected people in cars to get angry, but their response, surprisingly, was positive. I think people saw the point," said Rao. He said foot overbridges were coming up in some areas but a lot more needed to be done.

Architects demand that the comprehensive transport survey 2005-08 be made public. "We have tried our level best, even through Right To Information application, but haven't been able to lay our hands on the survey. I feel the Mumbai Metropolitan Region Development Authority fears if this study is made public, people will question the very basis of sanctioning costly transportation projects," said Joshi. "Without a comprehensive assessment, such projects should not be cleared. If we provide proper footpaths for pedestrians, there is no need to construct a single skywalk in the city."

immobile and dangerous

The immediate sign of the mobility crisis in Indian cities is traffic congestion and pollution. This may worsen as more commuters shift to personal vehicles.

While city managers and leaders have begun to eye the political returns on public transport investments, the most crucial link that remains invisible and neglected is walkability, the link between different modes of transport. If this is neglected in the planning process, it could, as in the case of Delhi, reduce demands on public transport. Eventually those who can afford it will switch to personal means of transport.

The pedestrian movement has gone beyond footpath development for safe and comfortable passage. The aim has been to create a new ethos of urbanity by reducing automobile dependence. Urban planners and architects say the first step should be to improve the engineering and environmental features of pedestrian ways. The next step is to enforce measures to calm the traffic. One well known example is from the Netherlands, called Woonerf; it literally means a group of streets where pedestrians and cyclists are prioritised.

Indian cities have the chance to grow differently. In most cases people walk, cycle or take the bus. These cities could build on this inherent strength. In small and medium towns where the problems of mobility have not yet manifested, provision and planning could include cycle tracks and pedestrian networks. Civic authorities need a wing working full time on traffic calming measures, alongside attempting to maximise the transition of commuters from motorised modes of transport to non-motorised and public transit trips.

Perhaps Amarnath Tewary will then junk his scooter for good.

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key informants[171]

policy makers/public administrators

1. Ajay Mathur, Director General, Bureau of Energy Efficiency (BEE)
2. Anil Dussa, Director, Ministry of New and Renewable Energy
3. Anshu Prakash, Chairman, Delhi Transport Corporation
4. Arun Maira, Member, Planning Commission, Government of India
5. BI Singal, Director General, Institute of Urban Transport, India
6. David Adam, Head of Emerging Markets, London Development Agency
7. Deepak Gupta, Secretary, Ministry of New and Renewable Energy
8. G Bharti, Municipal Corporation of Delhi
9. KT Ravindaran, Chairman, Delhi Urban Arts Commission; and Head of Urban Design, School of Planning and Architecture
10. Kulwant Singh, Director, Association of Municipalities and Development Authorities
11. Sean Randolph, President & CEO, Bay Area Council Economic Institute
12. Shovana Narayan, Joint Director General, 2010 Delhi Commonwealth Games Organising Committee

academia/ think tanks/ opinion leaders

1. Amit Kapoor, Chairman, The Institute for Competitiveness
2. Arthur I Segel, Professor of Management Practice, Harvard Business School & Chairman, The Xander Group Inc
3. Arun Kapur, Director, Vasant Valley School
4. Arun Kumar, Professor of Economics, Jawaharlal Nehru University
5. Avnita Arora, Resident Representative India, Interface for Cycling Expertise; Professor, Indian Institute of Technology, Delhi
6. Fred Steward, Professor of Innovation and Entrepreneurship, NESTA
7. Kiran Karnik, President, India Habitat Centre
8. Manit Rastogi, Managing Director, Morphogenesis Architecture Studio
9. Michael Blowfield, Teaching Fellow in Corporate Responsibility, London Business School
10. Partha Mukhopadhyay, Senior Research Fellow, Centre for Policy Research
11. Philipp Rode, Executive Director, Urban Age, London School of Economics & Political Science
12. Pratima Washan, Consultant, Energy for Sustainable Development
13. Raj Liberhan, Director, India Habitat Centre
14. Rajat Ray, Dean, Sushant School of Art and Architecture
15. Sam Miller, Journalist and Author of 'Delhi: Adventures in a Mega City'

key informants

professionals/ business community

1. Abhay Kumar Mishra, Chief Executive-Special Projects, Emaar MGF
2. Aromar Revi, Director, TARU Leading Edge Consultants
3. Arun K. Nanda, Executive Director & President, Infrastructure Development Sector, Mahindra & Mahindra Limited
4. Aruvana Das Gupta, Architect and Urban Designer and Founder Member of Institute of Urban Designers - India
5. Ashish Goel, Co-Founder & COO, Intergy Corp.
6. Ashok Lall, Architect
7. Brian S. Garrison, Managing Director, Forest City International
8. James P. Herlihy, Co-Chair, San Francisco Bangalore Sister City Initiative & Managing Director, Deutsche Bank (Private Wealth Management)
9. Malav Shroff, Co-founder and Chief Executive Officer, Ocean Blue
10. Nayan Raheja, Director, Raheja Developers
11. Peter Drummond, Chief Executive, BDP
12. Satish Magar, Chairman and Managing Director of Magarpatta Township Development & Construction Company Limited
13. Tobias Engelmeier, Founder, Bridge-To-India
14. Yashpal Sachdev, Transport Consultant, RITES Pvt Ltd

NGOs / civil society organisations / media

1. Divya Kumar Bhatia, Artistic Programmer and Consultant, Rajasthan International Folk Festival
2. Jehangir Pocha, Editor-in-Chief, BusinessWorld Magazine
3. Joey Tabone, Senior Advisor for Climate Change, The Prince's Foundation for the Built Environment
4. K Yatish Rajawat, Editor-in-Chief, Business Bhaskar
5. Leena Srivastava, Executive Director, The Energy and Resource Institute
6. Manisha Malhotra, Administrator, Mittal Champions Trust
7. Prathibha Prahlad, Festival Director, Delhi International Arts Festival
8. Ratish Nanda, Project Director, Aga Khan Trust for Culture
9. Ravi Singh, Secretary General, WWF – India
10. Romi Chopra, President, Resident Welfare Association, Vasant Vihar
11. SK Sinha, Executive Director, Toxics Link
12. Sekhar Raghawan, Director, Rain Centre Chennai

inputs from conferences

Urban Mobility Conference, Institute of Urban Transport and Ministry of Urban Development, New Delhi; 3rd December 2008:
1. Geetam Tiwari, Associate Professor, Transport Research and Injury Prevention Programme (TRIPP), Indian Institute of Technology
2. Pradeep Sachdeva, Design Associate, Pradeep Sachdeva Design Associates

disclaimer

WWF-India

World Wide Fund for Nature (WWF) is one of the world's largest and most respected independent conservation organizations. Its mission is to stop the degradation of the planet's natural environment, which it addresses through its work in biodiversity conservation and reduction of humanity's ecological footprint. It has been working on these issues in India for over four decades now.

Mirabilis Advisory

Mirabilis Advisory is an economic development consultancy that works in the areas of globalisation, urbanisation, sustainability and entrepreneurship. We undertake complex research-led mandates on behalf of clients, typically governments and institutions, to inform competitive positioning, economic development programmes and communication strategies. Based on our expertise, knowledge and insight, we also develop and own impactful brand-building platforms that influence and shape public opinion.

WWF *for a living planet* ®

WWF India

172B, Lodhi Estate
New Delhi-11003

www.wwfindia.org