

33. Revival of environment assets -Nazafgarh Jeel - 7 km²; Jahangirpuri lake and Horse Shoe Lake, Bhalswa needs restoration.
34. Building up aquifers-depletion of water table.
35. Protection of Delhi Ridge as forest belt near Faridabad border.

Storm Water Drainage

1. Remodelling of drains are required
2. Discharge of sewage into storm water drains must be stopped
3. Covering of drains and turning them into roads is not desirable (e.g., Najafgarh drain and Barapulla drain)
4. Storm water drains are silted up to the extent of no desiltation. Therefore drains are to be reconstructed

Urban Slums and Housing

1. There is no slum policy (for JJ clusters and slums) in place
2. There is no act, or consistent policy for tenure security and relocation sites
3. In situ upgradation of slums does not take place - rather, only relocation is done
4. It is always claimed that there is no land available for Slum Relocation in Delhi. This does not seem to be true. In the first Master Plan, 43,000 Hac. of land was allocated for housing, but the DDA had utilized barely 25% of this.
5. Populations are shifted to relocation sites before infrastructure is provided why cannot infrastructure be provided beforehand?
6. The DDA does not provide land for relocation. So settlements should form Cooperative Society for Slum Relocation and rehabilitation
7. In-situ upgradation for Slum / JJ Clusters-Land owning agency has to forego the land cost. In-situ upgradation is the only answer. Land owning agencies should form a mission and give up their lands.



8. Slum department is collecting money (advances) for slum development, but not using it for slum development
9. JJ Cluster and Slums are to be treated as integral part of the city. Different segments of the population have to co-exist. The planning process has not provided for them.
10. Precedence of legal security Mumbai Model the Act in

Maharashtra gives urban poor the right to housing; provides for in-situ rehabilitation.

11. Recognize Urban Poor's right to housing
12. 40 sqm per family is the minimum size of plot to be provided for the slum dwellers.
13. The cutoff date should be of a year back; instead of a decade back

14. Look into the affordability of EWS housing provided by DDA. One DU costs approx. 1 lakh.
15. Enough provision for EWS housing in the city should be made.
16. Work place relationship is lacking at relocation sites
17. The relocated population are to be provided with free bus passes for a period of at least 5-10 years
18. Bank loans and support from financial institutions are to be provided to inhabitants of slums and JJ clusters
19. Minimum norms of physical and social infrastructure are not available at relocation sites and JJ clusters
20. Land is available for insitu upgradation of slums / JJ clusters --- if land is a constraint at the existing site, the relocation site should not be more than 1km distant
21. Slum department has rehabilitated 8000 families with investment of 20 crore.
22. Problem of Ragpickers in Delhi
23. Service providers of the city are staying in JJ clusters
24. Slum rehabilitation are short term
25. The rent control act creates artificial scarcity of housing in the city
26. Affordable rental housing for poor --- there should be more of this
27. Creating Housing for the poor
28. Plots, with shared infrastructure (which can be upgraded at a later date) and one room tenements should be made available for urban poor. Also, multistoried accommodation can be provided next to the work centers.
29. Fresh migrants are to be provided with subsidized housing with only cost of construction
30. Unplanned rehabilitation of the poor leads to theft in urban services
31. Unauthorized colonies lack basic infrastructure
32. Dislodging of the poor for utilization of lands
33. Lack of planning and implementation

Institutional Assessment & Governance

1. The lack of effective governance is a critical issue in the city
2. Need for a well- defined authority to manage the city
3. Institutional reform, in order to ensure transparency and responsiveness, is required.
4. Multiplicity of Authorities
5. Institute a competent design authority to design, build and maintain good public places.

Agenda for Workshop

Date : 07.09.2006

Schedule	Agenda	
1.45 PM to 2.00 PM	Registration	
2.00 PM to 2.05 PM	Welcome address	By Mr. Mahesh Babu, CEO, IL&FS Ecosmart
2.05 PM to 2.15 PM	Opening Remarks	By Chairperson, Mr. S. Reghunathan, Former Chief Secretary, Govt. of Delhi
2.15 PM to 3.00 PM	State of City Presentation	By Suneetha Kacker, IL&FS Ecosmart
3.00 PM to 4.00 PM	Open House Discussions	Chairperson, Mr. S. Reghunathan
4.00 PM to 4.15 PM	Tea Break	
4.15 PM to 5.15 PM	Discussion by Sectoral sub- groups	Sectoral Coordinators:
	<i>Urban Slum & Poor</i>	<i>Suneetha Kacker</i>
	<i>Urban Services</i>	<i>Rahul Singh/Dr. P.K Jain</i>
	<i>City Environment & Heritage</i>	<i>Harleen Kaur/Anuradha /Dr. N.B.Majumdar</i>
	<i>Urban Transport</i>	<i>Sandeep Kaushik</i>
5.15 PM to 6.00 PM	Sectoral Strategy Presentation (10 minutes for each sector)	By Sector Leaders/Coordinators
6.00 PM to 6.15 PM	Strategy for the City	By Chairperson, Mr. S. Reghunathan
6.15 PM to 6.20 PM	Conclusion	By Dr. S. Mukherjee, IL&FS Ecosmart

Agenda for Workshop

Date : 08.09.07

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	<i>Urban Transport</i>	<i>Sandeep Kaushik</i>
5.45 PM to 6.00 PM	Strategy for the City	By Chairperson, Mr. S. Reghunathan
6.00 PM to 6.10 PM	Conclusion	By Dr. S. Mukherjee, IL&FS Ecosmart

List of individuals invited for CDP Workshop

S. No.	Name & Designation
1.	Dr. Venugopal Director Central Pollution Control Board
2.	Dr. Trivedi Additional Director Central Pollution Control Board
3.	The Member Secretary Central Ground Water Board
4.	Mr. S. S. Ghonkrota Delhi Pollution Control Board
5.	Dr. Nandita Moitra Delhi Pollution Control Board
6.	Dr. M. P. George Delhi Pollution Control Board
7.	Mr. Lalit Kapoor Additional Director National River Conservation Directorate Ministry of Environment & Forests
8.	Dr. B. Sengupta Member Secretary, Central Pollution Control Board
9.	Mr. Pradeep Khandelwal SE, Planning Department Municipal Corporation of Delhi,
10.	Mr. Surinder Pal Eng. Deptt, Municipal Corporation of Delhi,
11.	Mr. Anil Prakash Director-in-Chief Municipal Corporation of Delhi
12.	Mr. A. K. Jain Commissioner Delhi Development Authority,

13.	Mr. Ashok Kumar Addl. Commissinor Office of Master Plan for Delhi,
14.	Mr. Ravider Kumar Kakker CPWD
15.	Mr. R. K. Gupta Chief Engineer (Works), Delhi State Industrial Development Corporation Ltd
16.	Mr. B. K. Sharma Director (Planning), Department of Urban Development, Government of NCT of Delhi
17.	Mr. V. V. Bhatt Principle Secretary (Fin / Plg.), Department of Planning, Government of NCT of Delhi
18.	Mr. Arun Mathur Chief Executive Officer, Delhi Jal Board
19.	Mr. Ashish Kundra Addl. Chief Executive Officer, Delhi Jal Board
20.	Mr. R. B. Mohar Chief Engineer (Civil-III), Delhi Jal Board
21.	Mr. M. C. Pareva Office of the Chief Engineer, Irrigation & Flood Control Department
22.	Mr. Omkar Singh Conservator of Forest & Chief Wildlife Warden, Department of Forest
23.	Mr. Prabhat Tyagi Department of Forest
24.	Mr. B. B. Uppal Ministry of Unrban Development
25.	Mr. R. Jeyaseelan Chairman, Central Water Commission

26.	Mr. B. S. Ahuja Member (WO&P), Central Water Commission
27.	Mr. S. K. Agarwal Member, Central Water Commission
28.	Mr. B. B. Saxena Principal Secretary (UD), Department of Urban Development
29.	Ms. N. Jayaseelan Secretary (Environment), Government of NCT of Delhi
30.	Dr. Rajeev Babu Director General Archeological Survey of India
31.	Dr. R. C. Sharma Joint Director General, Archeological Survey of India
32.	Lt. Col. S. K. Garg Medical Officer of Health, NDMC
33.	Dr. Indrani Chandrasekhran Director, Ministry of Environment & Forests
34.	Dr. U. Sridharan Addl. Director Ministry of Environment & Forests
35.	Mr. Akash Mahapatra Director Panchayat, GNCTD
36.	The Member Secretary National Capital Regional Planning Board
37.	Er. S. Jethwani Director Works, Office of Engg. In Chief
38.	Er. R. F. Shoran Project Manager, Public Works Department

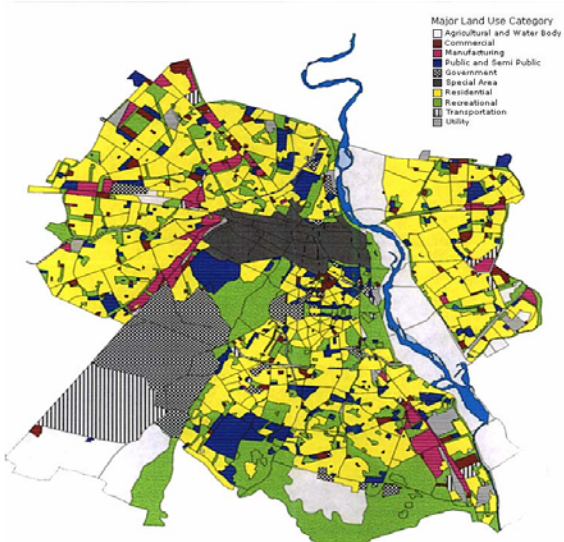
39.	Mr. V. S. Madan Secretary-cum-Commissioner (Transport)
40.	Mr. Umesh Tyagi Joint Commissioner (Transport)
41.	Mr. Brahmanand Director Planning, State Transport Association
42.	Mr. B. I. Singal Tech. Advisor, State Transport Association
43.	Shri V. B Jhulka Dy. C. G. M. Traffic,
44.	Mr. Suman Sharma Chief Manager, DTTDC
45.	Mr. S. Sharma S.E.-DTTDC,
46.	Mr. R. Raina S.E -II, New Delhi Municipal Corporation
47.	Mr. D. Verma DCP Traffic
48.	Dr. S. Gangoupadhyay Head Traffic & Transport Division, CRR
49.	Dr. P. K. Sarkar Prof.& Head, Dept. of Transport Planning,
50.	Dr. Sanjay Gupta Asst. Professor, Dept. of Transport Planning,
51.	Ar. P. R. Mehta Ex- President Council Of Architecture,
52.	Shri Anul Dyal CPRO, Delhi Metro Rail Corporation,

53.	Dr. Dinesh Mohan I.I.T Delhi
54.	Dr. Geetam Tiwari I.I.T Delhi
55.	Mr. Rohit Baluja Institute of Roads & Traffic Education
56.	Mr. Sandeep Patil CII
57.	Mr. Manmohan Singh SRUTI
58.	Mr. Chhabra Secretary, NICWA Narela Industrial Complex Welfare Association
59.	Shri Basant Somani President, NICWA Narela Industrial Complex Welfare Association
60.	Mr. Dharampal President, IWSSP Industrial Welfare Society
61.	Ms. Amita Bhaviskar Institute for Economic Growth
62.	Mr. K. T. Ravindaran Dean, School of Planning and Architecture
63.	Mr. A. G. K. Menon TVB School of Habitat Studies
64.	Mr. Amitabh Kundu Jawaharlal Nehru University, Centre for Study of Regional Development
65.	Mr. Parth Shah Director, Centre for Civil Society
66.	Mr. Promod Chawla President, URJA (Association of RWA's)
67.	Mr. Farhad Suri Mayor, Municipal Council of Delhi

68.	Ms. Sunita Narayan Centre for Science and Environment
69.	Ms. Anumita Roy Centre for Science and Environment
70.	Mr. Suresh Babu Centre for Science and Environment
71.	Dr. T. S. Panwar TERI
72.	The Director WWF
73.	Mr. Ajay Mahajan Kalpavriksha (NGO)
74.	Mr. Ashok Khosla Development Alternative
75.	Dr. Dilip Biswas Chairman, CPCB (Retd)
76.	Mr. Ravi Aggarwal Srishti / Toxic Links,
77.	Mr. Uma Bharadwaj ACCORD (NGO)
78.	Mr. Depinder S Kapoor Water Aid
79.	Mr. EFN Riberio Gulmohar Enclave
80.	Mr. O. P. Jain INTACH
81.	Mr. Arun Gupta INTACH
82.	Cris Heymans World Bank
83.	Subhagato Dasgupta World Bank
84.	Dr. Satpal Singh NIUA

85.	Mr. R. M. Pillai Commissioner, Slum Department
86.	Mr. S. K. Das (Prominent Architect & Planner)
87.	Mr. Kapil Narula TERI,
88.	Col. Rakesh Jauhari TERI,
89.	Mr. Manu Bhatnagar INTACH
90.	Mr. Dunu Roy Hazard's Center (NGO), Munirka
91.	Mr. Ramendra Sanjha Manch (NGO)
92.	Mr. V. K. Jain TAPAS (NGO)
93.	Ms. Bharti Chaturvedi Chintan (NGO)
94.	The President Residential Welfare Society, Nizamuddin
95.	The President Residential Welfare Society, Defence Colony
96.	The President Residential Welfare Society, Tuglakabad
97.	The President Residential Welfare Society, Old Rajendra Nagar
98.	Prof. H. B. Singh President, RWA, Kaushambi
99.	Mr. Ashok Lal Prominent Architect, Civil Lines
100.	Mr. Roshan Seth

	Geetanjali Enclave
101.	Mr. Sanjay Kaul & Mr. Pankaj Gupta People's Action
102.	Mr. Ravi Das Engineer-in-Chief Municipal Corporation of Delhi,



Chapter – 16 : SWOT Analysis



CHAPTER - 16 CITY SWOT ASSESSMENT

16.1 INTRODUCTION

Assessment of the strengths, weaknesses, opportunities and threats to a city forms a basis for the preparation of a relevant city development plan. A city level SWOT analysis has been done in this chapter based on an assessment of the status of various sectors of the city.

The chapter has been divided into four sections each describing the strengths, weaknesses, opportunities and threats respectively.

16.2 STRENGTHS

Delhi is a National Capital and the seat of administrative power; it is the center of economic and political activities. The city has several strengths. These have been outlined in Table 16.1.

Table 16.1: DELHI CITY-STRENGTHS

SECTORS	STRENGTHS
Location & Regional Linkages: Delhi is located strategically and connected with various economic nodes of the country. Due to its strategic importance, the city's influence extends throughout India and as a National Capital throughout the world.	
	<ul style="list-style-type: none"> • Seat of all political and administrative power of Country. • Highest level of urbanisation in the Country. The level of urbanization is 95 per cent. • It is easily accessible from other Mega Cities of the Country and other areas of Northern and Western India through Rail, Road and Air Transport. With Coming up of NHDP project, cities connectivity from Western and Eastern Gateways of the country has increased. • Delhi acts as nodal point for collection and distribution of passenger and cargo traffic in Northern India.
City Economy: The city's economy is enjoying a period of high growth	
	<ul style="list-style-type: none"> • GSDP is growing at a high growth rate of around 15% (CAGR at current prices-2002-03), with the service/tertiary sector contributing more than 76 per cent towards the economy of the state; • High per capita income at Rs 47477 (current prices, 2002-03) • High spending capacity / tendency
Trade and Commerce: There are 8 major types of wholesale and specialized markets of regional importance. Fruit & Vegetable Market, Azadpur and Fish & Meat Market, Gazipur are some of the major distributions centers for commodities in the Northern and North west region of the country.	

SECTORS	STRENGTHS
	<ul style="list-style-type: none"> Walled City and its extensions have 5-6 specialized market of regional and city level importance. These specialized markets are Wholesale grain Market; Bicycle & accessories, cloth market, General merchandise & hosiery, iron steel & junk and building materials. The city is well connected to regional supply chains The city is gaining in importance as a centre of retail trade
Tourism	<ul style="list-style-type: none"> World famous tourist destination Attracts both domestic as well as international tourists. Connectivity to the tourist destination in the northern region such as Jaipur, Ajmer, Agra, Varanasi et.al
Heritage	<ul style="list-style-type: none"> It is famous for its heritage and culture, both built and unbuilt Walled City of Delhi has 1000 heritage structure and 25 historical monuments.
State Reforms: State Government is undertaking various institutional and legislative reforms.	
	<ul style="list-style-type: none"> Pro active government; Presence of a number of development bodies and NGOs; State on a reform path with initiatives such as Bhagidari.

16.3 WEAKNESSES

The major areas of weaknesses for the city include infrastructure; weak urban growth management; lack of environmental management; slums, and overlapping institutional jurisdiction. The details of these have been elaborated in Table 16.2. These weaknesses need to be worked on for the city.

Table 16.2: DELHI CITY-WEAKNESSES

SECTORS	WEAKNESSES
Infrastructure: Weaknesses of the water supply, sewerage, solid waste, drainage and road & Transport systems are discussed below.	
	<ul style="list-style-type: none"> Lack of solid waste management facilities (for treatment and disposal) in the city leading to indiscriminate dumping of garbage and land pollution. Existing dumping sites are saturated and no new ones have been developed Lack of drainage and sewerage network especially in the newly developed areas. The surface drains are used for carriage of 25-30% sewerage, leading to environment hazards Lack of infrastructure facilities like water supply, sewerage, road and drainage in the unauthorized colonies; urban villages and colonies developed by private developers. Pressure on roads in walled city and extension due to encroachment, excessive commercialization and vehicular

SECTORS	WEAKNESSES
	<p>movement.</p> <ul style="list-style-type: none"> • Lack of parking space in the city. • Lack of proper public transport system leading to skewed traffic composition on the road network of the city. • Lack of tourism infrastructure facilities • Inadequate public conveniences. • Disposal of untreated industrial waste in Yamuna River.
Urban Growth and Land Management	
	<ul style="list-style-type: none"> • Haphazard growth of the city due to uncontrolled migration, poor housing and poor provision of infrastructure. The areas which have grown haphazardly are urban villages; resettlement colonies and unauthorized colonies • High population density within the walled city & Extension and East Delhi planning Division. Moreover low density development in RK Puram; Motibagh; Vinay Nagar..etc • Rate of Unauthorized developments and illegal land subdivisions are increasing in urban periphery and village settlements. • Lack of parks and open spaces. • Violation of rules, byelaws by the public and residents of walled city- leading to the loss of heritage in the walled city. • Overcrowding of businesses and people in the walled city. • High rate of population growth and urbanization, leading to slum formation, strain on infrastructure facilities and deterioration of the living environment.
Conservation	
	<ul style="list-style-type: none"> • Lack of integration of heritage concerns with planning process • Lack of proper database management in each sector especially in the Heritage and Infrastructure development. • Absence of clear-cut guidelines and responsibilities of various organizations. • Lack of awareness among in the city people towards heritage conservation. • Ineffective maintenance of heritage sites like Red Fort, Qutab Minar... etc as well as buildings in the walled city and Extension areas.
Urban Environment	
	<ul style="list-style-type: none"> • Degradation of River Yamuna • Loss of traditional water systems. • Extreme Depletion of ground water. • Degraded air quality. • Congestion of major arterial roads and commercial area of the city. • Contamination of piped water with sewerage.

SECTORS	WEAKNESSES
Slums and JJ Clusters	<ul style="list-style-type: none"> • increasing population (& densities) in existing JJ clusters • Lack of mechanism for on-going creation of housing for the urban poor (lack of inclusion of urban poor in city development process) • Poor infrastructure facilities in both JJ clusters and resettlement colonies and relocation sites;
Institutional coordination	<ul style="list-style-type: none"> • Lack of coordination between central and state government • Lack of coordination among various departments like MCD, DDA, PWD, DJB, DUAC etc. • Non implementation of 74th CAA in spirit-MCD does not have financial/taxation powers, budget to be approved from Department of Local Self Government. • DDA entrusts functions to MCD against the spirit of 74th CAA. • Overlapping jurisdictions between DDA, MCD and NDMC; DDA exercise control over major parts of MCD Area. • Overlapping of functions between line departments.

16.4 OPPORTUNITIES

The city has several aspects that are potential opportunities for the city. The main opportunities are in the areas of economic growth, proposed projects, state initiated reforms and heritage. These have been detailed out in Table 16.3.

Table 16.3: DELHI CITY-OPPORTUNITIES

SECTORS	OPPORTUNITIES
Economic competitiveness	<ul style="list-style-type: none"> • With the presence of good connectivity, it can develop as nodal centre linked with other economically vibrant cities. • The city has a highly entrepreneurial population • High literacy rates • High growth areas such as NOIDA and Gurgaon are located in the vicinity • It can attract many tourists because of its rich heritage and culture. • Due to good connectivity, the National Capital city has the potential to attract private developers and FDI in the housing and infrastructure sectors. • Can emerge as an "events capital" particularly after the commonwealth games 2010
Proposed Projects	<ul style="list-style-type: none"> • Commonwealth games-2010 is likely catalyze investment to the tune of Rs 2000 Crore on development of civic infrastructure in the city. • With the anticipated growth rate of around 8% for GDP of India during this FY and an increase in the limit of FII and FDI, Delhi can expect more investments provided the city sells itself well in comparison to other cities • Development of Metro Rail and its extension to other DMA towns will resolve the problem of transportation

SECTORS	OPPORTUNITIES
	system of the city
State urban reforms	<ul style="list-style-type: none"> • City is initiating reforms in urban governance through implementation of various governance models such as Bhagidari Scheme; E-governance; Repeal of ULCR, PPP models for project implementation etc. • Institutional Reforms proposed for MCD by splitting it into several Municipal Corporations • The Government is currently focusing on urban slums and improvement of basic services in JJ clusters
Urban Heritage	<ul style="list-style-type: none"> • Rich heritage can attract the tourists. • The local crafts from across the nation can be showcased for attracting business and shoppers during events such as Trade Fair and other events organized in city.

16.5 THREATS

The threats are primarily the existing weakness, which if not addressed adequately might pose threats for development of the city in the future. These are detailed out in Table 16.4.

Table 16.4: DELHI CITY-THREATS

SECTORS	THREATS
Economic	<ul style="list-style-type: none"> • Wholesale trade is concentrated in core walled city area, which attracts workers and traders to the central location-leading to deterioration of the city environment • Lack of adequate infrastructure to capitalize on economic opportunities (roads, freight handling facilities ... etc)
Infrastructure	<ul style="list-style-type: none"> • High population growth can lead to further pressure on the infrastructure sector in the future. Augmentation of trunk services is crucial. • Lack of sewerage system, solid waste management, poor distribution of water can lead to health problems and unhygienic conditions in the city. • Poor infrastructure in new colonies especially in the urban extensions and urban villages are a threat to quality of life. • Infrastructure provision in the slums is inadequate resulting in very poor living conditions.
Institutional and fiscal reforms	<ul style="list-style-type: none"> • Capacity building of all the government organizations if inadequate would result in non implementation of several reforms. • Fiscal reforms are a key for carrying out projects and provision of infrastructure in a sustainable manner. • Urban Development is the responsibility of Central government and MCD is under both Central and State Government. These overlapping roles of state and central government have led to a non functional executive system of the city.

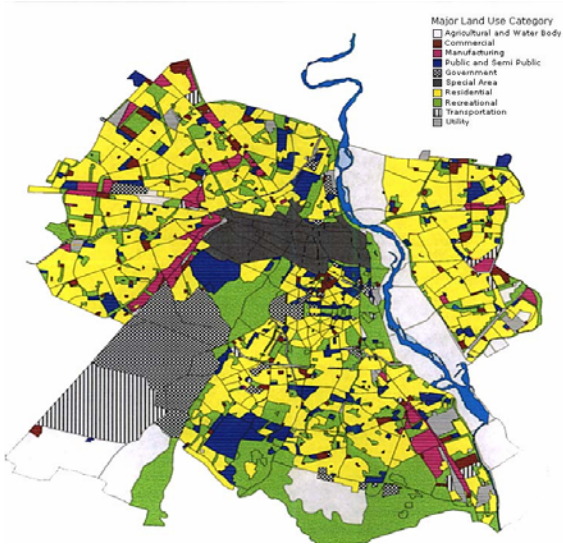
SECTORS	THREATS
Conservation	<ul style="list-style-type: none"> • Lack of repair and maintenance of heritage buildings can lead to rapid deterioration of built fabric in the walled city. • Continued negligence of heritage areas can also lead to loss in tourism revenues • Walled city and Extension faces threat in the event of disasters both natural as well as man-made.

16.6 CONSOLIDATED ISSUES

SECTOR	ISSUES
City Economic Profile	<ul style="list-style-type: none"> • The comparatively large influx of low quality manpower from neighboring states could skew the skill level available. • The lack of focus on major value-add sectors like Software, BPO, Communications and Biotechnology is likely to lead to a situation where the Value-Add per employee/enterprise would be affected adversely. • The highly skewed gender ratio in the employment sector, with 15% females in the workforce.
City Environment Profile	<ul style="list-style-type: none"> • Ground Water: The abstraction of ground water is more than the estimated availability of ground water. CGWB estimates that 47,945 ha m water is extracted for domestic, industrial and irrigation purposes. • River Yamuna: The river Yamuna stretches for 22 kms along Delhi, but after Rs 55 - 75 Crores spent per kilometer on cleaning it up, the river is more spent than ever. • Forest Cover: The Ridge area of Delhi has degraded tremendously due to by roads, buildings, traffic, garbage dumping, lopping of trees and grazing by livestock. Mining and quarrying activities in the past have degraded the South-Central Ridge causing enormous loss to biodiversity. • Air Environment: The alarming levels of SPM which are way beyond the permissible levels are a serious area of concern. Even the RPM levels were exceeding the permissible limits. • Environmental Health: High occurrence of respiratory infections, heart problems, sickness from water and vector-born diseases and other diseases because of exposure to ambient and indoor pollutants and inappropriate disposal practices of municipal solid waste have become the way of life in the city. • Green House Gases: Delhi is releasing around 16 million tones of CO₂ emissions, mainly contributed by vehicles, power and residential sectors. This quantity if unabated could be a major threat to stabilizing Climate Change.
Land Management & Urban Growth	<ul style="list-style-type: none"> • Increasing gap between demand and supply of housing and infrastructure • Encroachments on agriculture land and urban villages

SECTOR	ISSUES
	<ul style="list-style-type: none"> • Exploitation of land for unauthorized development • Non-conforming land uses-industrial & commercial • Lack of linkage of Physical Planning Strategy with Financial Planning • Over crowding, haphazard development without basic services
Urban Poor and Slum	<ul style="list-style-type: none"> • Diminishing legal security of tenure • Lack of access to suitable mechanisms of finance • Low rate of in-situ up gradation of existing JJ clusters • Poor access to public goods and services at JJ clusters and relocation sites • Variable plots sizes at relocation sites. • Lack of suitability of relocation sites
Conservation & Heritage Management	<ul style="list-style-type: none"> • Piecemeal, uncoordinated approach to the heritage and conservation in Delhi. • Limited positive and meaningful co-operation between the agencies involved. • No overall planning and direction in the sector. • Monuments are in dilapidated stage and being altered heavily (losing their historical value) • Number of heritage buildings occupied by State and Central Government Departments. • No Incentives and technical support given to owners of heritage building for they're up keep and maintenance. • Difficult to apply laws and regulations and at the same time lack of rules/ guidelines for restoration of civil heritage, construction on and demolition of heritage structure. • Lack of political commitment and public awareness on heritage value. • Lack of Public facilities in and around the monuments and area. • Poor Solid Waste Management in old city.
Water Supply	<ul style="list-style-type: none"> • Poor management of supply, leading to high rate of water loss (40%), intermittent supply & wastage • Augmentation of water sources required • No equitability in water supply, need for rationalization of water supply. • High operation and maintenance cost and highly subsidized water supply. • Revenue losses due to less coverage / jurisdiction area (45%). • No centralized database and information management system in place.
City Sewerage System	<ul style="list-style-type: none"> • 530 MGD of untreated sewage is polluting the river Yamuna. • Overflow from sewers into storm water drains (SWDs) indicating urgent there is urgent need to segregate the sewage flow from entering into SWDs. • Trunk sewers are considerably silted, requiring to be desilted & repaired to restore their capacity in a time

SECTOR	ISSUES
	<p>bound manner.</p> <ul style="list-style-type: none"> • STPs and Sewage Pumping Stations are several years old-leading to reduced efficiency. • conveyance system needs to be checked for full capacity utilization of CETPs.
Storm Water Drainage	<ul style="list-style-type: none"> • Carries considerable quantities of raw and untreated effluents • Need for diversion of all waste water (both domestic and industrial) from surface drains. • Lack of integration in designing, planning and construction of roads and drains • Streamlining of agencies responsible for drainage throughout city
Review of Road Network and Transport System	<ul style="list-style-type: none"> • High growth rate of vehicles and heavy vehicular volumes on road causing congestion, delay, safety, pollution • Ineffective utilization of road space- on street parking, encroachments, lack of pedestrian facilities • Inadequate and inefficient public transport system - requirement of integrated multi-modal transport system for Delhi • Lack priority and safety of pedestrians on road • Inadequate parking at major commercial areas and work centers • Lack of coordination in implementing agencies • Intermixing of local and regional passenger and goods traffic
Institutional Arrangement	<ul style="list-style-type: none"> • Lack of clear demarcation of responsibilities and effective reporting mechanisms between the three tiers of government-local, state and centre • MCD & NDMC both report to the central government and not state government • MCD has been trying hard to introduce the new system of Local Area Plans (LAP), through amendments to Unified Building Byelaws of Delhi. As things stand today, LAP violate the Delhi Development Act 1957 as well as Delhi Municipal Corporation Act. • Overruling of the Delhi High Court decisions by the NCT of Delhi and Ministry of Urban Development. • There is a lack of clarity over the departmental responsibilities for land use planning, development, maintenance and enforcement. • Delhi Development Authority (DDA) does not coordinate with the State Government on physical development.



Chapter – 17 : Vision, Gap Analysis & Development Strategy



CHAPTER - 17 VISION, GAP ANALYSIS & DEVELOPMENT STRATEGIES

17.1 INTRODUCTION

Evolving a vision for the city has been an iterative process, involving several interactions with individuals, as well as focus groups. During the deliberations, perspectives on, and aspirations for the city were put forward, in response to the perceived inherent potential of the city, vis-à-vis its current state of development.

It is now widely acknowledged that vibrant urban areas are the drivers of a nation's growth. In India, cities, which house only 30% of the population, contribute over 60% of GDP. In order to thrive, however, it has been observed that cities need to be strong on two fronts: economic growth and quality of life. As noted in the city assessment, Delhi performs exceedingly well on the first front, but falls far short on the second. This has also been confirmed by the recently released Delhi State Development Report, which concludes that while the city is a great place to earn a living, it a terrible place to live in. / it offers a substandard quality of life. Delhi ranked a poor 157th in the Mercer survey ranking the livability of cities in 2005.

Economic growth and quality of life are inextricably linked, and can mutually reinforce each other leading to / in a virtuous cycle or degrade each other, resulting in a vicious cycle. It is thus critical that Delhi utilizes the advantage of its current buoyant economic growth to effect improvements in the quality of life of its inhabitants. It is anticipated that these measures will impact the city's economic performance directly, as well as indirectly. Alongside this, the city needs to capitalize on its strengths in order to attract talent, nurture entrepreneurship, and boost the performance of specific economic sectors within its boundaries. These measures will put in place a competitive advantage / edge for the city, to ensure that that Delhi acts as a magnet for the best, and sustains its high growth rate well into the future.

17.2 VISION STATEMENT

During the stakeholder workshops, and on-site consultations undertaken across the city as part of the CDP, the following concerns emerged as uppermost amongst all stakeholders¹:

- Access to basic infrastructure -- safe drinking water, sanitation, drainage, power, health care and education
- Establishing an image for the city, to guide initiatives at urban renewal; and undertaking these with the aim of recreating the city
- Safeguarding the city's depleting environmental resources - ground water, the River, the ridge

¹ Stakeholders consulted included government representatives, political representatives, academic representatives, NGO's, RWA's, and prominent citizens

- Assuring safety and security to all segments of the population
- Making provisions for the lower income groups, who are perceived as not having been provided.
- Safe, reliable and affordable transport infrastructure, providing effective connectivity across the city
- Most critically, providing a reliable, accountable / transparent, and responsive system of governance for the management of city infrastructure, and the conduct of urban activities / its business.

The urgent need for systems and procedures of decision making and management that could respond to the needs of the city's inhabitants as against other interests was echoed across all groups of stakeholders.

On the basis of the above, Delhi's Vision is defined as follows: *To become a highly livable city that offers a superior quality of life through a robust, employment generating economy; that is safe and inclusive, environmentally and socially sustainable; and is based on reliable infrastructure and offers a transparent, responsive system of governance dedicated to the city's felt needs.*

Strategies across sectors to achieve the above vision are elaborated further below.

17.3 STRATEGY FOR ECONOMIC DEVELOPMENT

The overall strategy for economic development is based on certain key observations made during the city assessment, as well as a consideration of international practices in comparable situations. Delhi, like all major metros worldwide is driven by a fast growing migrant population. Historically, migrations have fueled major economic shifts not only in countries, but more critically, in key cities. Some of the notable examples have been the growth of cities like London in UK; New York, San Francisco and Los Angeles in USA; and Shanghai in China. Similar trends are noticed in the sub continent also, including in Mumbai and Bangalore.

Delhi, in particular, due to its location has been the scene of major conflicts and attendant migration through its turbulent history. This has ingrained a high level of entrepreneurship, innovation and tolerance into its character, which are also its basic strengths.

The present state of the city, as defined in the previous chapter, shows a fast growing service sector that provides a major share to the GSDP (76%). It also shows a high growth in population (45% over the last 10 years), fuelled by immigration, a majority of whom are involved with the unorganized service and manufacturing sectors. Surveys indicate that up to 60 % of the fresh migrants to the city are absorbed into these sectors. Other key characteristics of it's economic profile include

- The tertiary sector, accounting for 76% of the GSDP of Delhi, is also the fastest growing. Within the tertiary sector, real estate and business services showed 17 % CAGR between 1994 - 2004.

- Trade, along with Hotels & Restaurants account for over 43.5% of the total enterprises in Delhi and contribute to nearly 20% of its GSDP.
- As per the the 55th round of the NSS, about 45 % of the employment generated in the city is accounted for by the informal, or unorganized sector.
- The Annual Survey of Industries (2003-2004), revealed that as many as 18 % of the factories in the city were engaged in manufacturing of wearing apparel, dressing and dying of fur. This activity has a large representation in the unorganized industrial sector as well.

A comparison with other major metros like London, New York and Shanghai shows that Delhi is fairly well placed to emerge as a leading city, at least from an economic view point, as it has all the major ingredients in place:

- High growth in revenues driven by a strong and fast growing services sector, high collection of revenues and high per capita income.
- Located as the gateway for the north, it is the regional hub for movement of goods and traffic. It is also the major port of entry for the north and is a tourism gateway.
- Intrinsic demographic advantage with a high level of literacy and migrant population that provide it with dynamism that has come to characterize the city.

The city needs to make the best use of its resources, which is essentially the high level of entrepreneurial ability of its people. In order to unleash the true potential, the govt. needs to encourage and nurture these abilities through forward looking policies and interventions. The following strategies are recommended for sustaining the growth of the city well into the future:

- *Encourage high value-add services:*

Delhi has the potential to become a major hub for a number of high value-add services through leveraging its locational strengths. Due to the presence of a large and fast growing base of IT-BPO service sector in its hinterland (NCR) the city is strategically positioned to provide a high quality professional manpower to these industries. With the major road corridors like the North-South, East-West and Golden Quadrilateral passing through the State, the city could also metamorphose itself into a major inland container port and logistic hub. The city has a historical advantage in this respect, being the hub for redistribution of wholesale produce in the northern region of the country.

Another area that has a huge potential for generating high value addition is the fashion industry as it has the largest concentration of design houses in this sector in the country. Moreover, it has a geographic advantage in having a rich craft's tradition in the textile sector within easy reach in regional cities such as Lucknow, Jaipur, Aligarh...etc to add value to high end products. Coupled with other life style products, this could become a major growth sector in the years to come. Also, with its rich cultural

heritage, and a major port of entry, the city could be a major tourist destination.

- **Organizing Low End Services:**

The city has a very vibrant unorganized sector that provides it with a plethora of low end services. It is recommended that this sector be provided with a range of incentives to enable it to grow and gainfully employ the large number of people who migrate from the neighboring States in search of work to the city. One of the key incentives would be to provide this sector with simplified processes for micro-credit accessibility. In its absence these enterprises often turn to the money lenders or stagnate. This also needs to be properly propagated for effective utilization.

A key enabler for this sector is provision of adequate and reliable public infrastructure. The major areas requiring intervention and development include affordable housing, appropriate transport links and education facilities for the slums and JJ unit dwellers, which supply the majority of the work force for the unorganized sector.

- **Enhancing Quality:**

Measures need to be initiated for capacity building in the unorganized sector for enhancing quality of products and services, positively affecting value addition and returns.

Based on the key strategies defined above for the city development and the analysis of the present state of the city, an action plan for Delhi has been defined in the subsequent paragraphs.

17.4 KEY SECTORS

The key areas that have potential for driving the economic growth of the city are:

1. IT & ITES Sector
2. Life Style Sector
3. Logistics Sector
4. Heritage & Tourism Sector
5. Education Sector

In addition to the above, it is anticipated that the large investments flowing into the construction and infrastructure development sectors due to the Commonwealth Games 2010, and projects flowing from the JNNURM process will also enhance the economy of the city substantially.

17.4.1 The IT & ITES Sector

The IT & ITES sector in India has been moving up the value chain, world-wide, in the Software and BPO services, with consequent growth in its value-addition and quantum. As per NASSCOM data, the turnover of the IT & ITES sector for the year 2005-06 was US\$ 23.4 Billion, with an annual growth rate of 32%. It presently employs nearly 1.3 million people directly and has created an additional 2 million jobs indirectly.

The NCR is one of the major hubs for this sector along with Bangalore, Hyderabad, Chennai, and Mumbai-Pune. The city, with its large population of well educated work force, is ideally positioned to attain the pre-eminent position for providing workers for this fast growth sector. However, there is need for undertaking major capacity building exercise in consonance with the requirements of this sector.

Development of a framework for boosting the KPO sector needs to be undertaken, including exploring the possibility of setting up SEZ for the purpose. The KPO sector is at a nascent stage in the country and Delhi could emerge as one of the key destinations for this due its ready availability of high quality professionals. This could particularly be in the areas of Medicine, Law, Biotechnology, Education & Training, Engineering, Paralegal Content and even Intelligence services.

17.4.2 The Life Style Sector

The high per capita income of the City, coupled with the concentration of industries in its hinterland (Faridabad, NOIDA, Gurgaon, etc.) and the inherent spending habits of the populace has placed the city in a pre-eminent position in the fashion industry. It currently hosts a majority of the top-end designers in the country.

This industry along with the personal care and home care industry show a huge potential for growth, fueled by the growth of income in the NCR. As these industries are largely dependent on the services/skills of the unorganized sector, the growth in the above sectors would translate into huge economic spin-offs for the unorganized sector. It is necessary to explore the availability of land at suitable locations that could cater to the clientele in both the city and its hinterland. One such area, capitalizing on the existing location of many of these shops (albeit low-end), is the Mehrauli-Gurgaon Road. It is proposed to develop it as the "Life Style Mile". The private sector could be invited to undertake the development of this on suitable terms.

The backward linkages with the location and skills of the workforce needs to be explored and adequate infrastructural services need to be planned and provided for in a time-bound fashion for ensuring sustainable development in this sector.

17.4.3 The Logistics Sector

As discussed in a previous paragraph, the location of Delhi and its history as a trading center have placed it at a pre-eminent position in the northern part of India. It also is major transportation junction - road, rail and air. With the three major road corridors - North-South, East-West and Golden Quadrilateral - passing through the State, the city would be even better positioned as a hub for transportation and logistics in the region.

The city already boasts of some of the largest mandis for vegetable, fruits, etc. The hinterland is also one of the major providers of fresh produce, apparel, leather, as well as engineering goods. The city needs to provide high quality infrastructure to complement its position as the logistics hub for the north. This could include creating multiple inland container ports at suitable locations,

along with upgrading its storage capacities like cold storage facilities (critical to fresh produce) and mechanized loading, unloading and handling facilities. Integrated goods storage and transportation systems --- which would extend from the points of entry to the airport / freight terminals --- need to be explored and suitable strategies and policies need to be implemented by the GNCTD.

17.4.4 Heritage & Tourism Sector

Delhi, considered as a historic city of potential World Heritage significance due to the unparalleled richness and diversity of its natural and cultural heritage, is also one of the most prominent tourist destinations in North India, and is perceived as the 'Gateway to North India'. Due to its location as an important node of both the Agra-Jaipur and Varanasi-Khajuraho circuits, Delhi received over 3 million domestic and international tourists in 2001-02. However, in comparison with other capital cities such as London, Rome and Paris, (comparable with Delhi in terms of historic significance and concentration of heritage resources), the potential for heritage tourism in Delhi is underutilized. BTA statistics and independent heritage economics studies indicate that London attracted almost 9 million visitors in early 2006, with monthly revenues of 3.9 billion pounds. Similarly, Paris, in 1996, attracted 12.129 million domestic and international tourists, motivated mainly by cultural reasons, generating 12.75 billion francs, and 43,000 jobs were created in that year alone.

Delhi's rich, multi-layered heritage needs to be considered as an economic resource or 'heritage capital', capable of enriching the quality of life of Delhi's inhabitants & stimulating development through growth of heritage tourism.

Innovative management strategies for the heritage assets of Delhi are required to ensure creation of employment opportunities linked to cultural tourism and provision of facilities for mid-range tourists in heritage areas. These strategies could include:

- Adaptive reuse of heritage buildings as affordable and safe accommodation for mid and low range tourists, *within significant historic areas*,
- Development of attractive thematic tourist circuits linking the various historic sites throughout the city, supported by a dedicated tourist transportation network of battery buses and other modes of transport.

Other facilities required are related to provision of well researched site signage, interpretive materials, publications and guides as well as for nurturing and development of crafts industries of the Old City.

As any growth in heritage tourism is dependent on conservation of the heritage resources, appropriate strategies for heritage management, area level conservation, and adaptive reuse of historic buildings, infrastructure provision and up gradation are essential. A combination of strategies for economic & physical regeneration of heritage assets such as the Walled City of Shahjehanabad, historic urban villages and numerous heritage precincts are required which would ensure the continued relevance of the heritage in contemporary life as well as enhanced employment, educational & recreational opportunities.

17.4.5 Education Sector

Delhi is a Mecca for education with students from all over the country and overseas making it a preferred destination for higher studies. With over 187,000 students on the rolls of its nearly 150 institutions of higher education, it churns out a large number of skilled and semi-skilled students every year. These provide the base for the growth of the industries in the city and its hinterland. However, with only 15 technical and 18 medical colleges the effective output of highly skilled workforce is only a fraction of the requirements.

The city and its hinterland (NCR) are poised to be one of largest conglomeration of professional services in the World, due to the globalization of services and the explosive growth potential it entails. This, along with the aspirations of its fast growing population, necessitates urgent expansion of the educational infrastructure in the city.

The Govt. needs to allocate adequate land for undertaking a major expansion in the educational infrastructure at all levels so as to meet the above growth requirements. These projects could be undertaken by the GNCTD or by inviting the private sector to participate in the process. Common facilities of a high standard for research and development (laboratories, libraries etc) require to be put in place. Innovative systems, such as an independent accreditation system for universities in the city could be explored

17.5 STRATEGY FOR CIVIC INFRASTRUCTURE DEVELOPMENT

17.5.1 Strategy for Water Supply

The following table presents an estimation of the gaps in water supply infrastructure:

Table 17.1 : Gaps in water supply infrastructure

S. No	Infrastructure	Year	Available	Required	Proposed Augmentation (already planned by DJB)	Shortfall
1.	Treated Water (MGD)	2006	715 MGD (installed cap.= 790)	990 MGD	(140 MGD Sonia Vihar WTP included)	275 MGD
		2011	940 MGD on completion of augmentation works (indicated by DJB)	1140 MGD	20+40 new WTPs + 45 MGD by recycling of process water at the existing WTPs+ Tube wells etc	200 MGD
		2021	940 MGD	1380 MGD	Construction & augmentation in WTP capacity depends on the construction of New Dams	440 MGD
2.	Water Storage Capacity (MG)	2006	175 MG	277 MG*		100 MG approx
		2011	329 MG	329 MG**	Augmentation proposed to achieve 35% storage	Nil - Subject to

					capacity	achievement of targetted augmentation
		2021	329 MG	483 MG	Augmentation proposed to achieve 35% storage capacity	Nil - Subject to achievement of targetted augmentation
3.	Distribution Network (kms)	2006	10, 000 kms	11,616 kms***		1,616 kms
		2011	11,250 kms	12,396 kms©	250 kms of bulk mains and some 1000 kms of distribution mains .	1,146 kms
		2021	11,250 kms	13,800 kms©		2,550 kms

(*) Based on 35% of installed WTP capacity

(**) 399 MG (for 1140 MGD)

(***) Urban Area of Delhi in 2006 is approx. 774 sq. Kms. Distribution network estimated @ 15 R. Kms (bulk and branch) per Sq. Kms of urban area

(©)Water mains in unauthorised colonies to be laid on payment of development charges subject to technical feasibility

The key issue in water supply in Delhi currently is the inordinately high level of “Unaccounted for Water”. While the per capita availability of water is sufficient to meet the requirements of the present day population, its management and distribution are such that up to 42 % of the water produced goes unaccounted for as much as 40% due to losses in transmission and distribution. Moreover, distribution is skewed, both within and between zones - from a bare minimum of 29 LPCD to a maximum of over 500 LPCD.

To improve the satisfaction level of consumers it is thus necessary / critical to take effective and urgent steps for reduction of losses in a time bound manner, and enhance the management of water supply. A series of projects have been proposed to this effect, including revamping and up-gradation of the internal water distribution network; a comprehensive leak detection study; and construction of UGR's and BPS's in different parts of the city in order to equalize distribution. For the DJB to know correctly the quantity of water produced, and distributed, and isolate areas of loss, metering at the WTP for incoming and outgoing supplies, and supplies to various UGRs is a necessity, and has been proposed. It is anticipated that the proposed GIS mapping of the water supply network will improve management efficiencies considerably.

While the city is currently well placed with respect to sources of supply, it will become necessary to augment these in the medium to long term. For this purpose, 20 high yield tube wells in the floodplains of river at Palla are proposed to be constructed, and the up gradation of Chandrawal Water Works and Construction of 8 MGD recycling plant at Chandrawal Water Works is proposed to be taken up. Supporting projects, such as new WTP's are also proposed. In addition, it is proposed to embark on the construction of storage

facilities in the upper reaches of river Yamuna so that the allocated water as per MOU between the basin states is uniformly available throughout the year². This will address long term requirements.

The water supply network needs to be extended to currently uncovered areas. Also, in order that pricing of water supplied may reflect the costs of treatment, storage and distribution, rates will have to be revised. However, prior to this, both supply, as well as response to customer problems has to be improved. Revamping of the Customer Care Services, in order to enable greater customer access to the service provider has been proposed. Moreover, it is anticipated that bulk metering as proposed above, coupled with improvements in energy consumption and effective metering at the consumer's end will facilitate proper revenue audits and promote a healthy financial status of the DJB.

Projects proposed under the water sector can thus be categorized under three strategies:

- to address water losses in transmission and distribution; and enhance overall management of distribution
- Augmentation of water supply from 790 to 919 MGD
- Promotion of efficiency in service delivery and strengthening of cost recovery mechanisms.

Table 17.2: Delhi Master Plan - 2021 (MPD-2021) estimates of water requirements

Norm	Quantum (in gpcd)	Quantum (in gpcd)	Source for Non - Potable water
	Potable	Non - Potable	
Domestic (@50 gpcd)	30	20	Recycling and permissible GW extraction at community level
Non Domestic (@Non Domestic 30 gpcd)	5	25	
Irrigation, horticulture recreational, Construction, Fire (@ 6.75 lpcd)		10	Recycling from STPs and permissible GW extraction
Public-semi public, Industrial, Commercial	5	15	Recycling from CETPs
Total (@ 80 gpcd)	35	45	

The Plan has split the water requirement in two parts: potable and non-potable as 35 & 45 GPCD respectively, with the proviso that

² Presently 580 MCM water is allocated during July - Oct out of a total annual allocation of 724 MCM.

“In the existing areas till the arrangement of non potable water is made, potable water shall be supplied. For urban extensions and areas under development schemes, these norms are recommended with necessary provisions.”

This entails laying a dual water supply system. If this is to be undertaken, it may require laying of around 15,000 kms of network requiring very high financial outlay. DJB is considering to have dual pipe system in a few new colonies as well as planned colonies and has provided a sum of Rs 30 crores in the draft 11th Five Year Plan. This has not been repeated for in the CDP.

No further mention, in terms of strategies or projects to bridge the gap in availability and requirement, is made in the Plan document.

17.5.2 Strategy for Sewerage

Table 17.3 Estimated gaps in sewerage infrastructure

S. No	Infrastructure	Year	Available	Required	Proposed Augmentation (already planned by DJB)	Shortfall
1.	Sewage Treatment Capacity (MGD)	2006	512.4 MGD	800 MGD		287.6 MGD
		2011	701.4 MGD (512.4 + 189 MGD) on completion of augmentation works.	912 MGD Estimated at 80% of water requirement in 2011(*)	189 MGD (As per DJB 11th five year plan, 2007 - 2012.	210.6 MGD (940-701.4) (**)
		2021	701.4 MGD	1104 MGD Estimated at 80% of water requirement in 2021	Capacity to be raised commensurate with augmentation in water supply	402.6 MGD
2.	Conveyance Network (kms)	2006	6831.54 kms (Internal sewers & Trunk sewers)	7016 kms		185 kms approx
		2011	6831.54 R. Kms	8264 R. Km (***)		1432.46 kms approx.
		2021	6831.54 + 250 + 600 = 7681.54 R. Kms	9200 R. Kms.	Further augmentation in sewer network depends upon changes in policy for laying sewers in unauthorised colonies ©	1518.46 kms approx.

* While the availability of treated water supplied by DJB will be less than this, it is assumed that use of ground water by individuals will be resorted to, to meet shortage in water supply

** A sum of Rs 700 crores is proposed in the CDP for augmentation in STP capacity. This is sufficient to construct 350 MGD cap. of STPs

*** Urban area of Delhi in 1999 was 701.6 sq. Kms. It is proposed to be 920 sq. Kms in 2021, a total increase of 218.4 Sq. Kms over 21 years, or an annual increase of 10.4 Sq. Kms. In 2011, the urban area will be approx. 826.4 sq. Kms. Sewerage requirement (trunk as well as branch) has been estimated @ 10 R. Km / sq. Km

© As and when work will be taken, it will be against depositing of development charges by the beneficiaries.

Currently, 512.6 MGD capacity of sewage treatment is available in the STPs existing at 17 locations. However the cumulative inflow at the STPs is only 346 MGD³, due to short-comings in the conveyance network. City sewage is often discharged into storm water drains, since sewers - even where available - are heavily silted. This balance sewage is discharged in to the river and is a cause of pollution of River Yamuna. It is thus critical to rehabilitate the conveyance network trunk and other sewers in order to ensure optimal utilization of the installed treatment facilities. Rehabilitation of trunk sewers in walled city area, north & west districts has been proposed, as well as the refurbishment of SPS's and revamping and up-gradation of internal sewers.

In addition, about 60 per cent of the population in the outer areas, urban villages and unauthorized areas are not covered by the sewerage network. The sewage from these areas and inner city areas also finds its way into the River. Provision of sewer network in currently inhabited, but un-sewered, areas is thus the second priority. This is not only necessary for the health of Delhi-ites but also of people residing in downstream reaches of the river, like Faridabad, Mathura, Agra etc. Increased coverage of the conveyance system will call for the augmentation of sewage treatment capacity to meet the entire generation of sewage present day sewage generation in the city is estimated at 800 MGD as against existing treatment capacity of 512 MGD. DJB is proposing the immediate augmentation of sewage treatment by 100 MGD by 2009.

There are 1432 un-authorized colonies where sewers cannot be provided as per High Court orders. This however is leading to pollution of river Yamuna, and it is proposed that the present policy be reviewed, as part of the pollution abatement effort. Another 1080 JJ Clusters are also adding to pollution on account of generation of wastewater. As per prevailing policy sewers cannot be laid in such areas. This policy also calls for a review, subject to the overall policy on slum settlements in the city.

Projects proposed to improve sewerage in the city are thus presented under the following strategies:

- Extension and up-gradation of sewage network to intercept sewage --- abatement of pollution
- Provision of sewer network in un-sewered areas
- Augmentation of sewage treatment capacity

³ Out of this, the 72 MGD STP at Keshopur is not performing to standards. Thus in effect only 346 - 72 = 244 MGD sewage is being treated.

As per draft MPD-2021, the projected requirement for Sewage treatment is 1328 MGD. The MPD-2021 further states "By the year 2021 entire Delhi should be served by regular sewerage system in a phased manner." It is recommended that "recycling plants of treated waste water and a plan for recycling of treated waste water to meet non potable water needs and conveyance system has to be laid to carry treated waste water from STPs to the areas for alternative uses"

As a result, DJB is contemplating to set up three treatment plants, each of capacity not less than 3 MGD, to treat sewage using membrane technology / RO technology at the STPs at Okhla, Papankalan and Rithala. The treated water would be supplied to potential customers (in the command area of the plants), for non-human consumption uses; use in household toilets; for cooling purposes in power plants, hospitals etc.; thereby effecting economy in use of potable water. Rs. 45 crores has been proposed in the Draft Five Year Plan (2007 -12) for the construction of these plants at the three locations mentioned above. This has not been repeated in the CDP.

17.5.3 Strategy for Solid Waste Management

Table 17. 4: Estimated gaps in SWM infrastructure

S. No	Infrastructure	Year	Available / Expected	Required (as per generation of SW)	Proposed Augmentation (By ULB itself)	Shortfall
1.	SWM Collection Facilities (Dhalaos / bins...etc. or total capacity available)	2006	Under PPP (MCD has privatized collection and transportation in 6 out of 12 zones. The balance zones are also under consideration for privatization. It is envisaged that gaps in these aspects will be met by the private sector in such a manner that required performance criteria are met.			
		2011	- do -			
		2021	- do -			
2.	SWM Transportation facilities (No. of trucks or total capacity available)	2006	- do -			
		2011	- do -			
		2021	- do -			
3.	SWM Treatment Facilities (TPD) - as % of generation	2006	975 TPD (14.33%) composting facility	6800 (MSW - 5000 + C&D 1800)	975 to 1075 TPD composting facility	5780 TPD
		2011	4975 TPD (MSW 3975 + C&D 1000) (55%)	9000 TPD (MSW - 6600 + C&D 2400)	-	4050 TPD (38% MSW, 58% C&D)

		2021	Processing capacity to be increased to take care of total generation through PPP	16000 TPD (MSW - 11800 + C&D 4200)	New facility to be developed to augment capacity	-
4.	SWM Disposal Facilities (TPD) - as % of generation and treated waste	2006	5400 TPD in open dumps (79.5%) (closure, capping and landscaping of these open dumps recommended)	5825 (in case 975 TPD is actually processed)		
		2011	30% of total generation including processing rejects	2700 TPD (provided above indicated processing facilities for MSW and C&D waste can be set up and made operational)		nil
		2021	25% of generation, provided the proposed site at Bhatti Mines or any other equivalent landfill space is available	4800 TPD (-do-)		nil

The key issues in Delhi with respect to solid waste management are:

- Efficient service delivery (collection and removal of garbage, construction and demolition debris and other types of waste, street sweeping etc.) leading to clean surroundings and feeling of well being amongst the citizens.
- Appropriate disposal of waste in conformity with the applicable rules; and most importantly,
- Strategy for reducing land requirement

Among the above, the most important concern currently is reduction in land requirement for disposal. In the absence of adequate land, the three landfill sites are being over-used, resulting in adverse environmental conditions in the

surrounding areas. As per the present situation, Delhi is actually in a very serious situation with respect to land required for processing and disposal of solid waste.

The strategies for reducing land requirement would be to maximize appropriate treatment of different waste streams, in order to reduce volumes of waste requiring being land-filled. It is proposed that the use of existing and proven technologies be maximized for this purpose, as well as new technologies are introduced, as elaborated below:

- The existing composting facilities may be re-engineered, revitalized and capacity augmented with technical inputs and marketing support
- Additional facilities for waste processing, including composting, and other processing technologies to the maximum possible extent should be installed (for example, dry combustible waste can be processed as refuse derived fuel)
- Processing and disposal facilities be developed for construction and demolition debris starting with pilot facilities

In addition to this, a massive and sustained campaign encouraging people to consciously reduce waste and segregate at source to facilitate waste processing would have to be undertaken.

In order to mitigate adverse impact to the environment, the immediate development of new sanitary landfills at identified sites (Jaitpur, Narela Bawana and Bhatti Mines - in that order) is proposed. Alongside this, the closure, capping and landscaping of existing dump-sites would have to be undertaken. This would have to be accompanied by a plan for disposal of waste during the intermittent period, before new sanitary landfills are commissioned and actually operated.

Improvement of service delivery is critical in ensuring that quality of the environment in the city is maintained. In order to build this, sustained training for all the municipal staff as well as staff of any private operator involved in waste management for their capacity building and planning capability, has also been proposed

Thus the two key strategies in solid waste management can be summarized as under;

- Maximizing effective treatment processes for different waste streams, in order to minimize land required for land fill sites
- Safeguarding the environment by ensuring well developed and sufficient land fill sites for disposal, and increasing efficiency of service delivery

The MPD 2021 makes the following recommendations with respect to solid waste management in the city (14.6, pages 110-111)

- Processing of MSW and recycling of construction and demolition debris (C&D) has been emphasized upon to minimize landfill space requirement

- Reservation of land for processing and disposal of solid waste in the Zonal Plans suggested
- The quantum of generation has been estimated, and

The CDP is in tune with the MPD 2021 in all of the above respects.

17.5.4 Strategy for Drainage

Table 17.5. Estimated gaps in drainage infrastructure

S. No	Infrastructure	Year	Available	Required	Proposed Augmentation (already planned by ULB)	Shortfall
1.	Total existing length of drains (kms) - natural plus man made	2006	25000 km	deemed sufficient		none
2.	Drains in need of rehabilitation	2006		100 kms	Remodeling and refurbishing of 17 major drains by MCD (ongoing)	Nil
3.	Additional drains required	2011	25250 kms	deemed sufficient	Master Plan for drainage to cover additional areas under preparation	Nil
		2021	25250 kms	3000 kms	Tentative, would be finalized from the Master Plan	3000 kms

Note: In the absence of reliable information, the above figures are based on estimates by the MCD.

The key issues in drainage are:

- Lack of comprehensive planning and maintenance due to multiple agencies in the city looking after storm water drainage - MCD, DJB and PWD.
- Combined storm water drains and sewer drains, mostly as a bypass arrangement for blocked sewer drains
- Neglect of the natural drainage basins and systems leading to water logging and even flooding
- Lack of coordination in planning and construction of roads and drains

In order to address the above, it is proposed that a comprehensive study of the storm drainage situation be undertaken. The last Master Plan for drainage was prepared in 1977, and still remains to be implemented. The study should be followed by comprehensive planning in a way which also addresses the inter-relationship with sewer lines so that the independent identity of each is maintained. A long term planning for 30 years slotted into 5-year phases needs to be done. A detailed project report (DPR) needs to be prepared based on the study, which would then be considered for implementation

- Creation of an appropriate authority to deal with the sewer drains, the storm water drains and the natural drainage basins of the NCT area. This authority should have a well equipped planning and design wing.
- Short-term repair and de-silting of all the drains on emergency basis
- Revival of the Natural drains on the line of South Delhi Greenways Project (proposed for Barapulla drain, which contributes to 3.69% of discharge into river Yamuna in the Delhi stretch)
- After commissioning and monitoring the functioning of the above project for Barapulla drain, a similar study should be made in the medium term for Najafgarh drain, which is by far the largest contributor in terms of discharge into river Yamuna (51.75%)

MPD- 2021 makes mention of the following with respect to drainage (14.4, pages 107-108)

- Drainage to be integral part of road development plan
- A proper database to be prepared and GIS based mapping and planning be promoted
- Development of sub-wells under flyovers for trapping storm water
- Pump houses in low-lying areas should be provided
- Remodeling of selected drains

The approach of the CDP has integrated the above points.

17.5.5 Strategy for Traffic and Transport

Of the various issues identified in the sector, those related to the public transport system are most critical. The public transport system in Delhi currently captures only 60% of the total trips made. As a result, private modes of transport have been increasing at a rapid pace, leading to increasing congestion, parking problems and air pollution. The share of the public transport system needs to be substantially augmented in order to account for 80% of trips, at least. This can happen with citywide coverage of public transport available from origin to destination with minimum interchanges. Keeping in view the travel demand and available right of way, an integrated multi modal public transport network is proposed for development in Delhi, which would include the high capacity metro rail , light rail transit , mono rail, bus system and IRBT systems. Metro corridors and IRBT corridors form a part of the existing work in progress, while the feasibility report for other corridors is in progress.

Vehicular emissions account for 67 % of the air pollution in Delhi. IT is further notable, that 2/3rds of the vehicles in the city are two-wheelers, operated on two-stroke engines, and carrying 1 - 2 passengers.

It is felt that cycles and cycle rickshaws can play an important role in reducing levels of pollution. Corridors with high usage of these modes need to be identified and developed to provide safe movement of these modes which can be very effective in short distance trips along sub arterial roads, local roads and

along major transport corridors near industrial nodes. The CDP identifies a few areas for development in order to promote these modes of transport.

More than 60 % of daily trips in the city have at least one part of the journey as pedestrian. Pedestrians are most vulnerable road users, and their safe movement is of paramount importance and needs to be given priority on road. Proposals for strengthening of foot-paths, and development of foot over bridges have been included in list of projects.

The road network accounts for about 21% of the total area, which is above average of 12 to 15 % for urban areas. This translates into a road density of 19.2 Km. per Sq. Km (for 1483 sq. kms); and 38 kms per Sq. Km, considering the current urban area of 750 sq. kms. Being already on the high side, this limits the potential for increase in road length. The overall approach is thus to increase the effective use of the available road network -- it is felt that the available infrastructure should be utilized optimally to ease the traffic on the roads in Delhi. The emphasis has to be on peripheral roads and roads in the trans-yamuna area. There is also a need for developing area level traffic control systems and traffic management plans to optimally utilize the available infrastructure. A few additional roads required, included elevated roads, and improvement of major intersections has been proposed. Proper management and regulation of parking spaces especially in and around the commercial centers is also important in this respect. There is also a need for devising measures to control the demand for parking as it is difficult to supply as per the increasing demand.

National Urban Transport Policy (NUTP)

As per the directives of the GOI- MOUD- UT - *the various proposals for urban transport being prepared under JNNURM should comply with NUTP in order to be eligible for Central Govt. funding.*

The focus of NUTP is on the following strategies :

1. Equitable allocation of road space - with people as focus
2. Priority to the use of Public Transport
3. Integrated public transport systems
4. Priority to non motorised transport
5. Promote multilevel parking complexes
6. Create public awareness

Delhi CDP priorities and projects have been identified based on above guidelines of NUTP.

Connaught Place and the walled city are important commercial centers as well as sites of heritage importance. To retain the character of these central business districts of the city, special schemes for redevelopment of these areas have been proposed. Delhi being a major trading center for the whole of North India, attracts a lot of regional visitors and goods traffic. In order to cater to these, development of decentralized passenger and goods terminals based upon directional needs of travel on the periphery of the city itself (so that inner parts of the city can be relieved of the traffic load) has been proposed.

The overall goal of the proposals made in the CDP is to provide, promote and ensure safe, economic, and efficient movement of all categories of passenger and goods vehicles, with a focus on the provision of an environment friendly integrated multi modal transport system for Delhi urban area. In order to achieve this, projects have been proposed under the following broad strategies:

- Provision of safe and efficient public transport system

- Encouraging the use of non-motorized modes of passenger transport
- Equitable use of space on road and priority to pedestrians
- Efficient use of existing infrastructure - removal of impediments - including enhancement of road infrastructure and provision of efficient parking facilities
- Redevelopment of Connaught Place and Walled City as special areas
- Development of goods and passenger terminals on the basis of directional needs
- Enhancement of Road Infrastructure
- Awareness and enforcement drives

Table 17.6 Integration of proposals contained in MDP-2021 with Strategies for Transportation

MASTER PLAN REFERENCE	INCORPORATION INTO CDP (THROUGH RELEVANT STRATEGY)
Promote public transport through planning	Capacity building of Public Transport system Projects A (i), (ii) and (iii) - all recommended in MPD-2021
Develop Integrated Multi modal Public Transport System including, MRTS, LRT, HCBS, etc	Capacity building of Public Transport system Projects A (i), (ii) and (iii) - all recommended in MPD-2021
Give priority to the safety of pedestrians on the road.	Provide Equitable Use of Space on Roads, and Priority to Pedestrians Project G (i) - recommended in MPD-2021 Project G (ii) and (iii)
Optimal utilization of existing road network and full development of ROW	Full Development of ROW of Roads Projects E (i) & (ii) - as per MPD - 2021 Recommendation Projects E (iii) - E (vxx)
Identification and Development of Urban Relief Roads	Develop New Roads and Bridges as New Link Roads Projects C (iii) and (iv) - as per MPD-2021 All projects under strategy
Development of comprehensive parking policy.	Management and Creation of New Parking Areas Projects F(i) and (iii) Project F (ii)
Provision of directional goods and passenger terminal.	Development of Passenger and Good's Terminals based on Directional Needs Projects B (i) and (ii) - as per MPD-2021
Create awareness and enforcement	Create Awareness and Enforcement Drives Projects J(i) and (iii) - as per MPD-2021 J(ii)

<p>Specific Project recommendations (which have been incorporated under Various Strategy Heads in the CDP, among other relevant projects)</p>	<p>Under Strategy Head "Prepare Special Intergated Schemes for ovement in CP and Old City Area"</p> <p>i) Improvement Major intersections like Ajmeri Gate, Fountain Chowk, Kaudia Pal, Khari Baoli etc. at 15 locations</p> <p>ii) Pedestrianisation of inner circle in Connaught Place including parking below inner circle</p> <p>iii) Pedestrianisation (partial) Chowk Area with heritage considerations</p> <p>Under Strategy Head "Encourage Use of IPT and Non-motorised Transport"</p> <p>i) Provision of Cycle Tracks at Sub-Arterial & Local Level roads and streets new areas and urban extensions</p> <p>(ii) Road improvements for use of cycle rickshaw in Karol Bagh/Lajpat Nagar and Trans Yammuna Area</p>
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In addition to the above, the Master Plan also recommends the following:

- Expansion and strengthening of Ring rail and suburban rail system - however, the planning and implementation of rail transport lies with railways dept.
- Quick and efficient transport network between NCR & NCT of Delhi - this is already being implemented through schemes, as mentioned below: Faridabad - Noida - Gaziabad - Kundli , or the Eastern Peripheral Expressway with a total length of 106 Km., being implemented by an SPV formed by NCRPB,MOUD, ILFS and State Govt. of Haryana , U.P. and Delhi.
- Palwal - Manesar - Kundli, or the Western Peripheral Expressway, being implemented by NHAI
- rail projects for commuter travel, identified as a part of regional rapid transit system. The priority corridors in the projects include Delhi-Palwal, Delhi - Panipat, Delhi - Gaziabad. Besides these, it is proposed to extend the metro corridors to NOIDA and Gurgaon to cater to the travel demand between Delhi and NCR towns. These projects are under various stages of implementation.

17.5.6 Strategy for Urban Heritage

The City Development Plan recognizes the importance of the cultural and natural heritage of Delhi as a resource or as 'Cultural Capital Assets'. These heritage resources, of great value, not only enrich and enliven the fabric of the contemporary city, contributing to its distinctive identity as a globally significant capital city through the ages, but also represent tremendous (and unutilized) latent potential for macro-level city environmental improvement, community level economic regeneration and revenue generation.

The CDP puts forward a set of inter-related strategies for ensuring the integration of these invaluable cultural assets within the sustainable development process for Delhi, based on appropriate, participatory conservation programmes and comprehensive heritage management frameworks and plans. . The necessity for ensuring the continued, enhanced relevance of these heritage resources within the life of the community is recognized: the CDP strategies seek to ensure that the traditional links between the natural and cultural resources and the inhabitants are enhanced and strengthened, through

primarily community based conservation processes, in order to improve Delhi’s environment.

The overall vision for heritage management in the city can be stated as follows: “To reintegrate the natural and cultural heritage of Delhi within the overall development planning process for Delhi, and to ensure environmental up-gradation, enhancement of heritage significance and improvement of the quality of life within the historic areas in a defined time frame.”

This is to be achieved through supporting the development of sustainable heritage management systems and frameworks which ensure a synergy between the activities and responsibilities of various agencies entrusted with the heritage; initiating comprehensive and mutually supportive processes of conservation, restoration, adaptive reuse, environmental up-gradation, heritage tourism and awareness generation, heritage information management and capacity building which will result in the utilization of the latent potential of the heritage resources of Delhi.

The following main strategies have been identified, and projects suggested under each:

1. Capacity Building & Provision of Technical Support for Conservation & Heritage Management
2. Heritage Resource Information Management System for integration of heritage concerns within the development plans - Master Plan, Zonal, Sub-Zonal, Area Level
3. Area Level Conservation, revitalisation and Regeneration strategies which include supportive and linked sub-strategies for adaptive reuse,
4. heritage sensitive infrastructure up-gradation, provision of essential community facilities, commercial areas, guidelines for new development in historic areas, strengthening of linkages with surrounding contemporary development
5. Strategies for heritage tourism, enhanced visitor experience and revenue generation, and awareness generation.

The integration of the proposals contained in MDP-2021 into these strategies is presented in the table below. For specific project details, refer Annexure 17.1.

Table 17.7: Incorporation of MPD- 2021 proposals into Strategy for Urban Heritage

MASTER PLAN REFERENCE	INCORPORATION INTO CDP (THROUGH RELEVANT STRATEGY)
Maintain and update a heritage database	Development of an information Management System - Project A(i)
Develop organizational capacity for heritage management	Capacity building and provision of technical support for conservation Project A. (ii)
	Establishment of a Self-Sustaining Technical Support Conservation Centre

	Projects B.(i) & B.(ii)
<p>6 heritage zones, including the entire Walled City of Shahjehanabad and three Archaeological Parks. Prepare guidelines for development, redevelopment, additions, alterations, repairs, renovations and reuse of heritage buildings</p> <p>HERITAGE ZONES Nizamuddin and Humayun's Tomb Complex. Mehrauli area Chirag Delhi. Lutyens Bungalow Zone Shahjahanabad i. Specific heritage complex within Walled City of Delhi, The Zonal Development Plan prepared by the DDA for the Walled City of Shahjehanabad (Part Zones A & C), approved 1999</p>	<p>Projects for area level conservation, revitalization and regeneration, prioritisation of identified heritage zones and precincts Adaptive reuse of buildings or precincts Heritage sensitive infrastructure up-gradation</p> <p>Projects C (i), C (II), D(i)</p> <p>Projects C(iii), C(iv), C(v), C(vi a.), C(vi b.), C(vii), C(viii), C(ix) , D (i), D(ii), E(iv).</p>
Implementing programmes for education and awareness	<p>Strategies for heritage tourism, enhanced visitor experience and revenue generation, and awareness generation activities.</p> <p>Reintegrating previously overlooked heritage components into thematic heritage tourism circuits</p> <p>Projects e(i) e(ii) Awareness generation Project e(iii)</p>

17.5.7 Strategy for Environmental Management

The unsustainable patterns of prolific urban growth, production and consumption have caused the tremendous deterioration in the natural environment of Delhi. Though endowed with ample natural resources, Delhi has brutally destroyed its bounty continuously. The damage is irreparable --- the only hope being to manage and rejuvenate depleted resources. This exercise of managing and systemizing has to be air tight and consistent without any scope for faltering. The overall strategy of aiming for environmental sustainability has to start with sound planning, designing, implementing, monitoring and rectifying. Therefore a robust and effective environmental management system has to be put in place with one coordinating authority having the overall responsibility.

Although several studies, white papers and action plans have already been prepared by renowned authorities in Delhi, what glares starkly at the citizens of Delhi is the lack of implementation, enforcement and accountability of the programmes discussed repeatedly in these studies. All proposed programmes have to be time bound with strict monitoring and a single point responsibility and accountability.

This broad strategy has to be complemented by initiatives at resource-use reduction, waste minimization and pollution prevention.

While the degradation of forests and green cover has reduced over the last few years, many more efforts are required to conserve existing forests. Improved coordination amongst the several agencies responsible for the forest area is required. Encroachment of the forests and ridges is a serious concern and this can be regulated only by strict policing by the concerned authorities. A GIS database of natural resources in the city has been proposed in order to facilitate this. An issue of concern is the a complete lack of inventurisation of the flora and fauna of the city, and a study in order to document this has been proposed.

Another area of concern is air pollution, which needs to be reduced in Delhi. The major contribution to the air pollution in the city is from the traffic pollution followed by industrial and then the domestic pollution. The reduction in air pollution measures are multi agency and would be linked to automobiles, power plants, domestic and commercial diesel generating sets, open burning, industrial operations and others. Indirectly this would be the responsibility of the automobile manufacturers, oil companies, generator manufacturers and others to incorporate designs and specifications which would reduce air pollution. Some of the major strategies for the reduction in the air pollution are:

- Vehicular emissions to adhere to the Euro Norms.
- Fuel quality specifications (unleaded petrol, reduction of sulphur in diesel, benzene in petrol) have to be followed
- Quality control on the lubricants
- Phasing out of old vehicles
- Further promotion of the usage of CNG
- Improvement in the quality of CNG like reduction of benzene
- Better roads and wider built up area of the roads. No kuchha road margins to reduce the dust emissions.
- Integrated multi transport system to reduce traffic congestions
- Better traffic control and stricter enforcement of P.U.C
- Ban on open burning of leaves, tyres, wood and other things
- Increase of greenery

Further augmentation of the continuous air pollution monitoring system is also proposed under the CDP.

In terms of water pollution, the strategy focuses on reduction of surface water pollution mainly in the river Yamuna. This has been covered in the two Yamuna

Action Plans. An effective time bound implementation of YAP II could achieve the required improvements. Lessons learnt from the YAP I should be included in the YAP II and the YAP III which is in the pipeline.

YAP II has focussed on preparation of master plans and DPRs for the non point sources of pollution, including the dhobhi ghats, crematoria, dairy farms, slaughter houses and slum rehabilitation. Further augmentation of the plans and schemes under YAP II have been proposed under the CDP, including studies related to surface water bodies and recharge of ground water. Proposals for augmentation of ground water monitoring have also been proposed.

Although there is a huge requirement for control and treatment of water, the city needs to practice cleaner best management practices to minimize water pollution and conserve water. For this community participation and creating awareness amongst the citizens is imperative. Awareness of the regulations relating to noise pollution in the city also has to be created and promoted amongst the citizens. Projects targeting both these areas have been included.

If the overall environment of the city improves there would be decrease in the incidence of the disease related to the pollution. Awareness drives amongst the community, to adopt measures to keep their surroundings clean so that the incidence of diseases can be controlled, have also been proposed.

Thus the main strategies, under which projects have been proposed, relate to:

- Outreach and capacity building
- Enhancement of forests and green cover
- Mitigation of air, water and noise pollution

Table 17.8: Integration of Proposals contained in MDP-2021 with Strategies for Environmental Management

MASTER PLAN REFERENCE	INCORPORATION INTO CDP (THROUGH RELEVANT STRATEGY)
i) Management of Natural Resources and the related environment infrastructure and services in a manner that would lead to optimization of use of natural resources, reduction/abatement of pollution ii) Conservation and Development of the natural features with a view to enhancing their environmental value iii) Protection of the Ridge	A Outreach and Capacity Building i) Create awareness for water conservation and the techniques, training programmes for the RWAs, display & promotional material & schools, hospitals, change institutions. B. Forest & Green Cover ii) Detailed study of the biodiversity and ecology of the city. To include a complete inventorisation of all the species of flora and fauna (iii) Protection of Delhi ridge iv) GIS based Database of natural resources of the city
iii) Development and preservation of open spaces, greens and landscape/recreational areas	B. Forest & Green Cover i) South Delhi Greenway Project

Air i) issue of air pollution	C. Mitigation of Air, Water and Noise Pollution i) Installation of 9 web linked continuous air quality monitoring stations
River Yamuna Cleaning/ rejuvenation of River Yamuna	C. Mitigation of Air, Water and Noise Pollution i) Action projects of the Master Plan for Dhobighats Sudhar Yojna under the YAP II. ii) Upgradation of the crematoria in the city to make them environmentally better (air pollution treatment equipment). Master plans under the YAP II to be implemented iii) River Front Development including walkways, recreation facilities, kiosks, water sports etc
Ground water i) quality 2) recharge through rain water harvesting	C. Mitigation of Air, Water and Noise Pollution i) Installation of 2 water quality stations for monitoring and gauging. ii) rain water harvesting already a part of the building regulatory framework so not considered in CDP

17.6 STRATEGIES FOR HOUSING AND INFRASTRUCTURE PROVISION TO THE URBAN POOR

An estimation of housing gaps for the urban poor, as per the Draft MPD-2021, is presented in the tables below:

Table 17.9: Estimation of Housing Gaps - MPD 2021

S. No.	Estimation	Number (in Lakh DU's)
1.	Additional Housing Stock Required	
	(a): Housing for additional population	20.0
	(b): Backlog*	4.0
	Total	24.0
2.	To be developed in NCR (20%)	4.8
3.	New Housing	
	(a): through redevelopment and upgradation of existing areas of Delhi (40%)	9.6
	(b): through new housing areas (40%)	9.6
	Total	19.2
4.	Requirement of New Housing for the Urban Poor (estimated at 50 %), 2001-2021	9.6
5.	Annual Requirement of DU's for Urban Poor**	.48

* Break-up: 1 lakh DU's net shortage; 3 lakh DU's dilapidated and kutcha structures requiring replacement

** Through slum and JJ housing, up-gradation of old traditional areas; employers and industrial housing; group housing; infills in unauthorized regularized colonies

Table 17.10: Indicative Description & Requirement of Housing Types for the Urban Poor

S. No	Housing Type	% of total	as Proposed Development	Annual Requirement
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		proposed in MPD-2021	Agency	(in DU's)
1.	Slum and JJ	25	Public Agency, Private Agency, Co-op Society	24,000
4.	Employer Housing	4	Central / State Govt.	3,840
5.	Unauthorised Regularised Infill	15	Co-op Society Resident's Assoc. Private Agency	14,400
6.	Other Housing Areas, Upgradation of Old Areas, Traditional Areas, Villages	6	Public Agency, Private Agency, Co-op Society	5,760
	TOTAL			48,000

Notwithstanding the above, a review of the implementation levels of various Master Plans clearly reveals that the poor in the city have been consistently under-provided for in terms of shelter. Even targets that have been set by the development agency itself ---- on the basis of projections that have been far exceeded in reality --- have not been met even to the extent of 50 %.

Several studies have established that the poor are an integral component of the city economy, providing goods and services that enable city functions to be carried out efficiently at costs that are lower than would otherwise be incurred. Studies reveal that up to 60 % of recent migrants are absorbed into the service sector of the city's economy, including trade, hotels and restaurants; transport and storage, and personal services. That they have to co-exist in the city, with a dignified standard of living, and have to be provided for accordingly, was a fact recognized by all segments of stakeholders consulted in the process of preparing this CDP.

Strategies for the urban poor proposed in the CDP are based on key observations and assumptions. Foremost among these is that the legal and formal integration of poorer segments of the population into city development will substantially enhance the economy and functioning of the city by virtue of stabilizing the provision of key services currently being provided by the poor required in the formal sectors of the economy. The provision of legal housing options plays a critical role in this respect. Furthermore, provision of legal housing options must be undertaken in a manner that treats the poor as a segment of the housing market with different needs and abilities, rather than as a special group, located outside the housing market, as the poor are currently viewed. Shelter options offered to this segment must thus be tailored to the needs and abilities (to pay) of the poor, with minimum required levels of subsidy (the cost of land will, in all probability, require to be subsidized to a fair extent).

Strategies are also derived from the established fact that the poor are not a homogenous group, and vary widely in their requirements of shelter. This takes into account factors such as extent of consolidation in the city, location sensitivity, physical requirement, ability to pay as well as tenure security. Shelter options may vary from a single bed and locker in a dormitory for the

male migrant, to an independent unit. The ability to exercise choice, with a variety of options, is thus, important, in the success of any programme to provide shelter for all categories of the poor. Pricing, location, and tenure conditions are critical considerations:

- Price is an important factor to balance supply and demand⁴, determine extent of provision (in physical terms) and determine location.
- It is also noted that perceived security of tenure is accorded higher importance than ownership per se.

As a result, the approach to slums and JJ clusters, whether through in-situ redevelopment or relocation, without security of tenure and financial assistance has not resulted in improving the living conditions of poor in a sustained manner. Equally, the granting of outright ownership at a price below market value⁵ (with or without conditions) has also proven to be quite unsuccessful in most cases.

The overall framework, on the basis of which strategies and projects have been elaborated, thus include

- To provide a range of shelter options to the urban poor --- from beds, single rooms and dwelling units at various locations in the city.
- To provide long term security of tenure, whether through ownership, or a long-term leasehold system (without a sub-clause). To link this to location (refer below)
- To maximize in-situ redevelopment of slum and JJ clusters currently existing in the city. Redevelopment would consist of G+1 and G+2 structures (flatted), with common, as well as individual infrastructure services. To offer the redeveloped units whether rooms, or flatted units on a leasehold basis. The terms of the lease agreement would require to be established on the basis of the upgrading programme. An option to buy the lease after 10 or 15 years could also be included, as has been so done in the Philippines National Slum Improvement Programme.
 - Tenure will be common in the name of the cooperative, association of allottees or a managing trust. Forms of group tenure, collective tenure, cooperative tenure etc need to be looked into
 - Tenure will be allotted in the joint name of the head of household and spouse
 - Low cost housing within affordable range may be offered for accommodating some of the willing slum dwellers to reduce densities on slum site.
 - Transit tenements to accommodate slum dwellers while in-situ up gradation work is taken up.

⁴ The laws of demand and supply put a constraint on demand at a given price. However, at a very low price, the demand will be infinite, and no amount of supply can match the demand. Price thus balances supply and demand of a specific housing option.

⁵ Representing a subsidy that the poor cannot sustain

- To offer sites, on an outright purchase basis, at peripheral locations in the city, ensuring that these sites have adequate infrastructure and good connectivity to work areas in the city. Development of infrastructure may be incremental, in order to keep costs of development down.
- Under relocation the recovery may be subsidized, to limited extent, as compensatory measure for the price of displacement and subsequent rehabilitation. In case of in-situ development no such provision of subsidy should be provided to slum dwellers, who will be required to meet the cost of land as borne by the development agency, at the time of acquisition.
- The above two strategies (flats on lease hold basis in the city; and plots on ownership basis in the peripheral areas) are to be complemented by an on-going provision of dwelling units for the poor, in order to meet projected demand. The cost and location of these should be sensitive to the requirements of the target group. Simultaneously, housing supply to other segments of the population should be stepped up in order to meet demand, to ensure that units meant for the poor remain within the segment.
- To enable private sector (including commercial entities, NGO's and trusts) participation in development of the options outlined above. With respect to in-situ rehabilitation, the private sector may be involved by offering part of the land for commercial development (on suitable sites). Alternatively, enhanced development rights may be offered to private parties at other sites, as incentive to undertake development for the in-situ redevelopment of sites occupied by slum dwellers (as has been done successfully in Mumbai). NGO's and trusts must be used as intermediaries to reach finance to the poor in the case of in-situ rehabilitation; and housing micro finance options must be developed in order to do the same for plotted developments on the city periphery. These issues are elaborated upon subsequently.

The emerging strategies are thus

- In-situ rehabilitation at existing slum and JJ cluster sites, with units offered on a long term lease hold basis (with option for purchase), through a cooperative, trust, NGO etc.
- Development of serviced plots, to be upgraded incrementally, at out-lying locations, for outright purchase. Connectivity to work centers to be assured.
- Development of night shelters in the city as well as at outlying locations single beds, single rooms with shared facilities for long term stay managed by trusts, or NGO's with government support
- Infrastructure up-gradation in 44 resettlement colonies
- Reconstruction of government owned Katras in the walled city.

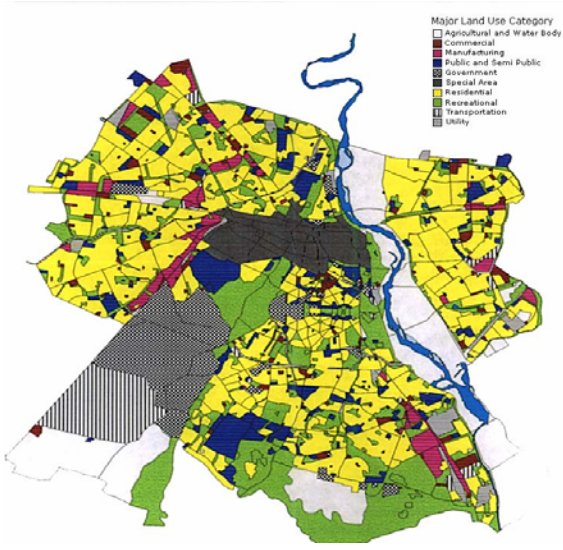
ANNEXURE : 17.1

**INCORPORATION OF MASTER PLAN DELHI-2021
PROPOSALS INTO CDP**

MASTER PLAN REFERENCE	INCORPORATION INTO / REFLECTED IN CDP (THROUGH RELEVANT STRATEGY)
<p>Maintain and update a database MPD 2021, in its section 10 on Conservation of Built Heritage mentions 170 (sic) ASI protected monuments, as well as lists of heritage buildings published by the MCD, NDMC and the State Department of Archaeology. Close coordination and cooperation is required from agencies such as the ASI, GNCTD State Department of Archaeology, NDMC, MCD, Cantonment Board and DDA</p>	<p>DEVELOPMENT OF AN INFORMATION MANAGEMENT SYSTEM A(i) Development and maintenance of a GIS based Cultural Heritage Information System integrated with overall land information management system.</p>
<p>Develop organizational capacity for heritage management</p>	<p>CAPACITY BUILDING AND PROVISION OF TECHNICAL SUPPORT FOR CONSERVATION A. (ii) Capacity Building of employees of the departments involved in heritage conservation (iii) Provision for recording excavated remains and removal of artifacts to museums</p> <p>ESTABLISHMENT OF A SELF-SUSTAINING TECHNICAL SUPPORT CONSERVATION CENTRE B. (i) Capacity building and provision of technical assistance by trained, qualified heritage professionals to owners of heritage buildings as well as buildings located within designated heritage zones- Mehrauli and Shahjehanabad B. (ii) Ensuring Technical Support for conservation required for at area level</p>
<p>MPD-2021 also identifies 6 Heritage Zones, including the entire Walled City of Shahjehanabad and three Archaeological Parks. It states that each local body / land owning agency should formulate 'Special Development Plans' for the conservation and improvement of listed heritage complexes and zones. Prepare guidelines for development, redevelopment, additions, alterations, repairs, renovations and reuse of heritage buildings</p>	<p>AREA LEVEL CONSERVATION, REVITALIZATION AND REGENERATION PRIORITISATION OF IDENTIFIED HERITAGE ZONES AND PRECINCTS ADAPTIVE REUSE OF BUILDINGS OR PRECINCTS HERITAGE SENSITIVE INFRASTRUCTURE UP-GRADATION</p>

<p>Heritage Zones Nizamuddin and Humayun's Tomb Complex. Mehrauli area Chirag Delhi. Lutyens Bungalow Zone</p>	<p>C(i) Development and implementation of a comprehensive regeneration and heritage management plan- Central Bazaar spine of Mehrauli; Adham Khans Tomb to Sohan Burj (Development of heritage area) C(ii) Community based Heritage Management Plans for the Dargahs/ traditional Pilgrim destinations of Delhi (Development of heritage area) D (i) Adaptive reuse of derelict 'havelis', heritage buildings, evacuee properties of heritage significance in 'shikargahs' in rural villages for provision of essential community facilities</p>
<p>i. Specific heritage complex within Walled City of Delhi,</p> <p>The Zonal Development Plan prepared by the DDA for the Walled City, Shahjehanabad (Part Zones A & C), approved 1999, identifies 6 'control zones' as Conservation Areas, urban design interest areas, protected monuments and other buildings for conservation, and also suggests the preparation of area by area 'urban renewal plans'.</p>	<p>C(iii) Upgradation of open space structure along with urban landscape of the walled city (Regeneration of old inner city area) C(iv) Area regeneration scheme for chowks and interface between historic components of the city with the Metro Stations (Regeneration of old inner city area). C(v) Heritage Management Plan and guidelines for development of the area around the Old Delhi Railway Station C(vi a. Guidelines for integrated conservation management of the area between Red Fort, Jama Masjid, Chandni Chowk and Darya Ganj C(vi) b. Revitalization of surroundings of Jama Masjid) C(vii)Restoration of Town hall and preparation of comprehensive heritage plan C(viii) Rehabilitation of historic and traditional housing stock within designated heritage zones and precincts (Regeneration of old inner city area) C(ix) Revitalization of inner (Old) city area - Shahjehanabad D (i) Adaptive reuse of derelict 'havelis', heritage buildings, evacuee properties of heritage significance in Shahjehanabad and D(ii) Retrofitting of services and rationalisation of space utilisation in heritage buildings currently used for community purposes E(iv) Adaptive reuse of heritage hotel at Kashmiri Gate</p>
<p>Implementing programmes for education and awareness</p>	<p>STRATEGIES FOR HERITAGE TOURISM, ENHANCED VISITOR EXPERIENCE AND REVENUE GENERATION, AND AWARENESS GENERATION ACTIVITIES.</p> <p>REINTEGRATING PREVIOUSLY OVERLOOKED HERITAGE COMPONENTS INTO THEMATIC HERITAGE TOURISM CIRCUITS</p>

	<p>E(i) Development of thematic heritage tourism circuits as an integrated network with signage systems, heritage site linked interpretation centres/ site museums, tourist facilities, low speed circuit transport for tourists - battery buses, bicycle tracks</p> <p>E(ii) Revival and Revitalisation of historic water Systems and buildings including Baolis, Embankments, Sluiceways, Talaos, Catchment areas, Hauz, Sarais and Kos Minars of Delhi</p>
	AWARENESS GENERATION
	<p>E(iii) Awareness generation materials and educational tools to enable children to form cognitive maps of Historic Delhi - linked with curriculum of Delhi schools</p>



Chapter – 18 : Investment Framework



CHAPTER - 18 INVESTMENT FRAMEWORK

18.1 INTRODUCTION

The investment options projects to achieve the long term vision and strategies are done based on the assessment of short, medium and long term strategies. The chapter has been divided in to two parts. Part A describes the sector wise projects and investments for Sub-Mission-1: Urban Infrastructure and Governance and Part-B describes the investments for Sub-Mission-2: Urban Poor and Housing.

18.2 SECTOR WISE INVESTMENT OPTIONS

Sub-Mission-1: Urban Infrastructure and Governance

The sectors covered in **Sub-Mission-1: Urban Infrastructure and Governance** are (i) Water Supply; (ii) Sewerage and Sanitation; (iii) Storm Water Drainage; (iv) Road Network and Transport Projects; (v) Solid Waste Management Projects; (vi) Redevelopment of Core City Area; (vii) Heritage Conservation and (viii) Urban Governance. The investments to meet the normative requirement are presented below.

18.2.1 Water Supply

The water supply system in city has 50 per cent transmission and distribution losses and skewed inter & intra zone water distribution pattern. The strategies to overcome issues earlier are (i) Reduce Transmission and Distribution Loss (ii) Augmentation of Water Supply; and (iii) Efficiency in Service Delivery and cost recovery mechanism (Table 18.1).

Table 18.1: Investment Options-Water Supply (2021)

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
A) REDUCE TRANSMISSION & DISTRIBUTION LOSSES AND EFFICIENCY IMPROVEMENT				
(i) Revamping and upgradation of internal water distribution network and pumping stations	75	-	-	75
(ii) Coverage of new colonies in outer areas of city	25	30	50	105
(iii) Interlinking of WJC with Wazirabad pond Laying of 2000 mm dia pipeline for supply of raw from WJC to Wazirabad pond	187	-	-	187
(iv) Supply and	30	10	2	42

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
Installation of Bulk and Consumer Meters				
(v) Modernization and up gradation of laboratory	20	-	-	20
(vi) Leak Detection Study	1	-	-	1
(vii) Energy Efficiency Study	2	-	-	2
B) AUGMENTATION OF WATER SUPPLY FROM 790 MGD TO 919 MGD				
(i) Construction of New Water Treatment Plants				
(a) 31 MGD Iron removal Plan	696	-	-	696
(b) 20 MGD WTP at Okhla				
(c) 40 MGD WTP at Dwarka				
(ii) Construction of 21 Nos. High Yield Tube wells in flood plain area of river Yamuna	1	-	-	1
(iii) Upgradation of Water Works- Chandrawal	35			35
(iv) Construction of UGRs/BPS in Various Part of Delhi	250	-	-	250
(v) Construction of 8 MGD recycling plants Chandrawal	20			20
(vi) To Connect UGR with Plants transmission lines of varying size-250kms	200	-	-	200
(vii) Construction of 1 MGD WTP at common wealth games village along with arrangement of raw water (To be achieved by 2009)	20	-	-	20
(vii) Explore Raw Water Resources, the surcharge of aquifers	50	-	-	50
C) EFFICIENCY IN SERVICE DELIVERY AND COST RECOVERY MECHANISM				
(i) Revamping DJB Customer Care Services Installation of system software for billing and customer information	20	-	-	20
GRAND TOTAL IN Rs CRORE	1632	130	122	1884

18.2.2 Sewerage System

Around 60 per cent population in outer areas, urban villages, unauthorized areas are not covered by the sewerage network. The sewage from these areas and inner city areas find its way into the storm water drainage. The strategies

to improve the sewage disposal system in the city are (i) Extension and Up gradation of sewerage network; (ii) Provision of Sewer Network in unsewered area; (iii) Augmentation of Sewage Treatment Capacity. Table 18.2 presents the investment options for sewerage system.

Table 18.2: Investment Options-Sewerage System (2021)

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
A) EXTENSION AND UPGRADATION OF SEWERAGE NETWORK FOR INTERCEPTING SEWAGE TO CONVEY TO STPS-POLLUTION CONTROL AND ABATEMENT OF POLLUTION				
(i) Revamping and up gradation of internal sewerage network including replacement of Old Sewer line	125	-	-	125
(ii) Refurbishment of Sewage Pumping Stations- 6Nos	20	-	-	20
(iii) Rehabilitation of Trunk Sewers in walled city area, north and west districts excluding trunk sewer under YAP-II	450	-	-	450
B) PROVISION OF SEWER NETWORK IN UNSEWERED AREA				
(I) Provision of Sewer in left out portion of colonies and rural villages	120	-	-	120
(ii) Laying of 250km of trunk sewer network to cater to uncovered area (regular colonies)	75	-	-	75
(iii) Provision of Sewerage Network in 30 urban villages	45	-	-	45
(iv) Provision of Sewerage Network in Unauthorized colonies	400	935	935	2270
(v) Diverting the sewer from uncovered area by constructing Sewage Pumping Stations (SPS) Punjabi Bagh, Nangloi extn, Preet vihar, Yamuna vihar and Jivan vihar	100	-	-	100
(vi) Laying of trunk sewers	70			70
C) AUGMENTATION OF SEWAGE TREATMENT CAPACITY				
(i) Construction of New STPs (Refer iii)	700	-	-	700
(ii) Construction of	150	-	-	150

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
Sewage Pumping Stations (Refer iii)				
(iii) Laying of Trunk Sewers (Interceptor along drain)	500	500	500	1500
TOTAL	2755	1435	1435	5625

18.2.3 Road Network and Transportation System

The strategies for improvement of road network and transportation system of the city are (i) safe and efficient public transport system; (ii) encourage use of intermediate public transport and non-motorised passenger transport; (iii) equitable use of space on roads, and priority to pedestrians; (iv) efficient use of existing infrastructure and provision of efficient parking facilities (v) redevelopment of Connaught Place and the Walled City Areas as special areas (vi) development of passenger and goods terminals based on directional needs (vii) enhancement of road infrastructure(viii) undertake awareness and enforcement drive. Table 18.3 presents the investment options for sewerage system.

Table 18.3: Investment Options-Transport System and Road Network (2021)

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
A. CAPACITY BUILDING OF PUBLIC TRANSPORT SYSTEM				
i) Developing Light Rail Transport System - 74 km	2800	2320	800	5920
ii) Developing Monorail System - 48 km	2400	1440	-	3840
iii) High Capacity Bus System -294 km.	1305	420	2685	4410
B. DEVELOPMENT OF PASSENGER AND GOODS TERMINALS BASED ON DIRECTIONAL NEEDS				
i) Development of Interstate Bus Terminus at Bhartal, Dwarka, Holambi Kalan and Tikri Kalan	50	25	-	75
ii) Integrated Freight Complex at Madanpur Khadar, Gazipur and Narela	50	100	100	250
C. DEVELOP NEW LINK ROADS AND BRIDGES AS ALTERNATIVE ROUTES				
i) East-West Corridor from Rajghat to Panjabi Bagh-12km	120	300	300	720
ii) North-South Corridor from Majnu ka tila to Daula Kaun-15km	125	350	425	900
iii) Prem Bari Pul (Pritampura) to Outer Ring Road along Disused Western Yamuna Canal	30	20	-	50
iv) Sarita Vihar Intersection on Mathura Road to Okhla industrial Areas	30	-	-	30
v) Development of elevated ring road	300	2000	2300	4600
vi) Elevated section over Outer Ring road- NH 1 (Mukerba Chowk)	200	250	-	450

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
to wazirabad 7.5 Km.				
vii) Outer Ring Road Link from Okhla to Wazirabad - 13 km.	200	400	400	1000
viii) Missing Link of Outer Ring Road from NH 8 to Janakpuri through Cantonement Area - 13Km.	200	400	400	1000
ix) Wazirabad Signature Bridge over river Yamuna	464	-	-	464
x) Geeta Colony Bridge over river Yamuna	125	-	-	125
xi) Master plan road over disused Canal between Shastri Park and Karkari More	120	-	-	120
xii) Ring road bypass from Salim Garh Fort to Velodrome road	100	200	200	500
xiii) Link road from NH 24 to Lodhi road (Tunnel Bypass)	60	250	250	560
E. FULL DEVELOPMENT OF ROW OF ROAD				
i) Traffic Management and Area Traffic Control schemes at all Grade Separators and prominent commercial areas	50	-	-	50
ii) Improvement of road corridors spread over Delhi - 251.40 km.	500	1014	1000	2514
iii) Corridor improvement plan for Mehrauli Gurgaon Road (connecting Andheri Morh to Delhi-Haryana Border)	174	-	-	174
iv) Beautification of roads for Commonwealth Games	750	-	-	750
v) Flyover at Mukerba Chowk	195	-	-	195
vi) Grade Seperator at Azadpur	154	-	-	154
vii) Three Flyovers between IIT & NH 8 on Outer Ring Road	247	-	-	247
viii) Flyover at Naraina	125	-	-	125
ix) Bridge over Neela Hauz (Aruna Asaf Ali Marg	47	-	-	47
x) Flyover at Mangolpuri Chowk on Outer Ring Road	31	-	-	31
xi) Behera Enclave underpass on Outer Ring Road	55	-	-	55
xii) Flyover at Nagloi on NH 10	78	-	-	78
xiii) ITO Chungi - 4 no.'s cloverleaves and underpass	74	-	-	74
xiv) RUB connecting road no. 58 and 64	32	-	-	32
xv) Grade Separator at Shastri Park	65	-	-	65
xvi) Flyover at Apsara border on G.T.Road	88.5	-	-	88.5
xvii) Grade Separator at intersection of Raja Ram Kohli Marg & Pusta Road	97	-	-	97
xviii) Grade separator at Shastri Park Pushta Road Intersection	83	-	-	83
xix) Flyover on Road no 56 (ISBT Anand Vihar) & NH 24 (Gazipur drain)	150	300	-	450
xx) ROB on Road No. 63 level crossing	34	-	-	34

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
xxi) UP link road clover leaf	200	-	-	200
xxii) ROB at G.T.Road near Shyam Lal College	85	-	-	85
xxiii) BSZ - DDU - I.P.Marg Flyover	100	100	-	200
Xxiv) Grade separator along Rani Jhansi Road between Baraf Khana Chowk and Bara Hindu Rao Chowk	178	-	-	178
xxv) ROB at Samaipur Badli Level Crossing on Auchandi Road	40	-	-	40
xxvi) Construction of flyovers/underbridges at various level crossing sites.	250	250	-	500
F. MANAGEMENT AND CREATION OF NEW PARKING AREA				
i) Construction of Multi-Level Parking in Delhi	100	250	250	600
ii) Parking management & Regulation at 10 prominent locations	15	-	-	15
iii) Construction of underground parking in residential areas	50	-	-	50
G. PROVIDE EQUITABLE USE OF SPACE ON ROAD AND PRIORITY TO PEDESTRIANS				
i) Strengthening and improvement of footpaths along major arterial roads	100	50	-	150
ii) Construction of foot over bridges/ subways at ten critical locations	10	-	-	10
iii) Modernisation of Street lighting	125	-	-	125
H. PREPARE SPECIAL INTEGRATED SCHEMES FOR MOVEMENT IN CP AND OLD CITY AREA				
i) Improvement Major intersections like Ajmeri Gate, Fountain Chowk, Kaudia Pal, Khari Baoli etc. at 15 locations	3	-	-	3
ii) Pedestrianisation of inner circle in Connaught Place including parking below inner circle	20	-	-	20
iii) Pedestrianisation (partial) Chowk Area with heritage considerations	10	-	-	10
iv) Provisions of subways at nine locations in outer circle of Connaught Place	18	-	-	18
v) Developing Underground Parking at Connaught Place, Super Bazar, Mayur bhawan, Shivaji Terminal as part of redevelopment of Connaught Place	50	100	-	150
vi) Corridor improvement of S.P Mukherjee Marg	75	-	-	75
vii) Traffic management plan for areas around proposed Civic Center near Minto Road	188	-	-	188
I. ENCOURAGE USE OF INTERMEDIATE PUBLIC TRANSPORT AND NON-MOTORISED PASSENGER TRANSPORT (Including cycles and cycle rickshaws)				
i) Provision of Cycle Tracks at Sub-Arterial & Local Level roads and streets new areas and urban	15	50	50	115

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
extensions				
ii) Road improvements for use of cycle rickshaw in Karol Bagh/Lajpat Nagar and Trans Yammuna Area	30	20	-	50
iii) Development of Cycle Tracks in along major transport corridor near industrial nodes at seven routes	100	-	-	100
J. CREATE AWARENESS AND ENFORCEMENT DRIVE				
i) Public awareness and enforcement drive	3	-	-	3
ii) User Information System for transport systems	10	20	30	60
iii) Registration and Training of Transport Operators/drivers	3	-	-	3
TOTAL	13486.5	10629	9190	33305.5

18.2.4 Storm Water Drainage

The storm water drainage system in city is supported by 350km of natural drains and 1700km of manmade drains. On the basis of topographical characteristics and existing drainage network of city has been divided into five drainage basins namely Najafgarh, Alipur, Shahdara, Khushak nallah and Mehrauli. Three pronged strategy to improve the drainage system of city: (i) Comprehensive study of drainage systems; (ii) Short Term Improvement Measures (iii) Revival, waste water treatment and landscaping of the main drains (table 18.4). The projects needs to be implemented for improvement of city drainage system are presented in Table 18.5.

Table 18.4 : Cost of Drainage Revival and Management (Based on Estimated BOD Load)

S. No.	Drain	Approximate Cost of Wastewater Treatment (Rs Crores)	Term (short / medium / long term)
1.	Najafgarh Drain	30.00	S
2.	Magazine Road Drain	0.50	M
3.	Sweepers Colony Drain	0.30	M
4.	Khyber Pass Drain	0.10	M
5.	Metcalf House Drain	0.20	M
6.	ISBT Drain	1.50	M
7.	Tonga Stand Drain	0.45	M
8.	Moat Drain	0.05	M
9.	Civil Mill Drain	3.00	M
10.	Delhi Gate Drain	2.50	M
11.	Sen Nursing Home Drain	6.00	M
12.	Drain No. 12A	0.21	M
13.	Drain No. 14	4.50	M

14.	Barapulla Drain	3.50	S
15.	Maharani Bagh Drain	5.00	M
16.	Kalkaji Drain	0.18	M
17.	Tehkhand Drain	0.42	M
18.	Tughlaqabad Drain	0.22	M
19.	Shahdara Drain	12.00	M
20.	Sarita Vihar Drain	8.00	M
21.	Drain at LPG Bottling Plant	0.80	M
22.	Drain near Sarita Vihar Bridge	4.00	M
	Total	83.43	

Cross section modification cost = ~ 0.12 Crores / Km (in addition to treatment cost) For 400 km total length of these drains, the cost for cross section modification, as per above rate - Rs. 48 crore, **Grand total - Rs. 131.43 crore, (say Rs. 132 crore)**

Table 18.5: Investment Options-Storm Water Drainage System (2021)

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
A. COMPREHENSIVE STUDY OF DRAINAGE SYSTEM				
i) Comprehensive study and GIS based drainage mapping and planning for all drainage systems within the NCT of Delhi	10	-	-	10
B. SHORT IMPROVEMENT MEASURES				
i) Remodeling of drains having outfall into Yamuna	42	40	40	122
ii) Provision of outfall treatment plants at outfall drains-15 Nos.	15	-	-	15
iii) Repair and Desilting of Drainage Network-2100km	20	12	20	52
iv) Provision of Pump houses in low lying areas with power backup	5	5	5	15
v) Augmentation of storm water drainage	40	48	40	128
C. REVIVAL AND MANAGEMENT OF MAJOR DRAINAGE NETWORK				
i) Revival and landscaping of major drains (on the line of South Delhi Greenways project)	54	78	-	132
ii) Design of Check dams and depressions for Ground Water Recharge	20	10	10	40
iii) Pilot project on Sub	25	10	10	45

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
wells to be developed under flyover for trapping rainwater				
TOTAL	231	203	125	559

18.2.5 Solid Waste Management

The strategy for reducing land requirement, improvement in service delivery and environment would be: (i) maximize waste processing with appropriate and proven technologies; (ii) The existing composting facilities may be re-engineered, revitalized and capacity augmented with technical inputs and marketing support to process 1075 tons per day; (iii) Closure, capping and landscaping of existing dump-sites along with a plan for disposal of waste during the intermittent period before new sanitary landfills are commissioned and actually operated and (iv) New facilities of waste processing including composting of 1500 TPD and other processing technologies to the maximum possible extent should be installed (for example, dry combustible waste can be processed as refuse derived fuel). The strategy wise projects to provide for better waste management are presented in Table 18.6.

Table 18.6: Investment Options-Solid Waste Management System (2021)

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
A. RENEWAL OF EXISITING COMPOST PLANTS IN DELHI				
(i) Revival & Reengineering of Compost Plants at Okhla with New Plant; Machinery and Equipment (MCD+NDMC)	14	-	20	34
(ii) Bhalsawa & Tikri Khurd Compost Plant- Additional 3 hectare land required and complete renewal of the compost pad area and augmentation of Plant and Machinery (MCD+APMC)	9	-	20	29
B. CLOSURE, CAPPING AND LANDSCAPING OF EXISTING LANDFILLS				
(i) Re-grading, Closure, Capping, LFG extraction and Collection, Peripheral drain, internal roads, landscaping etc-Okhla,	109	-	-	109

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
Ghazipur and Bhalsawa				
C. PROPOSED WASTE PROCESSING FACILITIES				
(i) 2000 TPD C&D Waste processing plant at Ghumman Hera and Burari	25	10	30	65
(ii) Compost Plant of 1500 TPD at Ghumman Hera, Narela-Bawana	43	10	50	103
(iii) Waste to Energy plant at Okhla and Timarpur	100	20	100	220
D. PROPOSED SANITARY LANDFILL SITES				
(i) Development of Landfill sites at Jaitpur, Narela-Bawana and Bhatti Mines-138 Hectare	272	208	200	680
E. OTHER PROJECTS				
(i) Mechanical Street Sweeper-10 Nos	7	3	7-	17
(ii) IEC awareness programme	5	5	5	15
(iii) Training of Staff and Workers (52000) as part of Training of Trainers programme	5	5	5	15
(iv) Pilot Projects for Ragpickers for making them function in organized manner in Old City area; North Campus, East Delhi; West Delhi and South Delhi-17 Nos	3	3	3	9
(v) Study for Quantification and Development of management model for E-waste in City	1	-	-	1
vi) Pilot project for processing and disposal of e-waste	0	25	0	25
TOTAL	593	289	440	1322

18.2.6 Heritage and Conservation

The strategies for conservation of urban heritage involve (i) development of an information management system; (ii) capacity building and provision of technical support for conservation; (iii) area level conservation, revitalization and regeneration and (iv) heritage sensitive infrastructure up-gradation and (v)

heritage tourism. The projects needs to be implemented for improvement of city drainage system are presented in Table 18.7.

Table 18.7: Investment Options-Heritage and Conservation (2021)

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	Rs in Crore			
A) DEVELOPMENT OF AN INFORMATION MANAGEMENT SYSTEM				
(i) Development and maintenance of a GIS based Cultural Heritage Information System integrated with overall land information management system.	20	2	2	24
(ii) Capacity Building of employees of the departments involved in heritage conservation	1	2	2	5
(iii) Provision for recording excavated remains and removal of artifacts to museums	2	2	2	6
B) ESTABLISHMENT OF A SELF-SUSTAINING TECHNICAL SUPPORT CONSERVATION CENTRE				
(i) Capacity building and provision of technical assistance by trained, qualified heritage professionals to owners of heritage buildings as well as buildings located within designated heritage zones- Mehrauli and Shahjehanabad	10	2	2	14
(ii) Ensuring Technical Support for conservation required for at area level	1	-	-	1
C) PRIORITISATION OF IDENTIFIED HERITAGE ZONES AND PRECINCTS				
(i) Development and implementation of a comprehensive regeneration and heritage management plan- Central Bazaar spine of Mehrauli; Adham Khans Tomb to Sohan Burj (Development of heritage area)	17	30	8	55
(ii) Community based Heritage Management	37	53	15	105

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	Rs in Crore			
Plans for the Dargahs/ traditional Pilgrim destinations of Delhi (Development of heritage area)				
(iii) Upgradation of open space structure along with urban landscape of the walled city (Regeneration of old inner city area)	25	15	5	45
(iv) Area regeneration scheme for chowks and interface between historic components of the city with the Metro Stations (Regeneration of old inner city area).	20	10	-	30
(v) Heritage Management Plan and guidelines for development of the area around the Old Delhi Railway Station	2	-	-	2
(vi a. Guidelines for integrated conservation management of the area between Red Fort, Jama Masjid, Chandni Chowk and Darya Ganj (2	-	-	2
(vi) b. Revitalization of surroundings of Jama Masjid)	234	-	-	234
(vii) Restoration of Town hall and preparation of comprehensive heritage plan	6	-	-	6
(viii) Rehabilitation of historic and traditional housing stock within designated heritage zones and precincts (Regeneration of old inner city area)	45	25	25	95
(ix) Revitalization of inner (Old) city area	40	300	100	440
D) ADAPTIVE REUSE OF BUILDINGS OR PRECINCTS				
(i) Adaptive reuse of derelict 'havelis', heritage buildings, evacuee properties of	35	15	5	55

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	Rs in Crore			
heritage significance in Shahjehanabad and 'shikargahs' in rural villages for provision of essential community facilities				
(ii) Retrofitting of services and rationalisation of space utilisation in heritage buildings currently used for community purposes	8	8	5	21
D) REINTEGRATING PREVIOUSLY OVERLOOKED HERITAGE COMPONENTS INTO THEMATIC HERITAGE TOURISM CIRCUITS				
(i) Development of thematic heritage tourism circuits as an integrated network with signage systems, heritage site linked interpretation centres/ site museums, tourist facilities, low speed circuit transport for tourists - battery buses, bicycle tracks	60	10	10	80
(ii) Revival and Revitalisation of historic water Systems and buildings including Baolis, Embankments, Sluiceways, Talaos, Catchment areas, Hauz, Sarais and Kos Minars of Delhi	12	7	7	26
(iii) Awareness generation materials and educational tools to enable children to form cognitive maps of Historic Delhi - linked with curriculum of Delhi schools	3	1	1	5
(iv) Adaptive reuse of heritage hotel at Kashmiri Gate	2	-	-	2
TOTAL	582	482	199	1263

18.2.7 Urban Environment

Broad strategies include (i) outreach and capacity building, (ii) enhancement of forests and green cover and (iii) mitigation of air, water, and noise pollution.

The best management practices for environment management in city are presented in Table 18.8.

Table 18.8: Investment Options- Urban Environment (2021)

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
A Outreach and Capacity Building				
i) Create awareness for water conservation and the techniques, training programmes for the RWAs, display & promotional material & schools, hospitals, change institutions.	16	17.6	19.2	52.8
B. Forest & Green Cover				
i) South Delhi Greenway Project	227	40	10	277
ii) Detailed study of the biodiversity and ecology of the city. To include a complete inventorisation of all the species of flora and fauna	0.7	1	1.5	3.2
(iii) Protection of Delhi ridge including restoration of ecology and for demarcation of bunds.	5	1	1	7
iv) GIS based Database of natural resources of the city including forest and vegetation cover, land use pattern, water bodies and others	2	0.8	1	3.8
C. Mitigation of Air, Water and Noise Pollution				
i) Installation of 9 web linked continuous air quality monitoring stations	15	2	10	27
ii) Action projects of the Master Plan for Dhobighats Sudhar Yojna under the YAP II. Creating alternate better infrastructure for the dhobis, treatment facility for the waste water and drainage in to the river	50	10	-	60
iii) Action projects for the collection, transport and treatment of the dairy waste under the YAP II.	50	15	-	65

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
This would include installation of treatment plants, methane generation plants and drainage system for the dairy waste				
iv) Upgradation of the crematoria in the city to make them environmentally better (air pollution treatment equipment). Master plans under the YAP II to be implemented	10	-	-	10
v) River Front Development including walkways, recreation facilities, kiosks, water sports etc	50	40	5	95
vi) Installation of 2 water quality stations for monitoring and gauging.	5	-	-	5
TOTAL	430.7	127.4	47.7	605.8

18.2.8 Urban Governance

Projects related to urban governance mainly involve development of management information system and capacity building of urban local bodies and parastatal departments. The investment options to strengthen the monitoring mechanism are presented in Table 18.9.

Table 18.9: Investment Options-Urban Governance (2021)

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	Rs in Crore			
(i) Development of GIS/MIS based database system for Land and Building Records	5	-	-	5
(ii) Development of E-governance for various services of ULBs	1	-	-	1
(iii) Capacity building of the MCD and Parastatal departments	3	-	-	3
TOTAL	9	-	-	9

18.2.9 Other Development Projects

The other development projects are decentralization of trade fair from core city area and redevelopment of low density government housing estates. The projects details are presented below.

Table 18.10: Investment Options-Urban Environment (2021)

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	Rs in Crore			
(i) Development of Trade Centres in North-East and West of City-2 Nos	15	-	-	15
(ii) Study for Identification and Development options in Government Land in Core City area-5 Nos	5	-	-	5
TOTAL	20	-	-	20

Sub-Mission-2: Basic Services and Poor

18.2.10 Urban Slums and Poor

The strategy for slum up gradation & improvement involves (i) In-situ redevelopment at existing JJ clusters and Slums; (ii) Development of serviced plots; (iii) development of night shelters; (iv) infrastructure up gradation in 44 resettlement colonies; (v) provision of housing on an on-going basis for urban poor and (vi) in-situ reconstruction of Katras. Table below presents the short term, medium term and long term investments for Slum Improvement and up gradation.

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	Rs in Crore			
A) IN-SITU REDEVELOPMENT OF SLUMS				
(i) In situ redevelopment of Slums- providing water supply, road network, drainage and Housing etc.	783	950	-	1733
(ii) Upgradation of Street Lighting system	300		-	300
(iv) Construction of Community Toilets- 1200 Nos.	17	6	6	29
(v) Development of Site for Transit Camps-10 Nos	80			80

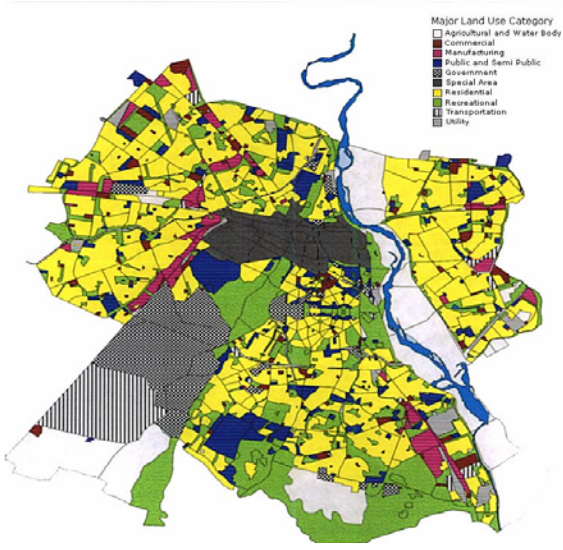
Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	Rs in Crore			
B. DEVELOPMENT OF SERVICED PLOT AT RELOCATION SITES				
(i) Relocation of 5000 JJ Units	30	-	-	30
(ii) Development of Relocation Sites at Kanjhawala, Ghogha and Bapraula	217	-	-	217
(iii) Development of plots at Savda Gevra-20000JJ	250			250
C. DEVELOPMENT OF NIGHT SHELTERS				
(i) Development of Night Shelters in Walled City area and Industrial Complexes-5 Nos	15	-	-	15
D. INFRASTRUCTURE UPGRADATION IN RESETTLEMENT SITES & COLONIES				
(i) Infrastructure up gradation in resettlement colonies	85	270	270	625
(ii) Infrastructure upgradation of 11 existing relocation sites	239	-	-	239
(iii) Revival Plan for Community Work Centres (22383 m ²)	30	-	-	30
(iv) Civic amenities like Community halls	200	-	-	200
D. PROVISION OF HOUSING FOR URBAN POOR				
(i) Multi-Storeyed Tenements at Rohini-1770 DUs	50	-	-	50
(ii) Multi-Storeyed Tenements at Dwarka-2550 DUs	73	-	-	73
(iii) Construction of 13510 EWS houses at village Siraspur and Sector-26, Rohini	400	-	-	400
(iv) Worker Housing with cost effective technologies at Narela, Bhorgarh and Bawana	101	-	-	101
(v) Housing for Urban Poor through development of EWS Housing	750	1000	1200	2950

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	Rs in Crore			
(vi) Rehabilitation & resettlement of slum dwellers at Narela Phase II and Rohini	710	-	-	710
D. IN-SITU RECONSTRUCTION OF KATRAS				
(i) Reconstruction of Katras in old city areas	70	200	270	540
TOTAL COST in Rs Crore	4400	2426	1746	8572

18.3 SUMMARY OF COSTS

The total investment under JNNURM is Rs 24140 Crore. The investment for Sub-Mission-1 is Rs 19740 Crore and Sub-Mission-2 is Rs 4400 Crore. The details of sector wise investment are presented below.

Strategy/Project	Short Term Investments (2007-12)	Medium Term Investments (2012-2017)	Long Term Investments (2017-21)	Grand Total
	RS IN CRORE			
SUB-MISSION-1: URBAN INFRASTRUCTURE AND GOVERNANCE				
Water Supply	1632	130	122	1884
Sewerage System	2755	1435	1435	5625
Road Network and Transport	13487	10629	9190	33306
Storm Water Drainage	231	203	125	559
Solid Waste Management	593	289	440	1322
Urban Heritage	582	482	199	1263
Urban Environment	431	127	48	606
Urban Governance	9	0	0	9
Other Projects	20	0	0	20
Sub-Total	19740	13295	11559	44594
SUB-MISSION-2: BASIC SERVICES AND POOR				
Urban Poor, Slum and Housing	4400	2426	1746	8572
Total	24140	15721	13305	53166



Chapter – 19 : Project & Capital Investment Plan



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CHAPTER - 19 PROJECT AND CAPITAL INVESTMENT PLAN

19.1 INTRODUCTION

This section identifies projects proposed in specific sectors, based upon the strategies that have been outlined in the previous section. The project identification and capital investment plan have been prepared for sectors as per the sub-missions of JNNURM. The sectors covered in Sub-Mission-1: Urban Infrastructure and Governance are (i) Water Supply; (ii) Sewerage and Sanitation; (iii) Storm Water Drainage; (iv) Road Network and Transport Projects; (v) Solid Waste Management Projects; (vi) Redevelopment of Core City Area; (vii) Heritage Conservation and (viii) Urban Governance; and Sub-Mission-2: Basic Services to Urban Poor are (i) Housing; (ii) Basic Services and (iii) Other related civic amenities

The implementing authorities for projects in NCTD area are Municipal Corporation Delhi (MCD); New Delhi Municipal Corporation (NDMC); Delhi Jal Board (DJB); Public Works Department (PWD); Delhi Development Authority (DDA); Urban Development Department (UDD) and Delhi State Industrial Development Corporation (DSIDC).

In order to optimize life cycle costs, private sector efficiencies can be inducted in development, management, implementation and financing of projects, through PPP arrangements where appropriate.

Sector wise projects will be categorized as (i) Financially viable Projects: These projects can undertaken entirely by the private sector (ii) Projects which are financially viable, with government support such as annuity projects and (iii) projects which are financially unviable and require to be taken up directly by government.

SUB-MISSION-1: URBAN INFRASTRUCTURE AND GOVERNANCE

19.2 WATER SUPPLY

DJB is the agency of the Govt. of NCT of Delhi responsible for procurement, treatment, transportation and distribution of water in the MCD areas. It also supplies bulk water to the NDMC, and Delhi Cantonment Board.

19.2.1 Summary of strategies

The strategies identified, in order of priority are:

- i) Reduction of transmission & distribution losses, and enhancement of management of water supply;
- ii) Augmentation of water supply and distribution network
- iii) Promotion of efficiency in service delivery and strengthening of cost recovery mechanism.

(A) REDUCTION OF TRANSMISSION AND DISTRIBUTION LOSSES

Projects identified are listed below

- (a) **Revamping, up-gradation and Extension of Internal Network:** The revamping and upgradation of internal distribution will reduce the T&D loss and to have equitable distribution of water in each zone.
- (b) **Interlinking of Supply System:** Interlinking of Western Jamuna Canal (WJC) with Wazirabad pond by laying 2000mm diameter pipeline for supply of raw water from WJC to Wazirabad pond.
- (c) **Development of Monitoring System:** In order to monitor water quantity and quality, installation of Zonal level water meters, chlorination and up-gradation of water testing labs have been proposed; as well as various monitoring & leak detection studies.

(B) AUGMENTATION OF WATER SUPPLY SYSTEM

Projects have been proposed to provide water supply to urban villages, peripheral areas of the city, JJ clusters, unauthorized areas and new developments; as well as to augment the quantum of water available to the city.

- (a) **Water Treatment Plant:** It is proposed to construct one 31MGD iron removal plant at Palla (to improve water quality), 20MGD Water treatment plant at Okhla, and 40MGD water treatment plant at Dwarka. Moreover it is also proposed to construct recycling plant of 8MGD each at Chadrawal, Wazirabad Haiderpur and Bawana. The population serviced by these treatment plants is 3.2 million spread over an area of 55km².
- (b) **Upgradation of Water Works:** The project for up gradation of water works at Chandrawal, Wazirabad and Bawana. The existing capacity of these water works are 90 MGD; 120 MGD & 40 MGD respectively. The capacities of these water works are to be increased by 20 to 30 MGD to cover additional 0.35 million population.
- (c) **Construction of Tube wells:** 21 high yield tube wells are to be drilled in flood plain area of river Yamuna. Although ground water is residing down, the tube wells in these area has minimum impact on the ground water due to its location in the flood plain at palla.
- (d) **Construction & Connection of UGR/BPS:** In order to improve the distribution system in city, the construction of UGR/BPS and connecting them with transmission network has been proposed.
- (e) **Exploration of Raw Water Resources:** The water resources are to be explored to augment the water supply system to fulfill the water demand in future.

(C) PROMOTION OF EFFICIENCY IN SERVICE DELIVERY AND STRENGTHENING OF COST RECOVERY MECHANISM

Projects proposed include

- (a) **Revamping DJB Customer Care Services:** Procurement and Installation of system software for billing and customer information.

Strategy/Project	Rs Crore	2007- 08	2008- 09	2009 -10	2010 -11	2011 -12	Agencies Responsible for	
							Capital Investment	O&M
RS IN CRORE								
A) REDUCE TRANSMISSION & DISTRIBUTION LOSSES								
(i) Revamping and upgradation of internal water distribution network and pumping stations	75	25	25	25	-	-	DJB	DJB
(ii) Coverage of new colonies in outer areas of city	25	10	10	5	-	-	DJB	DJB
(iii) Interlinking of WJC with Wazirabad pond Laying of 2000 mm dia pipeline for supply of raw from WJC to Wazirabad pond	187	50	50	50	37	-	DJB	DJB
(iv) Supply and Installation of Bulk Meters	30	15	10	5	-	-	DJB	DJB
(v) Modernization and upgradation of Laboratory	20	10	10	-	-	-	DJB	DJB
(viii) Leak Detection Study	1.0	0.5	0.5	-	-	-	DJB	DJB
(ix) Energy Efficiency Study	2.0	1	1	-	-	-		
B) AUGUMENTATION OF WATER SUPPLY FROM 790 MGD TO 919 MGD								
(i) Construction of New Water Treatment Plants	696	250	250	116	50	30	DJB	DJB
(a) 31 MGD Iron removal Plan								
(b) 20 MGD WTP at Okhla								
(c) 40 MGD WTP at Dwarka								
(ii) Construction of 21 Nos. High Yield Tube wells in flood plain area of river Yamuna	1	0.5	0.5	-	-	-	DJB	DJB
(iii) Upgradation of Water Works- chandrawal	35	20	10	5	-	-	DJB	DJB
(iv) Construction of UGRs/BPS in Various Part of Delhi	250	50	50	50	50	50	DJB	DJB
(v) Construction of 8MGD recycling plants Chandrawal, Wazirabad,	20	20	-	-	-	-	DJB	DJB

Strategy/Project	Rs Crore	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Capital Investment	O&M
RS IN CRORE								
Haiderpur and Bhagirathi								
(vi) To Connect UGR with Plants transmission lines of varying size-250kms	200	50	50	50	30	20	DJB	DJB
(vii) Construction of 1 MGD WTP at common wealth games village along with arrangement of raw water	20	10	10	-	-	-	DJB	DJB
(vii) Exploration of Raw Water Resources	50	15	15	20	-	-	DJB	DJB
C) EFFICIENCY IN SERVICE DELIVERY AND COST RECOVERY MECHANISM								
(i) Revamping DJB Customer Care Services-Procurement and Installation of system software for billing and customer information	20	8	8	4	-	-	DJB	DJB
GRAND TOTAL IN Rs CRORE	1632.0	535.0	500.0	330	167	100		

The O&M cost due to the new investment is estimated at Rs. 446.7.00 Crore. Delhi Jal Board (DJB) is the authority responsible for O&M of water supply system.

Strategy/Project	Total O&M Cost @ 10%	2007-08	2008-09	2009-10	2010-11	2011-12
A) AUGUMENTATION OF WATER SUPPLY FROM 790 MGD TO 919 MGD	343.05	0	41.55	80.1	104.2	117.2
B) REDUCE TRANSMISSION & DISTRIBUTION LOSSES	97.25	0	11.15	21.8	30.3	34
C) EFFICIENCY IN SERVICE DELIVERY AND COST RECOVERY MECHANISM	6.4	0	0.8	1.6	2	2
TOTAL	446.7	0	53.5	103.5	136.5	153.2

19.3 SEWERAGE SYSTEM

DJB is the agency of the Govt. of NCT of Delhi responsible for collection, treatment and disposal of wastewater. Projects which effectively resolve the present drawbacks of the system have been taken up on a priority basis.

19.3.1 Summary of Strategies

Strategies identified, in order of priority are given below:

- i) Extension and up-gradation of sewage network to intercept sewage-abatement of pollution.
- ii) Provision of sewer network in un-sewered areas.
- iii) Augmentation of sewage treatment capacity

(i) EXTENSION AND UPGRADATION OF SEWERAGE NETWORK

These projects aim to revamp and upgrade the existing sewer network. These include providing sanitation to uncovered areas of the city. The projects covered as part of extension and up-gradation of sewerage network are:

- (a) **Revamping and Rehabilitation of Trunk & Internal Sewerage Network:** In order to improve the sewage collection and disposal system in already sewerage area, it has been proposed to revamp and upgrade (including replacement) about 650km of internal sewer network; and rehabilitate 150km of trunk sewer network in walled city area, north & west districts of city (excluding sewer under YAP-II). This latter component will include the procurement of suction and jetting machines, CCTV etc. to ensure adequate maintenance (if maintenance is not to be out-sourced)
- (b) **Refurbishment of Sewage Pumping Stations:** The refurbishment of existing sewage pumping stations (SPS) will aim at optimal functioning of these plants.

(ii) PROVISION OF SEWER NETWORK IN UN-SEWERED AREAS

Projects included are

- (a) **Laying of Sewer Network in Uncovered Areas:** The provision of 250km of trunk sewer network in uncovered area and laying of sewer network in 169+39 villages & 1513 unauthorized/regularized colonies to improve the sanitation system in these areas.
- (b) **Construction of new sewage pumping stations:** These will allow diversion of sewage from uncovered areas to the appropriate STP, for optimal utilisation of the STP's. These are proposed at Punjabi Bagh, Nangloi extn, Preet vihar, Yamuna vihar and Jivan Vihar

(iii) AUGMENTATION OF SEWAGE TREATMENT CAPACITY

Projects proposed include

- (a) **Construction of STPs along intercepting sewers:** Total estimated project cost is 700 Crores
- (b) **Construction of Sewage Pumping Stations:** These will upgrade sanitation facilities in low lying areas. The cost of constructing the SPS's is Rs. 150 Crore
- (c) **Laying of Intercepting Trunk Sewers along Three Main Drains:** Consideration of this proposal is subject to the recommendations of the consultant due to be appointed to advice on this issue. Cost allocated is Rs. 500 Crore in the first phase.

Strategy / Project	Rs Crore	2007- 08	2008- 09	2009 -10	2010 -11	2011 -12	Agencies Responsible for	
							Capital Investme nt	O&M
RS IN CRORE								
A) EXTENSION AND UPGRADATION OF SEWERAGE NETWORK FOR INTERCEPTING SEWAGE TO CONVEY TO STPS-POLLUTION CONTROL AND ABATEMENT OF POLLUTION								
(i) Revamping and up gradation of internal sewerage network including replacement of Old Sewer line	125	75	50	-	-	-	DJB	DJB
(ii) Refurbishment of Sewage Pumping Stations- 6Nos	20	20	-	-	-	-	DJB	DJB
(iii) Rehabilitation of Trunk Sewers in walled city area, north and west districts excluding trunk sewer under YAP-II	450	100	100	150	50	50	DJB	DJB
B) PROVISION OF SEWER NETWORK IN UN-SEWERED AREAS								
(i) Provision of Sewer in left out portion of colonies and rural villages	120	20	50	30	20	-	DJB	DJB
(ii) Laying of 250 km of trunk sewer network to cater to uncovered area (U?A regularized colonies)	75	30	30	15	-	-	DJB	DJB
(iii) Provision of Sewerage Network in 30 urban villages	45	10	20	15	-	-	DJB	DJB
(iv) Provision of Sewerage Network in Unauthorized colonies	400	75	50	50	100	125	DJB	DJB
(v) Diverting the sewer from uncovered area by constructing Sewage Pumping Stations (SPS) Punjabi Bagh, Nangloi extn, Preet vihar, Yamuna vihar and Jivan vihar, Raja Garden	100	25	50	25	-	-	DJB	DJB

Strategy / Project	Rs Crore	2007- 08	2008- 09	2009 -10	2010 -11	2011 -12	Agencies Responsible for	
							Capital Investment	O&M
RS IN CRORE								
(vi) Laying of trunk sewers	70	25	25	20	-	-	DJB	DJB
C) AUGMENTATION OF SEWAGE TREATMENT CAPACITY								
(i) Construction of new STPs	700	75	100	150	250	125	DJB	DJB
(ii) Construction of Sewage Pumping Stations	150	50	50	50	-	-	DJB	DJB
(iii) Laying of Trunk and interceptor Sewers along main drains	500	100	150	100	75	75	DJB	DJB
TOTAL COST	2755	605	675	605	495	375	DJB	DJB

The O&M cost due to the new investment is Rs. 615 Crore. Delhi Jal Board (DJB) will be the authority responsible for O&M of the augmented sewerage system.

Strategy/Project	Total O&M Cost @ 10%	2007-08	2008-09	2009-10	2010-11	2011-12
A) EXTENSION AND UPGRADATION OF SEWERAGE NETWORK FOR INTERCEPTING SEWAGE	158	0	19.5	34.5	49.5	54.5
B) PROVISION OF SEWER NETWORK IN UN-SEWERED AREAS	184.5	0	18.5	41.0	56.5	68.5
C) AUGMENTATION OF SEWAGE TREATMENT CAPACITY	272.5	0	22.5	52.5	82.5	115.0
TOTAL	615	0	60.5	128.0	188.5	238.0

19.4 ROAD NETWORK & TRANSPORTATION SYSTEM

PWD, MCD, NDMC, DTTDC, DMRC, State Transport Authority and Delhi Development Authority are the main agencies responsible for construction, maintenance and improvement of road network and operation of the transport system in city. Road projects, which can resolve the current drawbacks of the system with minimum investment, are taken up as priority projects. The projects prepared for improving transport situation in city are presented below:

19.4.1 Summary of Strategies

Projects have been identified based on strategies as given below (in order of priority)

- i. Provision of safe and efficient public transport system
- ii. Encouraging the use of non-motorised modes of passenger transport

- iii. Equitable use of space on road and priority to pedestrians
- iv. Efficient use of existing infrastructure - removal of impediments - including enhancement of road infrastructure and provision of efficient parking facilities
- v. Redevelopment of Connaught Place and Walled City as special areas
- vi. Development of goods and passenger terminals on the basis of directional needs
- vii. Enhancement of Road Infrastructure
- viii. Awareness and enforcement drives

(i) PROVISION OF SAFE AND EFFICIENT PUBLIC TRANSPORT SYSTEM

The goal is to augment the share of trips of public transport from the current 60 percent to 80 percent. This is proposed to be done through an integrated multi-modal system of public transport. The projects proposed include

- (a) **Developing a light Rail Transport System:** Estimated project cost is Rs. 2800 Crore
- (b) **Developing a Monorail System:** Estimated Project Cost is Rs. 2400 Crore
- (c) **Putting in place a High Capacity Bus System:** Estimated Project Cost is Rs. 1305 Crore

The three systems are planned to operate in a complementary manner. The total project cost for this objective is Rs. 6505 Crore.

(ii) ENCOURAGING USE OF NON MOTORISED MODES OF PASSENGER TRANSPORT

These are proposed to be promoted for short distance trips along sub arterial roads, local roads and along major transport corridors near industrial nodes. Projects include

- (a) Provision of Cycle Tracks at Sub-Arterial & Local Level roads and streets new areas and urban extensions
- (b) Promotion of cycle rickshaws in specific localities

(iii) PROVIDING EQUITABLE USE OF SPACE ON ROAD AND PRIORITY TO PEDESTRIANS

Projects proposed are:

- a) Strengthening and improvement of footpaths along major arterial roads
- b) Construction of foot over bridges/ subways at ten critical locations

(iv) FULL DEVELOPMENT OF RIGHT OF WAY OF ROAD - REMOVAL OF IMPEDIMENTS AND MANAGEMENT AND CREATION OF NEW PARKING AREAS

Present transport system of Delhi is road based and the available infrastructure should be optimally utilized to ease the traffic on the roads in Delhi. Moreover, proper management and regulation of parking spaces especially in the commercial centers can help in better utilization of facilities. To overcome the current shortfall in parking, there is also a need for developing new parking facilities using appropriate advanced technologies in busy commercial areas as well as residential areas.

Projects proposed under this strategy include:

- (a) Traffic Management and Area Traffic Control schemes at all Grade Separators and prominent commercial areas
- (b) Improvement of road corridors spread over Delhi - 251.40 km.
- (c) Improvement of ten major entry points of Delhi
- (d) Construction of Multi-Level Parking in Delhi at 12 sites
- (e) Parking management & Regulation at 10 prominent locations
- (f) Construction of underground parking in residential areas: It is proposed to identify community areas, or open spaces that can accommodate underground parking and develop these facilities in order to decongest residential roads. Moreover, a framework for the levy of parking charges on residential roads must be developed, and the same implemented.

(v) SPECIAL SCHEMES FOR REDEVELOPMENT OF CONNAUGHT PLACE AND WALLED CITY AREAS

These include

- (a) Improvement of Major intersections like Ajmeri Gate, Fountain Chowk, Kaudia Pal, Khari Baoli etc. at 15 locations
- (b) Pedestrianisation of inner circle in Connaught Place including parking below inner circle
- (c) Pedestrianisation (partial) of Chandni Chowk Area with heritage considerations
- (d) Developing Underground Parking at Connaught Place, Super Bazar, Mayur bhawan, Shivaji Terminal as part of redevelopment of Connaught Place

(vi) DEVELOPING PASSENGER & GOODS TERMINALS BASED ON DIRECTIONAL NEEDS

The main objective of these proposals is to decentralize facilities for goods and passenger movement, in order to relieve the load on the city network. Projects proposed are

- (a) Development of Interstate Bus Terminus at Bhartal, Dwarka, Holambi Kalan and Tikri Kalan
- (b) Integrated Freight Complex at Madanpur Khadar, Gazipur and Narela

(viii) ENHANCEMENT OF ROAD INFRASTRUCTURE

To accommodate the additional demand for road space, there may be a need to construct elevated roads in the existing right of way along the major corridors of movement. The requirement for this should be ascertained after the impact of other proposals have been evaluated (using GIS based tools for traffic modeling). Efforts, however, are required to enhance existing infrastructure in terms of improvement of major intersections. Project proposals include:

- (a) East-West Corridor from Rajghat to Panjabi Bagh-12km
- (b) North-South Corridor from Majnu ka tila to Daula Kaun-15km
- (c) Prem Bari Pul (Pritampura) to Outer Ring Road along Disused Western Yamuna Canal
- (d) Sarita Vihar Intersection on Mathura Road to Okhla industrial Areas
- (e) Elevated ring road of 68.5km, with 50.5km along ring road and 18km are link roads. These are 2 lane dual carriageway with 5km at grade and 45.5km elevated corridor.

(ix) CREATING AWARENESS AND ENFORCEMENT DRIVE

The magnitude of traffic in Delhi calls for creating enhanced awareness about traffic and transport systems by running special programs; creating a traffic management data base and imparting training to road users on a periodic basis. The project cost for this objective is Rs. 16 Crore.

Strategy/Project	Rs in Crore	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Capital Investment	O&M
RS IN CRORE								
A. SAFE AND EFFICIENT PUBLIC TRANSPORT SYSTEM								
i) Developing Light Rail Transport System - 74 km	2800	560	560	740	470	470	DIMTS	DIMTS
ii) Developing Monorail System - 48 km	2400	480	480	720	360	360	DIMTS	DIMTS
iii) High Capacity Bus System -294 km.	1305	265	260	390	195	195	DIMTS	DIMTS
B. DEVELOPMENT OF PASSENGER AND GOODS TERMINALS BASED ON DIRECTIONAL NEEDS								

Strategy/Project	Rs in Crore	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Capital Investment	O&M
RS IN CRORE								
i) Development of Interstate Bus Terminus at Bhartal, Dwarka, Holambi Kalan and Tikri Kalan	50	5	15	15	10	5	PWD	DTC
ii) Integrated Freight Complex at Madanpur Khadar, Gazipur and Narela	50	10	20	10	5	5	PWD	MCD
C. DEVELOP NEW LINK ROADS AND BRIDGES AS ALTERNATIVE ROUTES								
i) East-West Corridor from Rajghat to Panjabi Bagh-12km	120	20	30	30	20	20	PWD	PWD
ii) North-South Corridor from Majnu ka tila to Daula Kaun-15km	125	25	30	30	20	20	PWD	PWD
iii) Prem Bari Pul (Pritampura) to Outer Ring Road along Disused Western Yamuna Canal	30	10	10	10	-	-	PWD	PWD
iv) Sarita Vihar Intersection on Mathura Road to Okhla industrial Areas	30	10	10	10	-	-	PWD	PWD
v) Development of elevated ring road	300	-	100	100	75	25	PWD/PVT	PWD
vi) Elevated section over Outer Ring road- NH 1 (Mukerba Chowk) to wazirabad 7.5 Km.	200	25	50	50	50	25	PWD	PWD
vii) Outer Ring Road Link from Okhla to Wazirabad - 13 km.	200	-	50	50	50	50	PWD	PWD
viii) Missing Link of Outer Ring Road from NH 8 to Janakpuri through Cantonment Area - 13Km.	200	-	50	75	50	25	PWD	PWD
ix) Wazirabad Signature Bridge over river Yamuna	464	164	150	150	-	-	PWD	PWD
x) Geeta Colony Bridge over river Yamuna	125	125	-	-	-	-	PWD	PWD
xi) Master plan road over disused Canal between Shastri Park and Karkari More	120	120	-	-	-	-	PWD	PWD
xii) Ring road bypass from Salim Garh Fort to Velodrome road	100	-	20	20	40	20	PWD	PWD
xiii) Link road from NH 24 to Lodhi road (Tunnel Bypass)	60	-	15	15	15	15	PWD	PWD
D. FULL DEVELOPMENT OF ROW OF ROAD								
i) Traffic Management and Area Traffic Control schemes at all Grade Separators and prominent commercial areas	50	10	20	20	-	-	MCD	MCD
ii) Improvement of road	500	100	150	150	50	50	MCD	MCD

Strategy/Project	Rs in Crore	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Capital Investment	O&M
RS IN CRORE								
corridors spread over Delhi.								
iii) Corridor improvement plan for Mehrauli Gurgaon Road (connecting Andheri Morh to Delhi-Haryana Border)	174	24	50	50	25	25	MCD	MCD
iv) Beautification of roads for Commonwealth Games	750	150	300	300	-	-	PWD	PWD
v) Flyover at Mukerba Chowk	195	50	100	45	-	-	PWD	PWD
vi) Grade Separator at Azadpur	154	34	60	60	-	-	PWD	PWD
vii) Three Flyovers between IIT & NH 8 on Outer Ring Road	247	47	100	100	-	-	PWD	PWD
viii) Flyover at Naraina	125	35	50	40	-	-	PWD	PWD
ix) Bridge over Neela Hauz (Aruna Asaf Ali Marg	47	17	20	10	-	-	PWD	PWD
x) Flyover at Mangolpuri Chowk on Outer Ring Road	31	11	10	10	-	-	PWD	PWD
xi) Behera Enclave underpass on Outer Ring Road	55	15	20	20	-	-	PWD	PWD
xii) Flyover at Nagloi on NH 10	78	18	30	30	-	-	PWD	PWD
xiii) ITO Chungi - 4 no.'s cloverleaves and underpass	74	24	25	25	-	-	PWD	PWD
xiv) RUB connecting road no. 58 and 64	32	12	10	10	-	-	PWD	PWD
xv) Grade Separator at Shastri Park	65	15	25	25	-	-	PWD	PWD
xvi) Flyover at Apsara border on G.T.Road	88.5	28.5	30	30	-	-	PWD	PWD
xvii) Grade Separator at intersection of Raja Ram Kohli Marg & Pusta Road	97	27	40	30	-	-	PWD	PWD
xviii) Grade separator at Shastri Park Pushta Road Intersection	83	23	30	30	-	-	PWD	PWD
xix) Flyover on Road no 56 (ISBT Anand Vihar) & NH 24 (Gazipur drain)	150	30	60	60	-	-	PWD	PWD
xx) ROB on Road No. 63 level crossing	34	34	-	-	-	-	PWD	PWD
xxi) UP link road clover leaf	200	50	75	75	-	-	PWD	PWD
xxii) ROB at G.T.Road near Shyam Lal College	85	25	30	30	-	-	PWD	PWD
xxiii) BSZ - DDU - I.P.Marg Flyover	100	20	40	40	-	-	PWD	PWD
Xxiv) Grade separator along Rani Jhansi Road between Baraf Khana Chowk and Bara Hindu Rao Chowk	178	28	50	50	25	25	MCD	MCD

Strategy/Project	Rs in Crore	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Capital Investment	O&M
RS IN CRORE								
xxv) ROB at Samaipur Badli Level Crossing on Auchandi Road	40	10	15	15	-	-	MCD	MCD
xxvi) Construction of flyovers/under bridges at various level crossing sites.	250	50	75	75	25	25	MCD	MCD
E. MANAGEMENT AND CREATION OF NEW PARKING AREA								
i) Construction of Multi-Level Parking in Delhi at 12 sites	100	10	20	20	25	25	MCD	MCD
ii) Parking management & Regulation at 10 prominent locations	15	10	5	-	-	-	MCD	MCD
iii) Construction of underground parking in residential areas	50	10	10	10	10	10	MCD	MCD
F. PROVIDE EQUITABLE USE OF SPACE ON ROAD AND PRIORITY TO PEDESTRIANS								
i) Strengthening and improvement of footpaths along major arterial roads	100	20	30	30	10	10	MCD	MCD
ii) Construction of foot over bridges/ subways at ten critical locations	10	5	5	-	-	-	MCD	MCD
iii) Modernisation of Street lighting	125	25	60	40	-	-	PWD	PWD
G. PREPARE SPECIAL INTEGRATED SCHEMES FOR MOVEMENT IN CP AND OLD CITY AREA								
i) Improvement Major intersections like Ajmeri Gate, Fountain Chowk, Kaudia Pal, Khari Baoli etc. at 15 locations	3	1	1	1	-	-	MCD	MCD
ii) Pedestrianisation of inner circle in Connaught Place including parking below inner circle	20	8	8	4	-	-	NDMC	NDMC
iii) Pedestrianisation (partial) Chowk Area with heritage considerations	10	2	2	4	2	-	MCD	MCD
iv) Provisions of subways at nine locations in outer circle of Connaught Place	18	5	5	8	-	-	NDMC	NDMC
v) Developing Underground Parking at Connaught Place, Super Bazar, Mayur bhawan, Shivaji Terminal as part of redevelopment of Connaught Place	50	-	5	10	20	15	NDMC	NDMC
vi) Corridor improvement of S.P Mukherjee Marg	75	20	30	25	-	-	MCD	MCD
vii) Traffic management plan for areas around proposed Civic Center near Minto Road	188	35	50	50	25	28	MCD	MCD
H. ENCOURAGE USE OF INTERMEDIATE PUBLIC TRANSPORT AND NON-MOTORISED PASSENGER TRANSPORT (Including cycles and cycle rickshaws)								

Strategy/Project	Rs in Crore	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Capital Investment	O&M
RS IN CRORE								
i) Provision of Cycle Tracks at Sub-Arterial & Local Level roads and streets new areas and urban extensions	15	5	5	5	-	-	MCD	MCD
ii) Road improvements for use of cycle rickshaw in Karol Bagh/Lajpat Nagar and Trans Yammuna Area	30	10	10	10	-	-	MCD	MCD
iii) Devpment of Cycle Tracks in along major transport corridor near industrial nodes at seven routes	100	10	20	20	30	20	MCD	MCD
I. CREATE AWARENESS AND ENFORCEMENT DRIVE								
i)Public awareness and enforcement drive	3	1	1	1	-	-	TRAFFIC POLICE	TRFFIC POLICE
ii)User Information System for transport systems	10	1	1	2	3	3	STA	STA
iii)Registration and Training of Transport Operators/drivers	3	1	1	1	-	-	STA	STA
TOTAL	13486.5	2885.5	3534	3986	1610	1471		

The total estimated O&M cost for transport related projects is Rs 3173 crore. The O&M borne by private operators is Rs 1218.5 Crore. The details of the O&M costs are presented in table below.

Strategy/Project	Total O&M Cost @ 10%	2007-08	2008-09	2009-10	2010-11	2011-12
		RS IN CRORE				
A. SAFE AND EFFICIENT PUBLIC TRANSPORT SYSTEM						
Government	692	0	65	130	223	274
Private	692	0	65	130	223	274
B. DEVELOPMENT OF PASSENGER AND GOODS TERMINALS BASED ON DIRECTIONAL NEEDS						
Government	12	0	1	3	4	5
Private	12	0	1	3	4	5
C. DEVELOP URBAN RELIEF ROADS AS ALTERNATIVE LINK ROADS						
Government	62.0	0	7.0	12.3	18.8	24.0
Private	432.1	0.0	42.9	89.2	136.7	163.4

D. FULL DEVELOPMENT OF ROW OF ROAD						
Government	991.7	0.0	83.1	216.1	340.6	351.9
Private	66.4	0.0	5.7	14.2	22.7	23.9
E. MANAGEMENT AND CREATION OF NEW PARKING AREA						
Government	16.0	0.0	1.5	3.3	4.8	6.5
Private	16.0	0.0	1.5	3.3	4.8	6.5
F. PROVIDE EQUITABLE USE OF SPACE ON ROAD AND PRIORITY TO PEDESTRIANS						
Government	63.5	0.0	5.0	14.5	21.5	22.5
G. PREPARE SPECIAL INTEGRATED SCHEMES FOR MOVEMENT IN CP AND OLD CITY AREA						
Government	83.8	0.0	7.1	17.2	27.4	32.1
H. ENCOURAGE USE OF INTERMEDIATE PUBLIC TRANSPORT AND NON-MOTORISED PASSENGER TRANSPORT (Including cycles and cycle rickshaws)						
Government	30.5	0.0	2.5	6.0	9.5	12.5
I. CREATE AWARENESS AND ENFORCEMENT DRIVE						
Government	3.2	0.0	0.3	0.6	1.0	1.3
TOTAL O&M	3172.6	0.0	288.6	642.0	1040.6	1201.6

19.5 STORM WATER DRAINAGE SYSTEM

PWD, MCD and Irrigation & Flood Control Department are the agencies responsible for construction, maintenance and improvement of drainage system in city. The drainage projects, which can resolve the present drawbacks, are presented below:

19.5.1 Project Summary

The projects identified under various strategies for improvement of city drainage system are (i) Comprehensive Study of Drainage System; (ii) Short term improvement measures and (iii) Revival of Major Drainage Network.

(i) COMPREHENSIVE STUDY OF DRAINAGE SYSTEM

To prepare a comprehensive drainage plan of the city, integration of total station & satellite imagery with 1m contour interval is required. The cost of preparation of comprehensive drainage plan is Rs 10 Crore.

(ii) SHORT TERM IMPROVEMENT MEASURES

The short term improvement measures involve desilting of drainage network; provision of pump houses in low lying areas with power back-up and provision of treatment plants at outfall drains.

(iii) REVIVAL OF MAJOR DRAINAGE NETWORK

The revival of major drains involves improvement and landscaping of- (A) Najafgarh Drain; Mungeshpur Drain & Palam Drain in Najafgarh basin; (B) Mungeshpur drain, Karari Suleman nagar Drain & Nangloi drain in Kanjhawala basin; (C) Bawana Escape drain, Drain no-6, Burari Check & Drain and Wazirpur complex drain in Alipur Basin; (D) Gokulpur Drain, Balbir Nagar Drain, GT road drain, Patparganj drain, Radheypuri Drain, Laxmi Nagar Drain, Vinod Nagar Drain and Shakarpur Drain in Shahdara Drainage Basin. The major drains in Mehrauli basin are Tuglakabad, Madanpur Khadar, Jaitpur and Chirag Delhi Drain. The Cost of revival and improvement of these drains is Rs 99 Crore in the first phase.

Strategy/Project	Cost in Rs Crore	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Capital Investment	O&M
RS IN CRORE								
A. COMPREHENSIVE STUDY OF DRAINAGE SYSTEM								
i) GIS based drainage mapping and planning	10	7	3	-	-	-	PWD	PWD
B. SHORT IMPROVEMENT MEASURES								
i) Remodeling of drains having outfall into Yamuna	42	13	17	8	4	-	MCD	MCD
ii) Provision of outfall treatment plants at outfall drains-15 Nos.	15	10	5	-	-	-	PWD	PWD
iii) Desilting of Drainage Network-2100km	20	10	10	-	-	-	PWD	PWD
iv) Provision of Pump houses in low lying areas with power backup	5	5	-	-	-	-	PWD	PWD
(v) Augmentation of storm water drainage	40	12	16	8	4	-	MCD	MCD
C. REVIVAL OF MAJOR DRAINAGE NETWORK								
i) Improvement and landscaping of Major drainage channel	54	24	30	-	-	-	PWD	PWD
ii) Design of Check dams and	20	10	10	-	-	-	PWD	PWD

Strategy/Project	Cost in Rs Crore	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Capital Investment	O&M
RS IN CRORE								
depressions for Ground Water Recharge								
iii) Pilot project on Sub wells to be developed under flyover for trapping rainwater-20 Flyovers	25	5	10	10	-	-	PWD	PWD
TOTAL	231	96	101	26	8	-		

The O&M cost due to the new investment is Rs. 37.6 Crore. Public Works Department (PWD) is the authority responsible for O&M of Drainage system.

Strategy/Project	Total O&M Cost @ 5%	2007-08	2008-09	2009-10	2010-11	2011-12
A. COMPREHENSIVE STUDY OF DRAINAGE SYSTEM	1.9	0.0	0.4	0.5	0.5	0.5
B. SHORT IMPROVEMENT MEASURES	19.2	0.0	2.5	4.9	5.7	6.1
C. REVIVAL OF MAJOR DRAINAGE NETWORK	16.5	0.0	2.0	4.5	5.0	5.0
TOTAL	37.6	0.0	4.9	9.9	11.2	11.6

19.6 SOLID WASTE MANAGEMENT

The MCD is the key agency in Delhi responsible for solid waste management --- including collection, transportation treatment and disposal. As mentioned earlier, the most important issue currently is to reduce the land requirement for disposal.

19.6.1 Summary of Strategies

Theses are presented below, in order of priority:

- i. Maximising effective treatment processes for different waste streams, in order to minimize land required for land fill sites
- ii. Safeguarding the environment by ensuring well developed and sufficient land fill sites for disposal, and increasing efficiency of service delivery

(i) Maximising effective treatment processes for different waste streams, in order to minimize land required for land fill sites:

Projects include:

(a) Renewal of Existing Compost Plants

The existing composting facilities may be re-engineered, revitalized and capacity augmented with technical inputs and marketing support to process 1075 tons per day (Table below), . It is proposed to do this within a year.

Name / site of existing composting facility	Existing Capacity (TPD)	Year commissioned	Proposed capacity (TPD)	Re-engineering and revival inputs required
Okhla (MCD) - closed at present	150	1981	200	Almost complete re-engineering and revival required with new plant, machinery and equipment
Okhla (NDMC)	200	1985	250	Major re-engineering and revival required with new plant, machinery and equipment, raising the level and re-surfacing of the compost yard
Bhalsawa (Private sector owned and operated)	500	1999	500	Additional 3 hectare land required, almost complete renewal of the compost pad area, augmentation of plant and machinery
Tikri Khurd	125	2001	125	Almost complete renewal of the compost pad area, augmentation of plant and machinery

(b) Proposed New Processing Facilities - for Compost, RDF and C&D Waste

New facilities of waste processing including composting, and other processing technologies to the maximum possible extent should be installed (for example, dry combustible waste can be processed as refuse derived fuel) Proposals for these are mentioned in the table below

Facility	Location	Capacity (TPD)	Land requirement (hectares)
Construction and demolition debris	Burari	500	40.4
Construction and demolition debris	Ghumman Hera	500	40.0
Compost plant	Ghumman Hera	500	8.0
Compost plant	Narela Bawana	1000	15.0
Waste to energy	Okhla	700	6.0
Waste to energy	Timarpur	700	4.0

(ii) Safeguarding the environment by ensuring well developed and sufficient land fill sites for disposal:

Projects include

- (a) **Closure, Capping and Landscaping of Existing Landfills:** This will be accompanied with a plan for disposal of waste during the intermittent period before new sanitary landfills are commissioned and actually operated. It is proposed to undertake this in the next 2 years. The inputs required are elaborated in the table below

Name / site of existing landfill	Area (hectare)	Year started	Waste received (TPD)	Inputs required
Okhla	16.20	1994	1200	Waste received from MCD and Cantonment Board; re-grading, closure, capping, LFG extraction and collection, peripheral drain, internal road, landscaping etc.
Ghazipur	29.16	1984	2000	Waste received from MCD and NDMC; re-grading, closure, capping, LFG extraction and collection, curtain wall for chicken and fish markets, peripheral drain, internal road, landscaping etc.
Bhalsawa	21.06	1993	2200	Waste received from MCD; re-grading, closure, capping, LFG extraction and collection, peripheral drain, internal road, landscaping etc.

(b) **Proposed Sanitary Landfill Sites**

Development of sanitary landfills at identified sites (Jaitpur, Narela Bawana and Bhatti Mines - in that order). It is proposed to make the first one operational within 2 years.

(c) **Other Projects**

Massive and sustained campaign encouraging people to consciously reduce waste and segregate at source to facilitate waste processing

Sustained training for all the municipal staff as well as staff of any private operator involved in waste management for their capacity building and planning capability

Strategy/Project	Cost in Rs Crore	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for

							Capital Invest ment	O&M
RS IN CRORE								
A. RENEWAL OF EXISITING COMPOST PLANTS								
(i) Revival & Reengineering of Compost Plants at Okhla with New Plant; Machinery and Equipment	14	14	-	-	-	-	Govt /Pvt.	Pvt.
(ii) Bhalsawa & Tikri Khurd Compost Plant- Additional 3 hectare land required and complete renewal of the compost pad area and augmentation of Plant and Machinery	9	9	-	-	-	-	Govt /Pvt.	Pvt.
B. CLOUSURE, CAPPING AND LANDSCAPING OF EXISTING LANDFILLS								
(i) Re-grading, Closure, Capping, LFG extraction and Collection, Peripheral drain, internal roads, landscaping etc-Okhla, Ghazipur and Bhalsawa	109	55	54	-	-	-	Pvt.	Pvt.
C. PROPOSED PROCESSING FACILITIES								
(i) 2000 TPD C&D Waste processing plant at Ghumman Hera and Burari - increase capacity	25	10	15	-	-	-	Pvt.	Pvt.
(ii) Compost Plant at Ghumman Hera, Narela-Bawana	43	20	23	-	-	-	Pvt.	Pvt.
(iii) Waste to Energy plant at Okhla and Timarpur	100	25	25	50	-	-	Pvt.	Pvt.
D. PROPOSED SANITARY LANDFILL SITES								
(i) Development of Landfill sites at Jaitpur, Narela-Bawana and Bhatti Mines-138 Hectare	272	75	60	50	50	37	Pvt.	Pvt.
E. OTHER PROJECTS								
(i) Mechanical Street Sweeper-10 Nos	7	7	-	-	-	-	MCD	MCD
(ii) IEC awareness programme	5	1	1	1	1	1	MCD	MCD
(iii) Training of Staff and Workers (52000) as part of Training of Trainers programme	5	3	2	-	-	-	MCD	MCD
(iv) Pilot Projects for Ragpickers in Old City area; North Campus, East Delhi; West Delhi	3	2	1	-	-	-	MCD	MCD

Strategy/Project	Cost in Rs Crore	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Capital Investment	O&M
RS IN CRORE								
and South Delhi-17 Nos								
(v) Study for Quantification and Development of management model for E-waste in City	1	1	-	-	-	-	MCD	MCD
(vi) Pilot project for processing & disposal of e-waste	0	-	-	-	-	-		
TOTAL	593	222	181	101	51	38		

The O&M cost associated with the new investment is Rs. 50.8 Crore. Around 90 per cent of O&M will be borne by the private developer.

Strategy/Project	Total O&M Cost @ 3%	2007-08	2008-09	2009-10	2010-11	2011-12
A. RENEWAL OF EXISTING COMPOST PLANTS						
i) Private	2.8	0.0	0.7	0.7	0.7	0.7
B. CLOSURE, CAPPING AND LANDSCAPING OF EXISTING LANDFILLS						
i) Private	11.6	0.0	1.7	3.3	3.3	3.3
C. PROPOSED PROCESSING FACILITIES FOR C&D WASTE						
i) Private	15.2	0.0	1.7	3.5	5.0	5.0
D. PROPOSED SANITARY LANDFILL SITES						
i) Private	19.0	0.0	2.3	4.1	5.6	7.1
E. OTHER PROJECTS						
i) Private	2.2	0.0	0.4	0.6	0.6	0.6
TOTAL	50.8	0.0	6.8	12.2	15.2	16.7

19.7 HERITAGE CONSERVATION AND MANAGEMENT

The agencies involved in heritage conservation and management in Delhi include the ASI, State Department of Archaeology, Delhi Development Authority (DDA), MCD, NDMC, DUAC Heritage Conservation Committee, Delhi Waqf Board and NGO's such as INTACH.

19.7.1 Summary of Strategies

Four main strategies have been identified

- i. Development of a Heritage Resource Information Management System for integration of heritage concerns within the development plans - Master Plan, Zonal, Sub-Zonal, Area Level and assisting implementation and monitoring processes,
- ii. Capacity Building & Provision of Technical Support for Conservation & Heritage Management
- iii. Area Level Conservation, revitalisation and Regeneration strategies which include supportive and linked sub-strategies for adaptive reuse, heritage sensitive infrastructure up-gradation, provision of essential community facilities, housing rehabilitation, commercial areas, guidelines for new development in historic areas, strengthening of linkages with surrounding contemporary development
- iv. Strategies for heritage tourism, enhanced visitor experience and revenue generation, and awareness generation activities.

(i) Development of an Information Management System

The aim is to facilitate integration of heritage management within development processes for the city and to provide a knowledge base for all agencies to ensure coordinated action on heritage.

- (a) Development and maintenance of a GIS based Cultural Heritage Information System integrated with overall land information management system has been proposed..
- (b) Capacity Building of employees of the Departments involved in Heritage Conservation and Management: in order to enable them to use the GIS based information system effectively.
- (c) Provision for salvage archaeology, recording remains excavated during development and removal of artifacts to museums

(ii) Capacity Building & Provision of Technical Support for Conservation & Heritage Management

Projects include:

- (a) **Establishment of a Self-Sustaining Technical Support Conservation Centre:** This will involve Capacity building and provision of technical assistance by trained, qualified heritage professionals to owners of heritage buildings as well as buildings located within designated heritage zones. Moreover, establishment and maintenance of a laboratory for testing of historic materials, appropriate contemporary materials & monitoring performance of improved techniques and conservation interventions.
- (b) **Ensuring Technical Support for Conservation required for participatory conservation at the area level.** This will be undertaken

through training of skilled masons and craftsmen required for implementation of conservation projects.

(iii) Prioritization of Identified Heritage Zones, Precincts and Area Regeneration Programmes

Projects include

- (a) Development and implementation of a comprehensive regeneration and heritage management plan for the Central Bazaar spine of Mehrauli (similar to the successful Main Street Programme) - Adham Khans Tomb to Sohan Burj.
 - (b) Community based Heritage Management Plans for the Dargahs/ traditional Pilgrim destinations of Delhi namely (i) Qutub Sahib; (ii) Hazrat Nizamuddin; (iii) Chiragh Delhi; (iv) Ardhchini; (v) Saidulajaib and (v) Qadam Sharif.
 - (c) Upgradation and regeneration of open space structure along with urban landscape of the walled city, focusing on areas such as Chandni Chowk - Ballimaran, Maliwara, Dharampur; Kashmeri Gate Chowk & Nineteenth century bazaar Hauz Qazi etc. Also proposed is the framing of guidelines for integrated conservation management of the area between Red Fort, Jama Masjid, Chandni Chowk and Darya Ganj
 - (d) Area regeneration scheme for chowks and interface between historic components of the city with the Metro Stations, focusing on the Kashmiri Gate area. This would also include drawing up of a Heritage Management Plan and guidelines for development of the area around the Old Delhi Railway Station
 - (e) Restoration of Town Hall and Preparation of a comprehensive heritage management plan including selection of appropriate adaptive reuses
 - (f) Adaptive Reuse of Buildings or Precincts: Adaptive reuse of derelict 'havelis', heritage buildings, evacuee properties of heritage significance in Shahjehanabad and 'shikargahs'(Eg: Shri Marwari Aushadhalaya, 2766 Chatta Pratap Singh, Kinari Bazaar, Haveli Ballimaran 3014, near Chota Baradari, Jaunti Shikargah, Jaunti Village, Old St Stephens College Dara Shikoh's library, Dharamshala Rai Sahib Lala Lakshmi Narain, Ramnath Inderdevi Dharamshala, 2764 Chatta Pratap Singh, Kinari Bazaar, Shri Marwari Public Library etc.)
 - (g) Rehabilitation of historic and traditional housing stock within designated heritage zones and precincts - initially in the Walled City (Ballimaran, Maliwara, Dharampura, Churiwalan, Kinari Bazaar) and Urban villages.
- (iv) Reintegrating Previously Overlooked Heritage Components into Thematic Heritage Tourism Circuits**
- (a) In order to reintegrate overlooked heritage components, tourism circuits linking the following areas are to be developed:

- Linking Humayuns Tomb with Safdarjangs Tomb via Lodhi Gardens, Karbala, Tomb of Najaf Khan, Humayuns Tomb - Hazrat Nizamuddin-Sundar Nursery -Purana Quila & Khair-ul-Manzil- Feroz Shah Kotla
 - Daryaganj - Red Fort; Red fort-Chandni Chowk - Shahjehanabad - Fatehpuri Masjid;
 - Tughlaquabad -Chiragh Delhi - Khirki Masjid - Jahanpanah Vijay Mandal Begumpuri - Hauz Khas - Mehrauli.

- (b) Revival and Revitalisation of historic water Systems and buildings including Baolis, Embankments, Sluiceways, Talaos, Catchment areas, Hauz, Sarais and Kos Minars of Delhi
- (c) Awareness generation materials and educational tools to enable children to form cognitive maps of Historic Delhi - linked with curriculum of Delhi schools
- (d) Adaptive reuse of historic buildings as Heritage Hotel at Kashmiri Gate

Strategy/Project	Project Cost in Rs	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Cap. Inv.	O&M
Rs in Crore								
A) DEVELOPMENT OF AN INFORMATION MANAGEMENT SYSTEM								
(i) Development and maintenance of a GIS based Cultural Heritage Information System integrated with overall land information management system.	20	5	5	10	0	0	DDA, MCD	DDA, NIC AND TPD
(ii) Capacity Building of employees of the Departments involved in Heritage Conservation and Management	1	0.2	0.2	0.2	0.2	0.2	Institute of Archaeology, ASI and SPA; Institute of Heritage Management Delhi Government	MCD
(iii) Provision for recording excavated remains and removal of artifacts to museums	2	0.5	0.5	1	0	0	GNCTD Dept of Archaeology	GNCTD
B) ESTABLISHMENT OF 2 SELF-SUSTAINING TECHNICAL SUPPORT CONSERVATION CENTRES								
(i) Capacity building and provision of technical assistance by trained, qualified heritage professionals to owners of heritage buildings as	10	3	4	3	0	0	MCD - TPD HERITAGE SOCIETY, GNCTD-STATE	DDA, MCD

Strategy/Project	Project Cost in Rs	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Cap. Invnt.	O&M
Rs in Crore								
well as buildings located within designated heritage zones- Mehrauli and Shahjehanabad							ARCHEOLOGY	
(ii) Ensuring Technical Support for Conservation required for participatory conservation at the area level	1	0.2	0.2	0.2	0.2	0.2	Town Planning Dept. of MCD-MCD Heritage Society, GNCTD Dept. of Archaeology, Institute of Heritage Management Delhi Government & SPA. PWD & CPWD	TPD MCD-, GNCTD Dept. of Archaeology, INTACH & SPA.
C) PRIORITISATION OF IDENTIFIED HERITAGE ZONES AND PRECINCTS AND AREA REGENERATION PROGRAMMES								
(i) Development and implementation of a comprehensive regeneration and heritage management plan- Central Bazaar spine of Mehrauli; Adham Khans Tomb to Sohan Burj (Development of heritage area)	17	8	6	3	-	-	DDA, MCD-Heritage Cell, RWA's, INTACH	MCD
(ii) Community based Heritage Management Plans for the Dargahs/ traditional Pilgrim destinations of Delhi (Development of heritage area)	37	2	7	12	8	8	SA,ASI, MCD, WAQF BOARD, COOPERATIVE	SA,ASI, MCD, WAQF BOARD, COOPERATIVE
(iii) Upgradation of open space structure along with urban landscape of the walled city (Regeneration of old inner city area)	25	3	10	10	1	1	Community Representatives, MCD, Horticulture, Roads and	MCD Town Planning Dept. and PWD

Strategy/Project	Project Cost in Rs	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Cap. Invnt.	O&M
Rs in Crore								
							Transportation, PWD	
(iv) Area regeneration scheme for chowks and interface between historic components of the city with the Metro Stations (Regeneration of old inner city area).	20	3	8	8	1	-	GNCTD Department of Archaeology, ASI, Waqf Board, Local stakeholders and community representatives, MCD, DMRC	MCD and Delhi Waqf Board GNCTD Dept of Archaeology, ASI,
(v) Heritage Management Plan and guidelines for development of the area around the Old Delhi Railway Station	2	2	-	-	-	-	Ministry of Railways, GNCTD Department of Archaeology, Waqf Board, Local stakeholders and traders/hotel associations, community representatives, MCD,	Heritage Division, Ministry of Railways, MCD and Delhi Waqf Board GNCTD Dept of Archaeology,
(vi) a. Guidelines for integrated conservation management of the area between Red Fort, Jama Masjid, Chandni Chowk and Darya Ganj.	2	2	-	-	-	-	DDA Urban Heritage Foundation and DDA Heritage Cell, GNCTD Department of Archaeology, Waqf Board,	DDA SPA, MCD and Delhi Waqf Board ASI

Strategy/Project	Project Cost in Rs	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Cap. Invnt.	O&M
Rs in Crore								
(vi) b. Revitalization of surroundings of Jama Masjid)	234	-	50	184	-	-	GNCTD Department of Archaeology, MCD Town Planning Department - Heritage Cell/ Heritage Society , DTTDC	GNCTD Dept of Archaeology, MCD
(vii) Restoration of Town Hall and Preparation of a comprehensive heritage management plan including selection of appropriate adaptive reuses	6	4	2	-	-	-	GNCTD Dept of Archaeology, MCD Town Planning Department - Heritage Cell/ Heritage Society , DTTDC	GNCTD Dept of Archaeology, MCD
(viii) Rehabilitation of historic and traditional housing stock within designated heritage zones and precincts - initially in the Walled City (Ballimaran, Maliwara, Dharampura, Churiwalan, Kinari Bazaar) and Urban villages (Regeneration of old inner city area)	45	3	10	10	11	11	DDA Urban Heritage Foundation, MCD Town Planning Department- Heritage Cell/ Heritage Society	MCD
(ix) Regeneration of inner (Old) city area	40	5	15	10	10	-	GNCTD Department of Archaeology, Local stakeholders and community organizations representatives, MCD	MCD Heritage Cell and Society , Local stakeholders and community organizations represent

Strategy/Project	Project Cost in Rs	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Cap. Invnt.	O&M
Rs in Crore								
							Heritage Cell and Society	ntative s
D) ADAPTIVE REUSE OF BUILDINGS OR PRECINCTS								
(i) Adaptive reuse of derelict 'havelis', heritage buildings, evacuee properties of heritage significance in Shahjehanabad and 'shikargahs' in rural villages for provision of essential community facilities	35	5	13	7	5	5	GNCTD Department of Archaeology, Waqf Board, Local stakeholders and community organizations representatives, MCD Town Planning Dept., Heritage Cell and Society, and Educational institutions -SPA	MCD Heritage Cell and Society, Delhi Waqf Board GNCTD Dept of Archaeology,
(ii) Retrofitting of services and rationalisation of space utilisation in heritage buildings currently used for community purposes	8	3	5	-	-	-	Ministry of Railways, GNCTD Department of Archaeology, Waqf Board, Local stakeholders and traders/hotel associations, community representatives, MCD,	Heritage Division, Ministry of Railways, MCD and Delhi Waqf Board GNCTD Dept of Archaeology,

Strategy/Project	Project Cost in Rs	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Cap. Invnt.	O&M
Rs in Crore								
D. REINTEGRATING PREVIOUSLY OVERLOOKED HERITAGE COMPONENTS INTO THEMATIC HERITAGE TOURISM CIRCUITS								
(i) Development of thematic heritage tourism circuits as an integrated network with signage systems, heritage site linked interpretation centres/site museums, tourist facilities, low speed circuit transport for tourists - battery buses, bicycle tracks, integrated with the Metro network	60	15	15	10	10	10	DTTDC, DTC, DMRC with MCD Heritage Cell-Heritage Society, DDA, ASI, GNCTD Dept of Archaeology,	DTTDC, Hotel & Tourism Associations
(ii) Revival and Revitalisation of historic water Systems and buildings including Baolis, Embankments, Sluiceways, Talaos, Catchment areas, Hauz, Sarais and Kos Minars of Delhi	12	5	3	4	-	-	MCD, DDA, INTACH, SPA, DJB, Forest Department, Department of Irrigation and Flood Control, DTTDC	Maintenance costs could be fully borne by the private sector under PPP-SIAM or ACMA
(iii) Awareness generation materials and educational tools to enable children to form cognitive maps of Historic Delhi - linked with curriculum of Delhi schools	3	3	-	-	-	-	DTTDC & Department of Education	Department of Education
(iv) Adaptive Reuse of Heritage Hotel at Kashmirigate	2	2	0	0	0	0	Private	Private
TOTAL	582	74	154	272	47	35		

The estimated O&M cost of heritage projects is Rs 51.1 Crore. The detail breakup of the cost is given in table below:

Strategy/Project	O&M Cost in Rs @3%	2007-08	2008-09	2009-10	2010-11	2011-12
A) DEVELOPMENT OF AN INFORMATION MANAGEMENT SYSTEM	1.3	0	0.1	0.2	0.5	0.5

B) ESTABLISHMENT OF A SELF-SUSTAINING TECHNICAL SUPPORT CONSERVATION CENTRE	1.0	0	0.1	0.2	0.3	0.3
C) PRIORITISATION OF IDENTIFIED HERITAGE ZONES AND PRECINCTS AND AREA REGENERATION PROGRAMMES						
(i) Government	24.4	0	0.8	3.6	9.6	10.4
(ii) Private	15.5	0	0.1	1.2	4.5	9.7
D. ADAPTIVE REUSE OF BUILDING OR PRECINCT	3.2	0	0.2	0.8	1.0	1.1
E) REINTEGRATING PREVIOUSLY OVERLOOKED HERITAGE COMPONENTS INTO THEMATIC HERITAGE TOURISM CIRCUITS						
(i) Government	2.1	0	0.2	0.5	0.6	0.8
(ii) Private	3.7	0	0.5	0.8	1.1	1.3
TOTAL	51.2	0	2.1	7.3	17.6	24.1

19.8 URBAN ENVIRONMENT

The main agencies responsible for environmental management in Delhi are the Delhi Pollution Control Committee (DPCC), Central Pollution Control Board (CPCB).

19.8.1 Summary of Strategies

Projects have been proposed under the following strategies:

- i. Outreach and capacity building
- ii. Enhancement of forests and green cover
- iii. Mitigation of air, water and noise pollution

(i) Outreach and capacity Building

- (a) The creation of awareness on noise pollution regulations; training in best practices for the reduction in air and water pollution; & techniques of water conservation; these would cover citizens, community groups and RWAs.

(ii) Enhancement of Forests and Green Cover

Projects proposed include:

- (a) South Delhi Greenway Project: aiming at the rejuvenation of selected drains in South Delhi through the development of a continuous stretch of green along their course.

- (b) Detailed study of the biodiversity and ecology of the city: To include a complete inventorisation of all the species of flora and fauna. This would provide a base document for afforestation measures including tree planting, distribution of saplings, conservation of soil and moisture; water harvesting etc; as well as for on-going initiatives such as the conservation of the Asola Wildlife Sanctuary.
- (c) GIS based Database of natural resources of the city including forest and vegetation cover, land use pattern, water bodies and others: This is a necessary tool for the effective management of environmental resources in the city.

(iii) Mitigation of Air, Water and Noise Pollution

Projects proposed include:

- (a) **Reduction in Air Pollution:** The reduction in air pollution measures are multi agency and would be linked to automobiles, power plants, domestic and commercial diesel generating sets, open burning, industrial operations and others. Indirectly it would be responsibility of the automobile manufacturers, oil companies, generator manufacturers and others to incorporate designs and specifications which would reduce air pollution. Some of the major strategies for the reduction in the air pollution have been outlined earlier (Refer Strategies for Development). In addition to these, a project for the augmentation of the continuous air pollution monitoring system is also proposed. This would include installation of more number of air quality monitoring stations in the city.

- (b) **Water Pollution:** YAP II has focussed on preparation of master plans and DPRs for non point sources of pollution, including the dhobhi ghats, crematoria, dairy farms, slaughter houses and slum rehabilitation. Further augmentation of the plans and schemes under YAP II , addressing the Dhobi Ghats, crematoria and disposal of dairy waste have been proposed.

YAP II includes the preparation of a master plan for the water bodies in Delhi in order to decentralize waste water collection and treatment; and reuse systems to intercept polluting wastewater flow in water bodies. It is proposed to augment this master plan with a DPR to study the water quality, reclamation, catchment areas and the drainage of these water bodies under this programme. This study could also assess the potential of recharge of the ground water table through the rejuvenation of the water bodies. It is also proposed to implement the outputs of the DPR.

Augmentation of ground water monitoring stations has also been proposed.

- (c) **Noise Pollution:** The overall goal is to minimize noise pollution in the city. The enforcement of relevant regulation is critical, as well as awareness of the same among citizens. Awareness raising for the same has been proposed under the project proposed for outreach and training.

- (d) **Environmental Health:** Awareness drives amongst the community to adopt measures to keep their surroundings clean so that the incidence of diseases may be controlled will also be included in the outreach and training programmes.

Strategy/Project	Cost in Rs	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Cap. Invnt.	O&M
RS IN CRORE								
A Outreach Capacity Building								
i) Create awareness for water conservation and the techniques, training programmes for the RWAs, display & promotional material & schools, hospitals, change institutions.	16	8	8	-	-	-	DJB & NGO	-
B. Enhancement of Forest & Green Cover								
i) South Delhi Greenway Project	227	40	70	67	50	-	Private	SPV
ii) Detailed study of the biodiversity and ecology of the city. To include a complete inventorisatation of all the species of flora and fauna	0.7	0.7	-	-	-	-	Forest Department	Forest Department
iii) Protection of Delhi ridge including restoration of ecology and for demarcation of bunds.	5	2	2	1	-	-	Forest Department	Forest Department
iv) GIS based Database of natural resources of the city including forest and vegetation cover, land use pattern, water bodies and others	2	1	1	-	-	-	Forest Department	Forest Department
C. Mitigation of Air, Water and Noise Pollution								
i) Installation of 9 web linked continuous air quality monitoring stations	15	8	7	-	-	-	CPCB & DPCC	Pvt.
ii) Action projects of the Master Plan	50	25	25	-	-	-	MCD	Pvt.

Strategy/Project	Cost in Rs	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Cap. Inv.	O&M
RS IN CRORE								
for Dhobighats Sudhar Yojna under the YAP II. Creating alternate better infrastructure for the dhobis, treatment facility for the waste water and drainage in to the river								
iii) Action projects for the collection, transport and treatment of the dairy waste under the YAP II. This would include installation of treatment plants, methane generation plants and drainage system for the dairy waste	50	25	25	-	-	-	SPV & Pvt	SPV
iv) Upgradation of the crematoria in the city to make them environmentally better (air pollution treatment equipment). Master plans under the YAP II to be implemented	10	5	5	-	-	-	MCD	MCD
v) River Front Development including walkways, recreation facilities, kiosks, water sports etc	50	20	20	10	-	-	SPV	SPV
vi) Installation of 2 water quality stations for monitoring and gauging.	5	2	3	-	-	-	SPV	SPV
TOTAL	430.7	136.7	166	78	50	-		

The envisaged O&M cost of the environment projects is Rs 39.6 Crore. The details of this are given in table below.

Strategy/Project	Total O&M Cost @ 3%	2007-08	2008-09	2009-10	2010-11	2011-12
	RS IN CRORE					
B. Enhancement of Forest & Green Cover						
Private	16.6	0.0	1.2	3.3	5.3	6.8
Government	0.8	0.0	0.1	0.2	0.3	0.2
C. Mitigation of Air, Water and Noise Pollution						
Private	17.4	0.0	2.4	4.8	5.1	5.1
Government	4.8	0.0	0.6	1.2	1.5	1.5
Total	39.6	0.0	4.3	9.5	12.1	13.6

19.9 URBAN GOVERNANCE

GIS and MIS based database system for land and building records are essential in evaluation of the land situation in the city; and the assessment of property tax. This will form a common base document for the reference of all agencies involved in urban management. Moreover, effective governance will be substantially improved through interdepartmental information sharing and departmental capacity building.

Strategy/Project	Cost in Rs	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Cap. Invt.	O&M
Rs in Crore								
(i) Development of GIS/MIS based database system for Land and Building Records	5.0	2.5	2.5	-	-	-	Revenue Deptt	Revenue Deptt
(ii) Development of E-governance for various services of ULBs	1.0	0.5	0.5	-	-	-	UDD	UDD
(iii) Capacity building of the MCD, NDMC and Parastatal departments	3.0	1.0	1.0	1.0	-	-	UDD	UDD
TOTAL	9.00	4	4	1	-	-		

The O&M cost for maintenance of governance infrastructure is Rs 0.2 Crores.

19.10 OTHER DEVELOPMENT PROJECTS

While projects for land and growth management do not form part of the core focus of the JNNURM programme, this aspect remains integral to the smooth functioning and sustainable development of the city. Delhi, in particular, has

suffered in this respect, due to the peculiar institutional arrangement for growth management in the city. While this is addressed in a further chapter, a few initiatives are proposed below, aimed at easing the growth requirements of the city, and facilitating overall management.

- (a) **Decentralization of trade fair from the core city:** The location of the existing trade fair grounds, which was once peripheral with respect to the rest of the city, is now fairly central. Circulation in this area is severely affected due to the tremendous traffic generated when the annual international trade fair is held. It is proposed to relocate the trade fair grounds to more peripheral locations in the city, having good public transport connectivity through the metro.
- (b) **Redevelopment of low density government housing estates in the core city:** Large areas of land in prime areas of the city are occupied by low density government estates. These include Dev Nagar and the DIZ Area in the north; Lodi Colony, Vinay Nagar (Sarojini Nagar, Laxmi Bai Nagar, Kidwai Nagar), Sewa Nagar, R.K. Puram, Saket - MB road developments in the south, among others. Land use these areas has now become inefficient, due to the development in the surrounding areas. Moreover the ownership of these lands by public agencies represents a huge opportunity to meet the growth requirements of the city. Several cities, including New York, Shanghai, and more recently, London, have undertaken a systematic redevelopment of areas in order to meet contemporary growth needs. In view of the limited implementation of development proposals in the past, this is now an urgent requirement of the city, and can be undertaken with private sector participation in order to defray costs (after a clear structure for the same has been developed) A study, to initiate this process has been recommended. The annual O&M cost of these projects is Rs 0.2 crore.

Strategy/Project	Cost in Rs	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Cap. Inv.	O&M
Rs in Crore								
(i) Development of Trade Centres in North-East and West of City - 2 Nos	15	2	5	8	-	-	UDD	UDD
(ii) Study for Identification and Development options in Government Land in Core City area-5 Nos	5	3	2	-	-	-	UDD	UDD
TOTAL	20	5	7	8	-	-		

SUB-MISSION-2: BASIC SERVICES AND POOR

19.11 URBAN SLUMS AND POOR

The existing agency responsible for redevelopment and relocation of slums in the city is the Slum Department, under the MCD.

19.11.1 Summary of Strategies

Projects have been proposed under the following strategies:

- i. In-situ redevelopment at existing slum and JJ cluster sites, with units offered on a long term lease hold basis (with option for purchase), through a cooperative, trust, NGO etc
 - ii. Development of serviced plots, to be upgraded incrementally, at out-lying locations (relocation), for outright purchase. Connectivity to work centers to be assured.
 - iii. Development of night shelters in the city as well as at outlying locations single beds, single rooms with shared facilities for long term stay managed by trusts, or NGO's with government support
 - iv. Infrastructure up-gradation in 44 resettlement colonies, and existing relocation sites
 - v. Provision of housing (on-going) for the urban poor
 - vi. In-situ re-construction of Katras.
- (i) **In-situ redevelopment at existing slum and JJ cluster sites**, with units offered on a long term lease hold basis (with option for purchase), through a cooperative, trust, NGO etc

Group shelter schemes (G+1 and G+2) are proposed. These will offer a range of rooms and flats, and accommodate (on redevelopment) more households in comparatively smaller area and better sanitation facilities. Such schemes can be promoted by the GNCTD, through Ngo's, or trusts; or private sector participation (Private Developers).

Private Developers or Government may obtain funding from national housing finance institutions which provide low cost funds leaving enough margins for the developing agency to meet administrative and running costs. (Refer section on Institutional Reforms - Slum Housing Corporation)

Dwelling units will be provided on hire-purchase basis and the title would be transferred on payment of all installments by the beneficiaries.

The cost of the housing units will be made repayable over 15 years (maximum) carrying interests at the maximum 2 per cent over the rate at which the funds were acquired from the national financing institutions. Assuming an interest rate of about 8 %, , the EMI (equated monthly installment) on a hire purchase amount of Rs 50,000 would be approx. Rs. 400 per month.

There are 728 JJ clusters spread over an area of 650 hectare. It has been proposed to develop G+1 housing in 603 JJ clusters and G+2 housing in 125 JJ

clusters (Appendix 19-1). Some of the land at the improvement sites would be released for high value uses, such as commercial development along arterial roads of the scheme. The surpluses realized would be used to cross- subsidise costs of housing. Moreover, the development of 10 transit camps (2 in North; 3 in East; 3 South West and 2 in West) on 10 hectare land to accommodate households during redevelopment has also been proposed.

(ii) Development of serviced plots, to be upgraded incrementally, at out-lying locations (relocation)

Households which chose, and have the capacity to, own plots and construct units, can opt for relocation at outlying locations with assured connectivity to work centers. This aims to provide households with a means to improve their living standards through a process in which people themselves participate. Provision of infrastructure may be basic to keep costs low, with the option to upgrade incrementally. The projects identified under this head are (a) relocation of 5000 dwelling units from slum areas of city; (b) Development of site for 10720 dwelling units at Kanjhawala, Ghogha and Bapraula. The plot sizes are 27sqm; (c) Development of plot at Savda Ghevda accommodating around 20,000JJs; (d) Development of 10 transit camps (2 in North; 3 in East; 3 South West and 2 in West) on 10 hectare land to accommodate households during redevelopment.

(iii) Development of night shelters in the city and at outlying locations: It is proposed to develop night shelters in Walled City area, near industrial complexes, and near the relocation sites in outlying areas, in order to provide long stay facilities for low income workers --- beds or single rooms with shared facilities. Five facilities are proposed. Exact location and holding capacity would have to be determined.

(iv) Infrastructure up-gradation in 44 resettlement colonies, and 11 existing relocation sites

This includes

(a) Infrastructure upgradation of 11 existing relocation sites: This involves developing street lighting system, construction of community toilets, community halls, child care centers etc.

(b) Infrastructure upgradation in 44 resettlement colonies

(c) Revival Plan for Community Work Centers: Development of the community work centers at various locations in the city (with approximate area of 22.33m² per work space) spread over an area of 22383m². The project cost is Rs 29.23 crore.

(v) Provision of housing (on-going) for the urban poor: This extent of supply is estimated to be required to cater to the demand for low income housing until 2012. This demand will have to be met in a timely manner in order to prevent the development of new slum pockets in the city. The projects identified are

(a) Multi-Storeyed Tenements at Rohini-1770 DUs;

(b) Multi-Storeyed Tenements at Dwarka-2550 DUs;

- (c) Construction of 12560 EWS houses at village Siraspur and Sector-26, Rohini;
- (d) Worker Housing with cost effective technologies at Narela, Bhorgarh and Bawana;
- (e) Housing for Urban Poor through development of EWS Housing and
- (f) Development of Night Shelters in Walled City area and Industrial Complexes-5 Nos.
- (vi) **In-situ re-construction of Katras:** The in-situ reconstruction of 25 government owned Katras (out of 319 katras) in the walled city area has been proposed The cost for reconstruction is Rs 70 Crore.

Strategy / Project	PROJEC T COST	2007- 08	2008- 09	2009- 10	2010- 11	2011- 12	Agencies Responsible for	
							Capital Investment	O&M
Rs in Crore								
A) IN-SITU REDEVELOPMENT OF SLUMS								
(i) In situ redevelopment of Slums-providing water supply, road network, drainage and Housing etc.	783	150	200	200	100	133	Slum Department/ Private Developers/ Beneficiary	Private Developer/ Beneficiary
(i)a Upgradation of Street Lighting system	300	100	50	75	75	-	Slum Department	Community
(i)b Construction of Community Toilets-1200 Nos.	17	10	7	-	-	-	MCD	NGO
(v) Development of Sites for Transit Camps-10 Nos	80	80	-	-	-	-	MCD	MCD
B) DEVELOPMENT OF SERVICED PLOTS (RELOCATION)								
(i) Relocation of 5000 JJ Units	30	10	10	10	-	-	MCD	Cooperative
(ii) Development of Relocation Sites at Kanjhawala, Ghogha and Bapraula	217	80	55	55	27	-	DSIDC	Cooperative
(iii) Development of plots at Savda	250	100	100	50	-	-	MCD	Cooperative

Strategy / Project	PROJECT COST	2007-08	2008-09	2009-10	2010-11	2011-12	Agencies Responsible for	
							Capital Investment	O&M
Rs in Crore								
Gevra-20000JJ								
C: DEVELOPMENT OF NIGHT SHELTERS								
(vi) Development of Night Shelters in Walled City area Industrial Complexes and other sites -5 Nos	15	15	-	-	-	-	MCD	Cooperative
D INFRASTRUCTURE UPGRADATION (RESETTLEMENT COLONIES AND RESETTLEMENT SITES)								
(i) Infrastructure upgradation in 44 resettlement colonies	85	20	30	35	0	0	Slum Department/ Pvt. Developer	Pvt. Developer
(ii) Infrastructure upgradation of 11 existing relocation sites	239	50	100	50	39	0	DSIDC	Cooperative
(iii) Revival Plan for Community Work Centres (22383 m ²)	30	15	15	-	-	-	DSIDC	DSIDC
(iv) Civic Amenities like Community Halls	200	75	50	50	25		MCD	MCD
E. PROVISION OF HOUSING FOR THE URBAN POOR								
(i) Multi-Storeyed Tenements at Rohini-1770 DUs	50	25	25	-	-	-	Slum Deptt	Cooperative
(ii) Multi-Storeyed Tenements at Dwarka-2550 DUs	73	30	25	18	-	-	Slum Deptt	Cooperative
(iii) Construction of 13840 EWS houses at village Siraspur and Sector-26, Rohini	400	100	170	60	30	40	DDA	Cooperative
(iv) Worker Housing with cost effective technologies at Narela, Bhorgarh and Bawana	101	50	51	-	-	-	DSIDC	Cooperative
(v) Housing for Urban Poor through development of	750	100	100	250	150	150	Slum Department	Cooperative

Strategy / Project	PROJEC T COST	2007- 08	2008- 09	2009- 10	2010- 11	2011- 12	Agencies Responsible for	
							Capital Investment	O&M
Rs in Crore								
EWS Housing								
(vi) Rehabilitation & Resettlement of slum dwellers at Narela Phase-II & Rohini	710	200	200	150	100	60	DDA	DDA
F: IN-SITU RE-CONSTRUCTION OF KATRAS								
(i) Reconstruction of Katras in old city areas	70	20	20	20	10	-	Slum Department/ Pvt. Developer	Pvt. Develo per
TOTAL COST in Rs Crore	4400	1230	1208	1023	574	383		

The O&M cost due to the new investment is estimated at Rs. 557.3 Crore. This will be borne by various agencies, including the Slum Department, DSIDC, Private Developers, Cooperatives etc.

Strategy/Project	O&M COST @ 5%	2007-08	2008-09	2009-10	2010-11	2011-12
A) PROVISION OF BASIC INFRASTRUCTURE & GROUP HOUSING						
Private Developer/Beneficiary	85.0	0.0	7.5	17.5	27.5	32.5
Community	38.8	0.0	5.0	7.5	11.3	15.0
NGO	3.2	0.0	0.5	0.9	0.9	0.9
MCD	16.0	0.0	4.0	4.0	4.0	4.0
B. DEVELOPMENT OF SERVICE PLOTS						
Cooperative	75.7	0.0	9.5	17.8	23.5	24.9
C. DEVELOPMENT OF NIGHT SHELTERS						
MCD	3.2	0.0	0.8	0.8	0.8	0.8
D. INFRASTRUCTURE UPGRADATION						
Private Developer	12.1	0.0	1.0	2.5	4.3	4.3

Cooperative	32.0	0.0	2.5	7.5	10.0	12.0
DSIDC	5.3	0.0	0.8	1.5	1.5	1.5
MCD	28.9	0.0	3.8	6.3	8.8	10.0
E. PROVISION OF HOUSING						
Cooperative	73.4	0.0	7.8	18.8	22.7	24.2
DSIDC	17.8	0.0	2.5	5.1	5.1	5.1
Slum Department	67.5	0.0	5.0	10.0	22.5	30.0
DDA	90.0	0.0	10.0	20.0	27.5	32.5
F. IN-SITU RECONSTRUCTION						
Pvt. Developer	9.5	0.0	1.0	2.0	3.0	3.5
TOTAL COST	558.4	0.0	61.7	122.2	173.3	201.2

19.12 SUMMARY OF PROJECT INVESTMENT PLAN

The shares of major sectors as shown in figure are water supply (7%); sewerage (11.5%); road network & transportation (56%); and urban poor and slums (18%) respectively.

Funding Pattern: The projects for investment support in Delhi are eligible for Central assistance under the following conditions:

- In case any JNNURM project is also approved as externally aided project (EAP), the EAP funds can be passed through as Accelerated Central Assistance to the State Government as funds contributed by States, ULBs, FIs; and JNNURM funds can be used as Gol contribution.
- If necessary, internal resources of implementing agencies, MP or MLA Local Area Development (LAD) Funds and MLA LAD funds may be substituted for institutional finance or State share.

a. Projects under appraisal by Sub-Mission Directorate for Urban Infrastructure and Governance

Strategy/Project	Project Cost	2007-08	2008-09	2009-10	2010-11	2011-12	CG	SG	ULB/ FI
								35	15
RS IN CRORE									
SUB-MISSION-1: URBAN INFRASTRUCTURE AND GOVERNANCE									

Water Supply	1632	535	500	330	167	100	571	245	816
Sewerage	2755	605	675	605	495	375	964	413	1378
Road Network and Transportation System	13487	2886	3534	3986	1610	1471	4720	2023	6743
Storm Water Drainage	231	96	101	26	8	0	81	35	116
Solid Waste Management	593	222	181	101	51	38	208	89	297
Heritage and Conservation	582	74	154	272	46	35	204	87	291
City Environment	431	137	166	78	50		151	65	215
Urban Governance	9	4	4	1	0	0	3	1	5
Other Projects	20	5	7	8	0	0	7	3	10
Street Lighting	25	5	5	5	5	5	9	4	13
SUB-TOTAL	19740	4563	5322	5407	2427	2019	6909	2961	9870

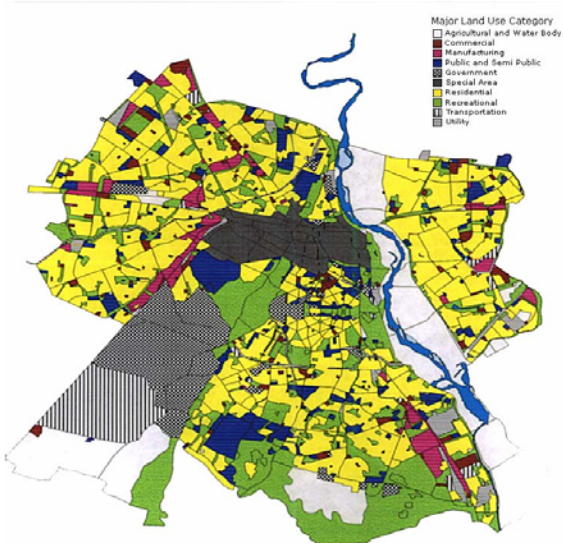
In the case of urban transport projects, the standard pattern of assistance of 35 per cent will not apply. The Cabinet Committee on Economic Affairs (CCEA), while considering any such project proposal, may decide the level of equity and/or loan to be provided by the central government.

This funding pattern is proposed for public financed projects. In case of projects incorporating public-private partnerships, the Central government's share shall not exceed the amounts prescribed.

b. Projects under appraisal by the Sub-Mission Directorate for Basic Services to the Urban Poor

Housing should not be provided free to the beneficiaries by the State Government. A minimum of 12% beneficiary contribution with bank loan should be stipulated (10 per cent in case of SC/ST/BC/OBC/PH and other weaker sections).

Strategy/Project	Project Cost	2007-08	2008-09	2009-10	2010-11	2011-12	CG	SG	ULB/FI
							35	15	50
RS IN CRORE									
SUB-MISSION-2: BASIC SERVICES AND POOR									
Urban Poor, Slum and Housing	4400	1230	1208	1023	556	383	2200	-	2200
SUB-TOTAL	4400	1230	1208	1023	556	383	2200	0	2200
TOTAL	24140	5793	6530	6430	2983	2402	9109	2961	12070



Chapter – 20 : Financial Sustenance Plan



CHAPTER - 20 FINANCIAL SUSTENANCE PLAN

20.1 INTRODUCTION

In order to assess the investment sustaining capacity of MCD, NDMC and DJB, the municipal fiscal situation has been simulated, based on a Financial Operating Plan (FOP). The FOP is essentially a multi-year forecast of municipal finances for a term of 15 years. It has been used to forecast the revenue income and operating expenditures for the period between FY 2005-06 and FY 2019-20. In order to gauge the sector-specific fiscal situation and determine options for project structuring, the FOP has been generated for the following three major accounts: (a) MCD Accounts (b); NDMC Accounts and (c): DJB Accounts for water & sewerage.

20.2 DEPARTMENT WISE INVESTMENT

The department wise capital investments are presented in the table below. Some of the projects that are under the ambit of the MCD & parastatal departments, but can be taken up with private sector participation, have been segregated and it is assumed that for these projects 50% of the funding would be from the Govt & the State Government and some part of the balance 50% would come from the private sector as equity. In this case part of the operation and maintenance would be the responsibility of the private sector, who would also agree on a revenue sharing arrangement with the MCD & parastatal departments.

In case of projects relating to urban slums and poor, it is assumed that 15% of the project cost would be borne by the beneficiaries. Taking into account the above assumptions, the proposed means of financing for the Rs 24,140 crores investment is given in the table below.

Department wise Investment	Rs Crore	2007-08	2008-09	2009-10	2010-11	2011-12
DDA	1199	312	385	250	143	109
DIMTS	6505	1305	1300	1850	1025	1025
DJB	4385	1139	1174	935	662	475
DJB & NGO	16	8	8			
DSIDC	587	195	221	105	66	
Forest Department	7.7	3.7	3	1		
Govt/Pvt.	23	23				
MCD	2780.87	730.2	819.13	735.44	270.4	225.7
NDMC	88	13	18	22	20	15
Private	1033	274	345	227	137.5	49.5
PWD	4988.5	1275.5	1683	1535	297.5	197.5
Revenue Deptt	5	2.5	2.5			

Slum Department	2111	445	450	598	335	283
STA	13	2	2	3	3	3
TRAFFIC POLICE	3	1	1	1		
UDD	24	6.5	8.5	9		
Intach	4	0.5	0.5	1	1	1
GNCTD – State Archeology	228	20	60	120	10	18
DTTDC	80	7	25	35	13	
ASI	43.13	23.3	16.37	2.56	0.6	0.3
GRAND TOTAL	24140	5795	6529	6430	2984	2402

20.3 O&M COST OF INVESTMENT

The O&M cost of various projects is Rs. 4972 Crore. In order to meet the O&M cost, due to new investments, it has been proposed to revise the unit area value, water tax (the normal revision of water tax as per DJB norms are proposed), sewerage tax and other revenue sources as discussed in the following sections.

Strategy/Project	Total Cost	Government	Private	Beneficiary	Total O&M	% age
	Rs in Crore					
SUB-MISSION-1: URBAN INFRASTRUCTURE AND GOVERNANCE						
Water Supply	1632	446.7	0.0	0.0	446.7	10%
Sewerage	2755	615.0	0.0	0.0	615.0	10%
Road Network and Transportation System	13487	1954.7	1218.5	0.0	3172.2	10%
Storm Water Drainage	231	37.4	0.0	0.0	37.4	5%
Solid Waste Management	593	50.8	0.0	0.0	50.8	3%
Heritage and Conservation	582	32.0	19.2	0.0	51.1	3%
City Environment	431	5.6	34.0	0.0	39.6	3%
Urban Governance	9	0.2	0.0	0.0	0.2	2%
Other Projects	20	0.6	0.0	0.0	0.6	3%
SUB-TOTAL	19740	3143	1272	0	4414	
SUB-MISSION-2: BASIC SERVICES AND POOR						
Urban Poor, Slum and Housing	4400	229	110	220	558	5%

SUB-TOTAL	4400	229	110	220	558	
TOTAL	24140	3372	1382	220	4972	

20.4 NEED FOR REVENUE ENHANCEMENT INITIATIVES

While the MCD and Parastatal departments can contribute part of the capital to the capital investments required by undertaking revenue enhancement initiatives, innovative methods of financial structuring of the projects will also need to be undertaken.

20.5 ASSUMPTIONS FOR REVENUE ENHANCEMENT INITIATIVES

The ability of MCD, NDMC, DJB and Parastatal Departments to sustain the investments made for the identified projects is based upon the closing balance (surplus/deficit) indication, for each of their accounts. The sustainability was determined based on the criteria that the closing balance requires indicating an annual surplus in the respective accounts.

20.5.1 Key assumptions for FOP

The income and expenditure for all three major revenue earning departments namely Municipal Corporation of Delhi (MCD), New Delhi Municipal Council (NDMC) and Delhi Jal Board (DJB) accounts (water, drainage and general) were forecast and assessed as the basis for the investment sustainance analysis. The limits for the growth rates of various revenue streams have been fixed between 3% and 15%. For those heads with growth rate less than 3%, it is assumed that it will be brought up to 3%; and for those more than 15%, it is assumed that it will be sustained at 15% at least. The guiding assumptions for forecasting income and expenditure items were:

Table 20.1: Assumptions for Forecasting Income and Expenditure - MCD

No.	Item	Assumption for Forecast	Basis (Current Rate - 2005-06)
1. MCD ACCOUNTS-TAX AND NON-TAX REVENUE SOURCES			
A	TAX REVENUE SOURCES		
1	PROPERTY TAX		
a	Persons per assessment	10	13 (2003-04) - indicating under-assessment of properties
b	Unit Area Value	15 % every three years (FY 2007-08 and 2010- 11)	UAM was adopted in FY 2004-05. The MVC revises the rates every 3 years
c	Growth in Number of Properties Assessed	3 %	Annual Growth rate of population (1991-2001): 3.85 %
d	Coverage	Will increase from 66% (2006-07) to 85% (2009-10)	Digitisation and Computerisation of property tax records will be completed by 2008-09,

No.	Item	Assumption for Forecast	Basis (Current Rate - 2005-06)
			enabling efficiencies in coverage to be effected
e	Collection Efficiency	Against Arrear Demand: 7 % in 2005-06 to 20 % in 2012 - 13 Against Current Demand: 36 % (2005-06) to 90 % in 2010-2011	--Consultations with the Property Tax Department, MCD
f	Realisation of Property Tax	MCD's revenue from property tax, before 2004-05 (year in which UAM was implemented) was approx. 775 cr. In 2004-05, it fell to 575 cr., due to the UAM values assigned. It is the aim of the ULB to return it's tax revenue to pre-2004 levels by 2007-08. It has been assumed that this will be achieved by 2008-09. at the latest (the MVC is currently reviewing the values assigned in order to achieve this)	Consultations with the Property Tax Department, MCD
2	Taxes on Vehicles and Animals	15.0%	23.3%
3	Theater Tax	3.0%	-9.4%
4	Tax on Advertisement	15.0%	21.3%
5	Tax on Building Permission	15.0%	113.2%
6	Toll tax	11.5%	11.5%
7	Duty on Transfer of Property	15.0%	21.7%
8	Tax on consumption and Sale of Electricity	15.0%	27.7%
B	TAX REVENUE SOURCES		
I	RENTS AND FEES		
1	Fines and Process Fee	15.0 %	26.4 %
2	Education Fee	14.1 %	14.2 %
3	Fines for Cattle Pounds	3.0 %	-12.8 %
4	Fees from Hospitals	4.6 %	4.6 %
5	Fees from Vehicles Licenses	3.0 %	-5.3 %
6	Tehbazari fee etc	15.0 %	320.8 %
7	Rents on Land, Buildings and Car	15.0 %	28.7 %

No.	Item	Assumption for Forecast	Basis (Current Rate - 2005-06)
	Parking		
8	Special Registration for Trades	3.0 %	2.6 %
9	Public Health and Conservancy and Street Cleaning	14.1 %	14.2 %
10	Miscellaneous	3.0 %	-11.9 %
II	OTHERS		
1	Development Charges	3.0 %	-2.3 %
2	Road Restoration Charges	3.0 %	-19.8 %
3	Reimbursement of Cost from diff schemes	15.0 %	252.2 %
4	Others	15.0 %	23.8 %
III	EXTERNAL REVENUE SOURCES		
1	Global Sharing of Taxes- Assigned	13.08 %	13.08 %
2	Education Grant- Reimbursement Grant	15.00 %	43.19 %
3	Ways and Means Advance	0 %	-45.14 %
IV	CAPITAL INCOME		
1	Existing General Grants	3.54 %	3.54 %
2	Existing Loans	15.00 %	17.68 %
2. MCD ACCOUNTS-REVENUE EXPENDITURE			
1	General Supervision, collection of revenues etc	11.81 %	11.81 %
2	Education	4.55 %	4.55 %
3	Libraries	7.47 %	7.47 %
4	Public Health	4.66 %	4.66 %
5	Medical Relief	8.91 %	8.91 %
6	Conservancy and Street Cleaning	7.88 %	7.88 %
7	Scavenging, Drains and Sewers	3.00 %	-14.91 %
8	Roads and Public Lighting	11.92 %	11.92 %
9	Markets and Slaughter Houses	6.60 %	6.60 %
10	Licensing, removal of Encroachments	3.13 %	3.13 %
11	Gardens and Open Spaces	7.49 %	7.49 %

No.	Item	Assumption for Forecast	Basis (Current Rate - 2005-06)
12	Development Charges	15.00 %	33.92 %
13	Miscellaneous	13.39 %	13.39 %
14	Building Land Acquisition and Management	7.65 %	7.65 %
15	Reserves for unforeseen	15.00 %	235.01 %
3. CAPITAL WORKS			
1	General Capital Works	3.00 %	2.79 %

Table 20.2: Assumptions for Forecasting Income and Expenditure - DJB

No.	Item	Assumption for Forecast	Basis (CAGR 2001-05)
A INCOME FROM REVENUE ACCOUNT			
1	Water charges	15.00 %, EVERY 3 RD YEAR	8.68%
2	NDMC	3.00 %	9.35%
3	MES	15.00 %	9.93%
4	Non-Plan Assistance	The non-Plan assistance has been worked out with a view to meeting the deficit between the Revenue Income and Revenue Expenditure.	14.34%
5	Misc. Income	3.00 %	113.15 %
B INCOME FROM CAPITAL ACCOUNT			
1	Grant	3.00 %	-49.35 %
2	Loan	15.00 %	16.06 %
C EXPENDITURE ON REVENUE ACCOUNT			
1	Establishment	13.79 %	13.79 %
2	Other administrative Expenses	15.00 %	172.95 %
3	Power	3.00 %	2.00 %
4	Repair & Maintenance	3.00 %	-16.28 %
5	General Stores and Chemicals	4.44 %	4.44 %
6	Cost of Raw Water	15.00 %	56.97 %
7	Property Tax	3.00 %	-52.14 %
8	Repayment of loan and Interest	10.57 %	10.57 %
9	Cess	3.00 %	-5.16 %
D EXPENDITURE ON CAPITAL ACCOUNT			
1	General Works	6.36 %	6.36 %

Table 20.3: Assumptions for Forecasting Income and Expenditure - NDMC

No.	Item	Assumption for Forecast	Basis Basis (Current Rate 2005-06)
A.	WATER AND SEWERAGE ACCOUNTS		
1	House tax		
a	Govt property	15.00 %	15.75 %
b	Private property	3.00 %	2.41 %
2	Theater Tax	15.00 %	37.21 %
3	Tax on Advertisement	15.00 %	35.32 %
4	Duty on Transfer of Property	10.23 %	10.23 %
5	Other Taxes	15.00 %	70.41 %
6	Building related receipts	10.59 %	10.59 %
B	FEES AND FINES		
1	Fines	15.00 %	26.51 %
2	Composition Fee	3.00 %	36.73 %
3	Sewer Connection fee	3.00 %	-13.44 %
4	Compounding Fee	3.00 %	-4.67 %
5	Inspection Fee	15.00 %	-51.25 %
6	Others	3.00 %	103.93 %
C	OTHERS		
1	Interest	15.00 %	99.81 %
2	Administrative Dept.	15.00 %	244.87 %
3	Social Services	3.00 %	-8.81 %
4	Electricity	3.00 %	-5.59 %
5	Water Supply	15.00 %	423.2 %
6	Other Municipal works	3.00 %	-5.38 %
D	EXTERNAL REVENUE		
1	Advances to Employees	3.00 %	-15.64 %
2	External Assistance	15.00 %	20.91 %
3	Assigned Taxes	15.00 %	23.83 %
E.	CAPITAL INCOME		
1	External Assistance	15.00 %	35.79 %
2	Deposit Works	3.00 %	-2.25 %
F	REVENUE EXPENDITURE		
1	Collection of Taxes & Duties	3.00 %	2.44 %

No.	Item	Assumption for Forecast	Basis Basis (Current Rate 2005-06)
2	Interest	3.00 %	-48.17 %
3	Administrative Dept	13.05 %	13.05 %
4	Education	3.00 %	-2.98 %
5	Medical & Public Health	3.00 %	2.31 %
6	Animal Husbandry	3.00 %	-7.64 %
7	Other social services	3.00 %	-2.53 %
8	Palika Parking	3.00 %	-17.10 %
9	Indoor Stadium	3.00 %	2.40 %
10	Night Shelters	3.00 %	-23.75 %
11	Contribution to NDF	3.00 %	-100.00 %
12	Electricity Supply	3.00 %	1.16 %
13	Water Supply	3.00 %	-3.01 %
14	Roads	15.00 %	22.07 %
15	Other Municipal Works	4.15 %	4.15 %
16	Advances to Employees	3.00 %	-22.66 %
17	External Assistance	15.00 %	37.08 %
G	CAPITAL EXPENDITURE		
1	Administrative Dept.	15.00 %	493.27 %
2	Education	3.00 %	1.19 %
3	Medical & Public Health	15.00 %	16.03 %
4	Animal Husbandry	3.00 %	-100.00 %
5	Other Social Services	3.00 %	-3.16 %
6	Electricity Supply	15.00 %	28.60 %
7	Water Supply	3.00 %	0.07 %
8	Roads	15.00 %	23.24 %
9	Other Municipal Works	3.00 %	-3.98 %
10	Deposit Works	3.00 %	-4.75 %

20.6 PROPOSED CASH FLOW OF MUNICIPAL CORPORATION OF DELHI

Based on the above FOP assumptions and financial reforms the cash flow for MCD in Rs Crore, based on actuals for FY 2005-06 and projected for the period starting in FY 2006-07 to FY 2011-12 is presented in tabular form below and in Annex. 20-1.

Table 20.4: Proposed Income and Expenditure Pattern of MCD

Description	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Opening Balance	499.8	1,532.2	4,069.8	6,348.3	8,666.5	11,103.7	13,965.0
A. TAX REVENUE							
Property Tax	486.4	558.8	798.9	1030.0	1354.2	1724.3	1747.3
Other Tax Revenue	481.8	550.1	628.2	717.5	819.4	935.5	1,067.7
Sub-Total	968.2	1,108.9	1,427.1	1,747.4	2,173.6	2,659.8	2,815.0
B. NON-TAX REVENUE							
Rent and Fees	68.8	78.2	89.1	101.5	115.8	132.1	150.9
Other Charges	177.4	198.5	222.6	250.2	281.6	317.7	358.9
External Revenue	804.6	917.7	1,046.9	1,194.3	1,362.6	1,554.6	1,773.9
Sub-Total	1050.8	1194.4	1358.6	1546.0	1760.0	2004.4	2283.7
REVENUE INCOME	2,019.0	2,303.4	2,785.7	3,293.4	3,933.6	4,664.3	5,098.7
REVENUE EXPENDITURE							
General Supervision and collection of revenues	58.6	65.5	73.3	81.9	91.6	102.4	114.5
Other administrative expenses	1,676.4	1,826.8	1,992.8	2,176.1	2,378.8	2,603.2	2,851.6
Debt Servicing	63.0	63.0	63.0	63.0	63.0	63.0	63.0
New O&M		0.0	0.0	45.9	101.1	155.4	175.9
REVENUE EXPENDITURE	1,798.0	1,955.3	2,129.0	2,367.0	2,634.5	2,924.0	3,205.0
SURPLUS/DEFICIT	221.0	348.1	656.7	926.4	1,299.0	1,740.3	1,893.7
CAPITAL INCOME							
Existing General Grants	674.5	698.4	723.1	748.7	775.2	802.6	831.0
Sub-Total	674.5	698.4	723.1	748.7	775.2	802.6	831.0
CAPITAL EXPENDITURE							
General Capital Works	748.9	771.4	794.5	818.4	842.9	868.2	894.2
JNNURM Works			370.9	427.8	373.8	141.0	118.6
Sub-Total	748.9	771.4	1,165.4	1,246.1	1,216.7	1,009.2	1,012.8
SURPLUS / DEFICIT	-74.4	-73.0	-442.3	-497.4	-441.5	-206.5	-181.8
Overall Surplus/Deficit	146.6	275.1	214.4	429.0	857.5	1,533.8	1,711.9
Closing Balance	576	851	1,066	1,495	2,352	3,886	5,598

20.7 PROPOSED CASH FLOW FOR DELHI JAL BOARD

Based on the assumption for water and sewerage accounts the cash flow of DJB has been projected for 2006-07 to 2011-12. The DJB cash flow shows a positive closing balance with improvement in collection efficiency and enhancement of user charges as presented in the table below and in Annex. 20-2. The revenue income is 73 % of the total revenue account in FY 2011-12. The revenue income has increased from Rs 663 Crore in FY 2005-06 to Rs 1969 Crore in FY 2011-12.

Table 20.5: Proposed Income and Expenditure Pattern of DJB

Description	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Opening Balance	-4846.70	-5373.15	-5840.92	-6827.82	-7799.04	-8580.61	-9114.90
A. WATER ACCOUNT							
Water charges	425.00	488.75	562.06	775.65	891.99	1025.79	1415.59
NDMC	37.86	41.40	45.27	59.41	64.97	71.05	93.23
MES	11.25	12.37	13.59	17.93	19.71	21.67	28.58
Misc. Income	32.09	36.90	42.44	58.57	67.35	77.45	106.89
Non-Plan Assistance	157.00	162.00	167.00	179.00	300.00	400.00	325.00
REVENUE INCOME	663.20	741.42	830.37	1090.56	1344.03	1595.96	1969.29
REVENUE EXPENDITURE							
General Administration	662.94	726.12	797.32	877.64	968.34	1070.87	1186.87
Additional O&M	0.00	0.00	0.00	117.42	238.45	334.75	402.94
Debt Servicing Existing	614.22	644.78	700.91	819.34	935.88	1029.67	1093.79
REVENUE EXPENDITURE	1277.16	1370.90	1498.23	1814.40	2142.67	2435.29	2683.59
SURPLUS/DEFICIT	-613.96	-629.48	-667.86	-723.85	-798.65	-839.33	-714.30
CAPITAL INCOME							
General Receipts	805.30	925.14	1062.91	1221.33	1403.47	1612.91	1853.73
SUB-TOTAL	805.30	925.14	1062.91	1221.33	1403.47	1612.91	1853.73
CAPITAL EXPENDITURE							
General Works	717.79	763.42	811.96	863.57	918.47	976.86	1038.96
Water Supply-jnNURM			267.50	257.50	165.15	83.50	50.00

Description	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Sewerage-jnNURM			302.50	347.63	302.77	247.51	187.50
SUB-TOTAL	717.79	763.42	1381.96	1468.70	1386.39	1307.87	1276.46
SURPLUS/DEFICIT	-526.45	-467.77	-986.91	-971.22	-781.57	-534.29	-137.03
Closing Balance	-5373.15	-5840.92	-6827.82	-7799.04	-8580.61	-9114.90	-9251.94

20.8 PROPOSED CASH FLOW FOR NDMC

New Delhi Municipal Council is a revenue surplus local body, with further scope of improvement of resources through reforms suggested in the above section. The NDMC cash flow shows positive closing balance with improvement in collection efficiency and enhancement of user charges as presented in table below and in Annex. 20-3.

Table 20.6: Proposed Income and Expenditure Pattern of NDMC

Description	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Opening Balance	631.30	856.6	1094.2	1315.8	1532.2	1756.8	2022.2
A. TAX REVENUE							
Property Tax	154.11	161.12	168.69	176.91	185.84	195.59	206.26
Other Tax Revenue	17.03	18.79	20.73	22.87	25.23	27.83	30.71
Sub-Total	171.14	179.91	189.42	199.78	211.07	223.42	236.97
B. NON-TAX REVENUE							
Rent and Fees	2.32	2.44	2.58	2.73	2.90	3.09	3.29
Other Charges	894.67	948.38	1007.72	1073.48	1146.55	1227.93	1318.80
External Revenue	53.23	61.09	70.12	80.49	92.42	106.14	121.91
Sub-Total	950	1012	1080	1157	1242	1338	1444
REVENUE INCOME	1121	1192	1270	1356	1453	1561	1681
REVENUE EXPENDITURE							
General Administrative expenses	258.12	291.80	329.88	372.93	421.59	476.60	538.79
Other expenses	732.67	761.67	792.47	825.27	860.29	897.77	937.99
New O&M	0.0	0.0	0.0	1.3	3.1	5.3	7.3

Description	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
New Debt Servicing	0.0	0.0	0.0	8.9	8.9	8.9	8.9
REVENUE EXPENDITURE	990.8	1053.4	1122.3	1214.24	1299.68	1394.37	1498.79
SURPLUS/DEFICIT	130.56	138.33	147.48	142.24	153.25	166.19	182.16
CAPITAL INCOME							
NDMC Contribution	0.00	0.00	12.21	13.10	17.09	9.32	9.16
Other Contribution	25.51	27.98	30.78	33.96	37.57	41.67	25.51
Sub-Total	23.33	25.51	58.50	63.53	76.68	60.87	64.57
CAPITAL EXPENDITURE							
General Capital Works	35.77	39.08	49.32	56.34	62.89	67.34	71.06
SURPLUS/DEFICIT	225.35	237.59	245.63	228.14	243.61	265.03	293.26
Closing Balance	856.6	1094.2	1339.86	1568.00	1811.61	2076.64	2369.90

20.9 CONCLUSION

By undertaking prudent fiscal measures and reforms the MCD is able to enhance its revenue from the current level of Rs. 2,019 Crore to Rs. 5,099 Crore in 2011-12, out of which income from tax sources amounts to 34 %. In this scenario, it is able to meet the O&M cost of the assets created under NURM.

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account	Current	Proposed Growth	Unit	Actuals						
				1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	
				Rs Crore						
Part I: Revenue Income and Expenditure										
OPENING BALANCE				0.2	139.6	146.0	128.0	204.5	115.6	
Revenue Receipts										
A Internal Revenues										
A1 Municipal Taxes and Rates										
1	General Tax from Urban and Rural Areas	15.00	Rev. in UAM every 3 yrs	558.9	613.1	687.0	704.1	768.9	575.8	
2	Taxes on Vehicles and Animals	23.25	%	0.4	0.4	0.5	0.6	0.9	1.1	
3	Theater Tax	-9.36	%	0.7	0.7	0.8	0.1	0.1	0.1	
4	Tax on Advertisement	21.28	%	6.9	7.6	8.5	10.4	11.6	17.5	
5	Tax on Building Permission	113.20	%	0.5	0.5	0.6	0.4	2.9	1.1	
6	Toll tax	11.49	%	46.3	50.7	56.9	54.0	68.0	78.1	
7	Duty on Transfer of Property	21.75	%	64.3	70.5	79.0	113.0	143.4	167.9	
8	Tax on consumption and Sale of Electricity	27.68	%	54.6	59.9	67.1	75.9	84.4	162.5	
	Sub Total- A1			732.6	803.6	900.4	958.5	1,080.3	1,004.0	
A2 Rents and Fees										
1	Fines and Process Fee	26.39	%	3.2	3.5	3.3	3.6	6.7	8.9	
2	Education Fee	14.15	%	0.2	0.5	0.5	0.3	0.2	0.3	
3	Fines for Cattle Pounds	-12.82	%	0.0	0.0	0.0	0.2	0.2	0.1	
4	Fees from Hospitals	4.64	%	1.0	1.1	1.3	1.1	1.2	1.2	
5	Fees from Vehicles Licenses	-5.28	%	0.0	0.0	0.0	0.7	1.2	0.3	
6	Tehbazari fee etc	320.86	%	0.0	0.0	0.0	3.9	3.8	28.2	
7	Rents on Land, Buildings and Car Parkings	28.74	%	3.8	4.2	4.1	8.0	8.3	11.4	
8	Special Registration for Trades	2.56	%	3.4	3.7	4.0	4.3	4.0	3.8	
9	Public Health, Conservancy & Street Cleaning	14.14	%	3.1	4.8	3.2	4.2	4.9	5.0	
10	Miscellaneous	-11.95	%	3.8	3.9	4.2	1.3	1.3	1.3	
	Sub Total- A2			18.5	21.6	20.6	27.7	31.7	60.5	
A3 Others										
1	Development Charges	-2.34	%	13.7	15.0	13.9	3.8	6.0	6.0	
2	Road Restoration Charges	-19.85	%	38.5	42.2	64.5	41.7	17.1	5.6	
3	Reimbursement of Cost from diff schemes	252.19	%	0.0	0.0	3.1	24.8	62.6	9.8	
4	Others	23.87	%	82.3	89.0	158.7	129.0	39.4	87.0	
	Sub Total- A3			134.5	146.2	240.2	199.3	125.1	108.4	
	Grand Total A (A1, A2 and A3)			885.5	971.3	1,161.2	1,185.5	1,237.1	1,172.9	
B External Revenues										
1	Global Sharing of Taxes- Assigned	13.08	%	190.0	227.5	247.9	296.8	295.3	347.0	
2	Education Grant- Reimbursement Grant	43.19	%	103.3	94.0	101.5	117.2	119.7	358.4	
3	Ways and Means Advance	-45.14	%	180.0	80.0	60.0	60.0	0.0	310.0	
	Sub Total- B			473.3	401.5	409.4	474.0	415.0	1,015.4	
	Grand Total Receipts			1,358.9	1,372.8	1,570.7	1,659.5	1,652.1	2,188.4	
Revenue Expenditure										

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account	Current	Proposed Growth	Unit	Actuals						
				1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	
				Rs Crore						
1	General Supervision, collection of revenues	11.81	11.81	%	38.2	48.0	53.2	53.1	56.1	65.7
2	Education	4.55	4.55	%	372.0	338.9	333.2	369.4	390.8	455.9
3	Libraries	7.47	7.47	%	1.2	0.7	0.7	0.7	1.0	1.3
4	Public Health	4.66	4.66	%	39.0	37.4	37.7	39.2	40.9	48.4
5	Medical Relief	8.91	8.91	%	125.4	124.5	127.5	147.1	166.2	190.3
6	Conservancy and Street Cleaning	7.88	7.88	%	260.2	263.4	276.0	299.0	334.8	378.6
7	Scavenging, Drains and Sewers	-14.91	3.00	%	73.4	11.1	8.8	11.4	11.2	11.6
8	Roads and Public Lighting	11.92	11.92	%	121.3	107.7	154.7	132.0	152.3	192.6
9	Markets and Slaughter Houses	6.60	6.60	%	3.2	3.3	2.7	4.9	4.5	3.3
10	Licensing, removal of Encroachments	3.13	3.13	%	2.0	2.4	2.2	2.2	2.1	2.3
11	Gardens and Open Spaces	7.49	7.49	%	58.2	61.9	65.1	63.9	69.8	82.7
12	Development Charges	33.92	15.00	%	3.1	4.4	3.8	2.7	2.1	6.1
13	Miscellaneous	13.39	13.39	%	239.7	337.6	479.0	443.1	396.6	405.4
14	Building Land Acquisition and Management	7.65	7.65	%	21.9	24.1	22.3	21.8	26.8	30.9
15	Reserves for unforeseen	235.01	15.00	%	0.0	7.6	3.8	33.5	22.4	75.3
B. Debt Servicing										
1	Debt Servicing-Existing				0.0	0.0	0.0	0.0	0.0	0.0
2	Debt Servicing- loan component of JNNURM (funds received from Center & State - to be ploughed back into revolving fund)									
C. Additional O&M										
1	Additional O&M of New Assets through JNNURM investment									
Grand Total Expenditure					1,358.9	1,372.8	1,570.6	1,624.1	1,677.7	1,950.5
REVENUE ACCOUNT STATUS (SURPLUS/DEFICIT)					-0.1	0.0	0.0	35.4	-25.6	237.9

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account	Current	Proposed Growth	Unit	Actuals						
				1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	
Rs Crore										
Part II: Capital Income and Expenditure										
Capital Receipts										
A Grants										
1	Existing General Grants	3.54	3.54	%	0.0	515.0	549.5	629.2	600.5	651.5
2	Grant-cum-soft loan from State Government - JNNURM(£)									
3	Grant-cum-soft loan from Central Government - JNNURM(£)									
	Total- Grants				0.0	515.0	549.5	629.2	600.5	651.5
B Loans										
1	Existing General Loans	17.68	15.00	%	0.0	62.9	69.9	105.1	112.8	151.8
2	Loan from Financial Institutions-JNNURM (expenses will be meet from internal revenues)									
	Total- Loans				0.0	62.9	69.9	105.1	112.8	151.8
	Grand Total Capital Income				0.0	577.9	619.4	734.2	713.2	803.3
Capital Expenditure										
1	General Capital Works	2.79	3.00		0.0	596.3	612.6	693.3	776.4	727.1
2	Solid Waste Management									
3	Roads									
4	Heritage Conservation									
5	Slum and Poverty Alleviation									
6	City Environment									
7	Storm Water Drainage									
	Grand Total Capital Expenditure				0.0	596.3	612.6	693.3	776.4	727.1
	CAPITAL ACCOUNT STATUS (SURPLUS/DEFICIT)				0.0	-18.3	6.7	41.0	-63.2	76.2
	OVERALL ACCOUNT STATUS-CURRENT YEAR				-0.1	-18.3	6.7	76.4	-88.8	314.1
	CLOSING BALANCE				0	121	153	204	116	430
Summary of Municipal Accounts										
	Opening Balance				0.2	139.6	146.0	128.0	204.5	115.6
Receipts										
1	Revenue Account				1,358.9	1,372.8	1,570.7	1,659.5	1,652.1	2,188.4
2	Capital Account				0.0	577.9	619.4	734.2	713.2	803.3
3	Advances and Deposits				0.0	0.0	0.0	0.0	0.0	0.0
	Grand Municipal Income				1,358.9	1,950.8	2,190.0	2,393.7	2,365.3	2,991.7
Expenditure										
1	Revenue Account				1,358.9	1,372.8	1,570.6	1,624.1	1,677.7	1,950.5
2	Capital Account				0.0	596.3	612.6	693.3	776.4	727.1
3	Advances and Deposits				0.0	0.0	0.0	0.0	0.0	0.0

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account	Current	Proposed Growth	Unit	Actuals					
				1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
				Rs Crore					
Grand Municipal Expenditure				1,358.9	1,969.1	2,183.3	2,317.3	2,454.2	2,677.6
Municipal Account Status									
Closing Balance				0.1	121.3	152.7	204.5	115.6	429.7
Summary of Financial Indicators									
1 Operating Ratio				1.0	1.00	1.0	1.0	1.0	0.9
2 Capital Utilisation Ratio				-	1.0	1.0	0.9	1.1	0.9
3 % Establishment cost in Total Rev.Exp.*				0.0	0.0	0.0	0.0	0.0	0.0
4 % of Revenue Income on Establishment*				0.0	0.0	0.0	0.0	0.0	0.0
5 Debt Servicing Cost as % of Rev.Inc.*				0.0	0.0	0.0	0.0	0.0	0.0

* - Figures not available

(1) Figures shown as zero since project expenditure figures relate only to ULB contribution (50 %) of total project cost. In actual fact, balance 50% of project costs will be met through grant-cum-loan from the Central and State Governments

(2) It has been assumed that interest on Loan is being waived and hence not considered for debt s

(3) Receipt of Ways and Means advance from the State Government has been assumed to be Nil. However, any Shortage on the over all account would be met through Ways & Means advance.

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account		Current	Proposed Growth	Unit					
					2005-06	2006-07	2007-08	2008-09	2009-10
Part I: Revenue Income and Expenditure									
OPENING BALANCE					429.7	576.3	851.4	1,065.8	1,494.8
Revenue Receipts									
A Internal Revenues									
A1 Municipal Taxes and Rates									
1	General Tax from Urban and Rural Areas		15.00	Rev. in UAM every 3 yrs	486.4	558.8	798.9	1030.0	1354.2
2	Taxes on Vehicles and Animals	23.25	15.00	%	1.3	1.5	1.7	1.9	2.2
3	Theater Tax	-9.36	3.00	%	0.4	0.4	0.5	0.5	0.5
4	Tax on Advertisement	21.28	15.00	%	12.0	12.9	14.0	15.0	15.9
5	Tax on Building Permission	113.20	15.00	%	1.1	1.3	1.4	1.6	1.8
6	Toll tax	11.49	11.49	%	87.0	97.0	108.2	120.6	134.5
7	Duty on Transfer of Property	21.75	15.00	%	193.1	222.1	255.4	293.7	337.8
8	Tax on consumption and Sale of Electricity	27.68	15.00	%	186.8	214.9	247.1	284.1	326.8
Sub Total- A1					968.2	1,108.9	1,427.1	1,747.4	2,173.6
A2 Rents and Fees									
1	Fines and Process Fee	26.39	15.00	%	10.2	11.8	13.5	15.6	17.9
2	Education Fee	14.15	14.15	%	0.3	0.3	0.4	0.4	0.5
3	Fines for Cattle Pounds	-12.82	3.00	%	0.1	0.1	0.1	0.2	0.2
4	Fees from Hospitals	4.64	4.64	%	1.3	1.3	1.4	1.5	1.5
5	Fees from Vehicles Licenses	-5.28	3.00	%	0.3	0.3	0.3	0.3	0.3
6	Tehbazari fee etc	320.86	15.00	%	32.5	37.3	42.9	49.4	56.8
7	Rents on Land, Buildings and Car Parkings	28.74	15.00	%	13.1	15.1	17.3	19.9	22.9
8	Special Registration for Trades	2.56	3.00	%	3.9	4.0	4.2	4.3	4.4
9	Public Health, Conservancy & Street Cleaning	14.14	14.14	%	5.7	6.6	7.5	8.5	9.7
10	Miscellaneous	-11.95	3.00	%	1.3	1.4	1.4	1.4	1.5
Sub Total- A2					68.8	78.2	89.1	101.5	115.8
A3 Others									
1	Development Charges	-2.34	3.00	%	10.0	10.3	10.6	11.0	11.3
2	Road Restoration Charges	-19.85	3.00	%	36.0	37.0	38.2	39.3	40.5
3	Reimbursement of Cost from diff schemes	252.19	15.00	%	19.2	22.1	25.4	29.2	33.6
4	Others	23.87	15.00	%	112.2	129.0	148.4	170.7	196.2
Sub Total- A3					177.4	198.5	222.6	250.2	281.6
Grand Total A (A1, A2 and A3)					1,214.4	1,385.7	1,738.8	2,099.1	2,571.0
B External Revenues									
1	Global Sharing of Taxes- Assigned	13.08	13.08	%	392.4	443.7	501.8	567.4	641.7
2	Education Grant- Reimbursement Grant	43.19	15.00	%	412.2	474.0	545.1	626.9	720.9
3	Ways and Means Advance	-45.14	0.00	%	0.0	0.0	0.0	0.0	0.0
Sub Total- B					804.6	917.7	1,046.9	1,194.3	1,362.6
Grand Total Receipts					2,019.0	2,303.4	2,785.7	3,293.4	3,933.6
Revenue Expenditure									

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account		Current	Proposed Growth	Unit					
					2005-06	2006-07	2007-08	2008-09	2009-10
1	General Supervision, collection of revenues	11.81	11.81	%	58.6	65.5	73.3	81.9	91.6
2	Education	4.55	4.55	%	393.8	411.7	430.5	450.0	470.5
3	Libraries	7.47	7.47	%	1.0	1.1	1.1	1.2	1.3
4	Public Health	4.66	4.66	%	42.3	44.3	46.4	48.5	50.8
5	Medical Relief	8.91	8.91	%	159.9	174.2	189.7	206.6	225.0
6	Conservancy and Street Cleaning	7.88	7.88	%	325.8	351.5	379.1	409.0	441.2
7	Scavenging, Drains and Sewers	-14.91	3.00	%	21.9	22.6	23.2	23.9	24.7
8	Roads and Public Lighting	11.92	11.92	%	160.5	179.7	201.1	225.1	251.9
9	Markets and Slaughter Houses	6.60	6.60	%	3.9	4.1	4.4	4.7	5.0
10	Licensing, removal of Encroachments	3.13	3.13	%	2.3	2.4	2.4	2.5	2.6
11	Gardens and Open Spaces	7.49	7.49	%	71.9	77.3	83.1	89.3	96.0
12	Development Charges	33.92	15.00	%	4.3	4.9	5.6	6.5	7.5
13	Miscellaneous	13.39	13.39	%	434.9	493.2	559.2	634.1	719.0
14	Building Land Acquisition and Management	7.65	7.65	%	26.5	28.5	30.7	33.1	35.6
15	Reserves for unforeseen	235.01	15.00	%	27.3	31.4	36.2	41.6	47.8
B. Debt Servicing									
1	Debt Servicing-Existing				63.0	63.0	63.0	63.0	63.0
2	Debt Servicing- loan component of JNNURM (funds received from Center & State - to be ploughed back into revolving fund)					0.0	0.0	0.0	0.0
C. Additional O&M									
1	Additional O&M of New Assets through JNNURM investment					0.0	0.0	45.9	101.1
Grand Total Expenditure					1,798.0	1,955.3	2,129.0	2,367.0	2,634.5
REVENUE ACCOUNT STATUS (SURPLUS/DEFICIT)					221.0	348.1	656.7	926.4	1,299.0

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account	Current	Proposed Growth	Unit	2005-06	2006-07	2007-08	2008-09	2009-10	
Part II: Capital Income and Expenditure									
Capital Receipts									
A Grants									
1	Existing General Grants	3.54	3.54	%	674.5	698.4	723.1	748.7	775.2
2	Grant-cum-soft loan from State Government - JNNURM(£)					0.0	0.0	0.0	0.0
3	Grant-cum-soft loan from Central Government - JNNURM(£)					0.0	0.0	0.0	0.0
	Total- Grants				674.5	698.4	723.1	748.7	775.2
B Loans									
1	Existing General Loans	17.68	15.00	%		0.0	0.0	0.0	0.0
2	Loan from Financial Institutions-JNNURM (expenses will be meet from internal revenues)						0.0	0.0	0.0
	Total- Loans				0.0	0.0	0.0	0.0	0.0
	Grand Total Capital Income				674.5	698.4	723.1	748.7	775.2
Capital Expenditure									
1	General Capital Works	2.79	3.00		748.9	771.4	794.5	818.4	842.9
2	Solid Waste Management						12.8	8.0	6.3
3	Roads						180.0	282.2	267.7
4	Heritage Conservation						5.6	19.1	36.8
5	Slum and Poverty Alleviation						145.0	86.0	55.0
6	City Environment						15.0	15.5	0.0
7	Storm Water Drainage						12.5	17.0	8.0
	Grand Total Capital Expenditure				748.9	771.4	1,165.4	1,246.1	1,216.7
	CAPITAL ACCOUNT STATUS (SURPLUS/DEFICIT)				-74.4	-73.0	-442.3	-497.4	-441.5
	OVERALL ACCOUNT STATUS-CURRENT YEAR				146.6	275.1	214.4	429.0	857.5
	CLOSING BALANCE				576	851	1,066	1,495	2,352
Summary of Municipal Accounts									
	Opening Balance								
Receipts									
1	Revenue Account				2,019.0	2,303.4	2,785.7	3,293.4	3,933.6
2	Capital Account				674.5	698.4	723.1	748.7	775.2
3	Advances and Deposits				0.0	0.0	0.0	0.0	0.0
	Grand Municipal Income				2,693.5	3,001.8	3,508.8	4,042.1	4,708.8
Expenditure									
1	Revenue Account				1,798.0	1,955.3	2,129.0	2,367.0	2,634.5
2	Capital Account				748.9	771.4	1,165.4	1,246.1	1,216.7
3	Advances and Deposits				0.0	0.0	0.0	0.0	0.0

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account	Current	Proposed Growth	Unit	2005-06	2006-07	2007-08	2008-09	2009-10
Grand Municipal Expenditure				2,546.9	2,726.7	3,294.4	3,613.1	3,851.3
Municipal Account Status								
Closing Balance				576.3	851.4	1,065.8	1,494.8	2,352.3
Summary of Financial Indicators								
1 Operating Ratio				0.9	0.8	0.8	0.7	0.7
2 Capital Utilisation Ratio				1.1	1.1	1.6	1.7	1.6
3 % Establishment cost in Total Rev.Exp.*								
4 % of Revenue Income on Establishment*								
5 Debt Servicing Cost as % of Rev.Inc.*								

* - Figures not available

(1) Figures shown as zero since project expenditure figures relate only to ULB contribution (50 %) of total project cost. In actual fact, balance 50% of project costs will be met through grant-cum-loan from the Central and State Governments

(2) It has been assumed that interest on Loan is being waived and hence not considered

(3) Receipt of Ways and Means advance from the State Government has been assumed to be Nil. However, any Shortage on the over all account would be met through Ways & Means advance.

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account	Current	Proposed Growth	Unit	Forecast				
				2010-11	2011-12	2012-13	2013-14	2014-15
Rs Crore								
Part I: Revenue Income and Expenditure								
OPENING BALANCE				2,352.3	3,886.1	5,598.0	7,552.92	9,871.27
Revenue Receipts								
A Internal Revenues								
A1 Municipal Taxes and Rates								
1	General Tax from Urban and Rural Areas	15.00	Rev. in UAM every 3 yrs	1724.3	1747.3	1686.4	1828.4	1814.8
2	Taxes on Vehicles and Animals	23.25	%	2.6	2.9	3.4	3.9	4.5
3	Theater Tax	-9.36	%	0.5	0.5	0.5	0.5	0.6
4	Tax on Advertisement	21.28	%	16.7	16.6	17.5	18.3	19.2
5	Tax on Building Permission	113.20	%	1.6	1.7	1.8	1.9	2.0
6	Toll tax	11.49	%	149.9	167.2	186.4	207.8	231.7
7	Duty on Transfer of Property	21.75	%	388.4	446.7	513.7	590.8	679.4
8	Tax on consumption and Sale of Electricity	27.68	%	375.8	432.1	497.0	571.5	657.2
	Sub Total- A1			2,659.8	2,815.0	2,906.6	3,223.1	3,409.3
A2 Rents and Fees								
1	Fines and Process Fee	26.39	%	20.6	23.7	27.2	31.3	36.0
2	Education Fee	14.15	%	0.6	0.7	0.8	0.9	1.0
3	Fines for Cattle Pounds	-12.82	%	0.2	0.2	0.2	0.2	0.2
4	Fees from Hospitals	4.64	%	1.6	1.7	1.7	1.8	1.9
5	Fees from Vehicles Licenses	-5.28	%	0.3	0.3	0.3	0.4	0.4
6	Tehbazari fee etc	320.86	%	65.3	75.1	86.4	99.3	114.2
7	Rents on Land, Buildings and Car Parkings	28.74	%	26.4	30.3	34.9	40.1	46.1
8	Special Registration for Trades	2.56	%	4.5	4.7	4.8	5.0	5.1
9	Public Health, Conservancy & Street Cleaning	14.14	%	11.1	12.7	14.5	16.5	18.9
10	Miscellaneous	-11.95	%	1.5	1.6	1.6	1.7	1.7
	Sub Total- A2			132.1	150.9	172.4	197.1	225.5
A3 Others								
1	Development Charges	-2.34	%	11.6	12.0	12.3	12.7	13.1
2	Road Restoration Charges	-19.85	%	41.7	42.9	44.2	45.6	46.9
3	Reimbursement of Cost from diff schemes	252.19	%	38.7	44.5	51.1	58.8	67.6
4	Others	23.87	%	225.7	259.5	298.5	343.2	394.7
	Sub Total- A3			317.7	358.9	406.2	460.3	522.4
	Grand Total A (A1, A2 and A3)			3,109.6	3,324.8	3,485.2	3,880.6	4,157.2
B External Revenues								
1	Global Sharing of Taxes- Assigned	13.08	%	725.6	820.5	927.9	1049.3	1186.5
2	Education Grant- Reimbursement Grant	43.19	%	829.0	953.4	1096.4	1260.9	1450.0
3	Ways and Means Advance	-45.14	%	0.0	0.0	0.0	0.0	0.0
	Sub Total- B			1,554.6	1,773.9	2,024.3	2,310.1	2,636.5
	Grand Total Receipts			4,664.3	5,098.7	5,509.5	6,190.7	6,793.7
Revenue Expenditure								

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account	Current	Proposed Growth	Unit	Forecast					
				2010-11	2011-12	2012-13	2013-14	2014-15	
				Rs Crore					
1	General Supervision, collection of revenues	11.81	11.81	%	102.4	114.5	128.0	143.1	160.0
2	Education	4.55	4.55	%	491.9	514.3	537.6	562.1	587.6
3	Libraries	7.47	7.47	%	1.4	1.5	1.6	1.7	1.9
4	Public Health	4.66	4.66	%	53.1	55.6	58.2	60.9	63.8
5	Medical Relief	8.91	8.91	%	245.0	266.9	290.7	316.6	344.8
6	Conservancy and Street Cleaning	7.88	7.88	%	476.0	513.5	553.9	597.6	644.6
7	Scavenging, Drains and Sewers	-14.91	3.00	%	25.4	26.2	26.9	27.7	28.6
8	Roads and Public Lighting	11.92	11.92	%	281.9	315.5	353.1	395.2	442.3
9	Markets and Slaughter Houses	6.60	6.60	%	5.3	5.7	6.1	6.5	6.9
10	Licensing, removal of Encroachments	3.13	3.13	%	2.7	2.7	2.8	2.9	3.0
11	Gardens and Open Spaces	7.49	7.49	%	103.2	111.0	119.3	128.2	137.8
12	Development Charges	33.92	15.00	%	8.6	9.9	11.3	13.0	15.0
13	Miscellaneous	13.39	13.39	%	815.3	924.4	1,048.2	1,188.6	1,347.7
14	Building Land Acquisition and Management	7.65	7.65	%	38.3	41.3	44.4	47.8	51.5
15	Reserves for unforeseen	235.01	15.00	%	55.0	63.2	72.7	83.6	96.2
B. Debt Servicing									
1	Debt Servicing-Existing				63.0	63.0	63.0	63.0	63.0
2	Debt Servicing- loan component of JNNURM (funds received from Center & State - to be ploughed back into revolving fund)				0.0	0.0	205.0	205.0	205.0
C. Additional O&M									
1	Additional O&M of New Assets through JNNURM investment				155.4	175.9	175.9	175.9	175.9
Grand Total Expenditure					2,924.0	3,205.0	3,698.9	4,019.6	4,375.6
REVENUE ACCOUNT STATUS (SURPLUS/DEFICIT)					1,740.3	1,893.7	2,015.5	2,376.2	2,623.0

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account	Current	Proposed Growth	Unit	Forecast					
				2010-11	2011-12	2012-13	2013-14	2014-15	
Part II: Capital Income and Expenditure									
Capital Receipts									
A Grants									
1	Existing General Grants	3.54	3.54	%	802.6	831.0	860.4	890.9	922.4
2	Grant-cum-soft loan from State Government - JNNURM(£)				0.0	0.0	0.0	0.0	0.0
3	Grant-cum-soft loan from Central Government - JNNURM(£)				0.0	0.0	0.0	0.0	0.0
	Total- Grants				802.6	831.0	860.4	890.9	922.4
B Loans									
1	Existing General Loans	17.68	15.00	%	0.0	0.0	0.0	0.0	0.0
2	Loan from Financial Institutions-JNNURM (expenses will be meet from internal revenues)				0.0	0.0			
	Total- Loans				0.0	0.0	0.0	0.0	0.0
	Grand Total Capital Income				802.6	831.0	860.4	890.9	922.4
Capital Expenditure									
1	General Capital Works	2.79	3.00		868.2	894.2	921.1	948.7	977.2
2	Solid Waste Management				6.3	6.3	0.0	0.0	0.0
3	Roads				113.5	109.0	0.0	0.0	0.0
4	Heritage Conservation				4.7	3.4	0.0	0.0	0.0
5	Slum and Poverty Alleviation				12.5	0.0	0.0	0.0	0.0
6	City Environment				0.0	0.0	0.0	0.0	0.0
7	Storm Water Drainage				4.0	0.0			
	Grand Total Capital Expenditure				1,009.2	1,012.8	921.1	948.7	977.2
	CAPITAL ACCOUNT STATUS (SURPLUS/DEFICIT)				-206.5	-181.8	-60.6	-57.8	-54.7
	OVERALL ACCOUNT STATUS-CURRENT YEAR				1,533.8	1,711.9	1,954.9	2,318.4	2,568.3
	CLOSING BALANCE				3,886	5,598	7,553	9,871	12,440
Summary of Municipal Accounts									
	Opening Balance								
Receipts									
1	Revenue Account				4,664.3	5,098.7	5,509.5	6,190.7	6,793.7
2	Capital Account				802.6	831.0	860.4	890.9	922.4
3	Advances and Deposits				0.0	0.0	0.0	0.0	0.0
	Grand Municipal Income				5,466.9	5,929.8	6,369.9	7,081.6	7,716.1
Expenditure									
1	Revenue Account				2,924.0	3,205.0	3,698.9	4,019.6	4,375.6
2	Capital Account				1,009.2	1,012.8	921.1	948.7	977.2
3	Advances and Deposits				0.0	0.0	0.0	0.0	0.0

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account	Current	Proposed Growth	Unit	Forecast				
				2010-11	2011-12	2012-13	2013-14	2014-15
Grand Municipal Expenditure				3,933.1	4,217.9	4,620.0	4,968.3	5,352.8
Municipal Account Status								
Closing Balance				3,886.1	5,598.0	7,552.9	9,871.3	12,439.6
Summary of Financial Indicators								
1 Operating Ratio				0.6	0.6	0.6	0.6	0.6
2 Capital Utilisation Ratio				1.3	1.2	1.1	1.1	1.1
3 % Establishment cost in Total Rev.Exp.*								
4 % of Revenue Income on Establishment*								
5 Debt Servicing Cost as % of Rev.Inc.*								

* - Figures not available

(1) Figures shown as zero since project expenditure figures relate only to ULB contribution (50 %) of total project cost. In actual fact, balance 50% of project costs will be met through grant-cum-loan from the Central and State Governments

(2) It has been assumed that interest on Loan is being waived and hence not considered

(3) Receipt of Ways and Means advance from the State Government has been assumed to be Nil. However, any Shortage on the over all account would be met through Ways & Means advance.

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account		Current	Proposed Growth	Unit				
					2015-16	2016-17	2017-18	2018-19
Part I: Revenue Income and Expenditure								
OPENING BALANCE					12,439.57	15,320.22	18,810.23	22,831.57
Revenue Receipts								
A Internal Revenues								
A1 Municipal Taxes and Rates								
1	General Tax from Urban and Rural Areas		15.00	Rev. in UAM every 3 yrs	1814.5	2053.9	2085.6	2124.2
2	Taxes on Vehicles and Animals	23.25	15.00	%	5.1	5.9	6.8	7.8
3	Theater Tax	-9.36	3.00	%	0.6	0.6	0.6	0.6
4	Tax on Advertisement	21.28	15.00	%	20.0	20.8	21.5	22.5
5	Tax on Building Permission	113.20	15.00	%	2.0	2.1	2.2	2.3
6	Toll tax	11.49	11.49	%	258.3	288.0	321.1	358.0
7	Duty on Transfer of Property	21.75	15.00	%	781.3	898.5	1033.3	1188.3
8	Tax on consumption and Sale of Electricity	27.68	15.00	%	755.8	869.2	999.6	1149.5
Sub Total- A1					3,637.6	4,138.9	4,470.6	4,853.1
A2 Rents and Fees								
1	Fines and Process Fee	26.39	15.00	%	41.4	47.6	54.7	62.9
2	Education Fee	14.15	14.15	%	1.1	1.3	1.5	1.7
3	Fines for Cattle Pounds	-12.82	3.00	%	0.2	0.2	0.2	0.2
4	Fees from Hospitals	4.64	4.64	%	2.0	2.1	2.2	2.3
5	Fees from Vehicles Licenses	-5.28	3.00	%	0.4	0.4	0.4	0.4
6	Tehbazari fee etc	320.86	15.00	%	131.3	151.0	173.7	199.8
7	Rents on Land, Buildings and Car Parkings	28.74	15.00	%	53.1	61.0	70.2	80.7
8	Special Registration for Trades	2.56	3.00	%	5.3	5.4	5.6	5.7
9	Public Health, Conservancy & Street Cleaning	14.14	14.14	%	21.5	24.6	28.1	32.0
10	Miscellaneous	-11.95	3.00	%	1.8	1.8	1.9	1.9
Sub Total- A2					258.1	295.4	338.4	387.7
A3 Others								
1	Development Charges	-2.34	3.00	%	13.5	13.9	14.3	14.7
2	Road Restoration Charges	-19.85	3.00	%	48.3	49.8	51.3	52.8
3	Reimbursement of Cost from diff schemes	252.19	15.00	%	77.8	89.5	102.9	118.3
4	Others	23.87	15.00	%	453.9	522.0	600.3	690.4
Sub Total- A3					593.5	675.2	768.8	876.2
Grand Total A (A1, A2 and A3)					4,489.2	5,109.5	5,577.8	6,117.0
B External Revenues								
1	Global Sharing of Taxes- Assigned	13.08	13.08	%	1341.7	1517.3	1715.8	1940.2
2	Education Grant- Reimbursement Grant	43.19	15.00	%	1667.5	1917.6	2205.3	2536.1
3	Ways and Means Advance	-45.14	0.00	%	0.0	0.0	0.0	0.0
Sub Total- B					3,009.2	3,434.9	3,921.0	4,476.3
Grand Total Receipts					7,498.5	8,544.4	9,498.8	10,593.3
Revenue Expenditure								

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account		Current	Proposed Growth	Unit				
					2015-16	2016-17	2017-18	2018-19
1	General Supervision, collection of revenues	11.81	11.81	%	178.9	200.1	223.7	250.1
2	Education	4.55	4.55	%	614.4	642.3	671.5	702.0
3	Libraries	7.47	7.47	%	2.0	2.2	2.3	2.5
4	Public Health	4.66	4.66	%	66.7	69.8	73.1	76.5
5	Medical Relief	8.91	8.91	%	375.5	409.0	445.4	485.1
6	Conservancy and Street Cleaning	7.88	7.88	%	695.4	750.2	809.3	873.1
7	Scavenging, Drains and Sewers	-14.91	3.00	%	29.4	30.3	31.2	32.2
8	Roads and Public Lighting	11.92	11.92	%	495.0	554.0	620.1	694.0
9	Markets and Slaughter Houses	6.60	6.60	%	7.4	7.8	8.4	8.9
10	Licensing, removal of Encroachments	3.13	3.13	%	3.1	3.2	3.3	3.4
11	Gardens and Open Spaces	7.49	7.49	%	148.1	159.2	171.1	184.0
12	Development Charges	33.92	15.00	%	17.3	19.8	22.8	26.2
13	Miscellaneous	13.39	13.39	%	1,528.2	1,732.9	1,964.9	2,228.0
14	Building Land Acquisition and Management	7.65	7.65	%	55.4	59.6	64.2	69.1
15	Reserves for unforeseen	235.01	15.00	%	110.6	127.2	146.3	168.2
B. Debt Servicing								
1	Debt Servicing-Existing				63.0	63.0	0.0	0.0
2	Debt Servicing- loan component of JNNURM (funds received from Center & State - to be ploughed back into revolving fund)				205.0	205.0	205.0	202.0
C. Additional O&M								
1	Additional O&M of New Assets through JNNURM investment				175.9	175.9	175.9	175.9
Grand Total Expenditure					4,771.4	5,211.6	5,638.6	6,181.3
REVENUE ACCOUNT STATUS (SURPLUS/DEFICIT)					2,932.1	3,537.8	4,065.2	4,614.1

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account		Current	Proposed Growth	Unit				
					2015-16	2016-17	2017-18	2018-19
Part II: Capital Income and Expenditure								
Capital Receipts								
A Grants								
1	Existing General Grants	3.54	3.54	%	955.1	988.9	1023.9	1060.1
2	Grant-cum-soft loan from State Government - JNNURM(£)				0.0	0.0	0.0	0.0
3	Grant-cum-soft loan from Central Government - JNNURM(£)				0.0	0.0	0.0	0.0
	Total- Grants				955.1	988.9	1,023.9	1,060.1
B Loans								
1	Existing General Loans	17.68	15.00	%	0.0	0.0	0.0	0.0
2	Loan from Financial Institutions-JNNURM (expenses will be meet from internal revenues)							
	Total- Loans				0.0	0.0	0.0	0.0
	Grand Total Capital Income				955.1	988.9	1,023.9	1,060.1
Capital Expenditure								
1	General Capital Works	2.79	3.00		1006.5	1036.7	1067.8	1099.8
2	Solid Waste Management				0.0	0.0	0.0	0.0
3	Roads				0.0	0.0	0.0	0.0
4	Heritage Conservation				0.0	0.0	0.0	0.0
5	Slum and Poverty Alleviation				0.0	0.0	0.0	0.0
6	City Environment				0.0	0.0	0.0	0.0
7	Storm Water Drainage							
	Grand Total Capital Expenditure				1,006.5	1,036.7	1,067.8	1,099.8
	CAPITAL ACCOUNT STATUS (SURPLUS/DEFICIT)				-51.4	-47.8	-43.9	-39.7
	OVERALL ACCOUNT STATUS-CURRENT YEAR				2,880.7	3,490.0	4,021.3	4,574.4
	CLOSING BALANCE				15,320	18,810	22,832	27,406
Summary of Municipal Accounts								
	Opening Balance							
Receipts								
1	Revenue Account				7,498.5	8,544.4	9,498.8	10,593.3
2	Capital Account				955.1	988.9	1,023.9	1,060.1
3	Advances and Deposits				0.0	0.0	0.0	0.0
	Grand Municipal Income				8,453.6	9,533.3	10,522.7	11,653.4
Expenditure								
1	Revenue Account				4,771.4	5,211.6	5,638.6	6,181.3
2	Capital Account				1,006.5	1,036.7	1,067.8	1,099.8
3	Advances and Deposits				0.0	0.0	0.0	0.0

Annexure 20-1- Financial Plan

Municipal Corporation of Delhi

Head of Account	Current	Proposed Growth	Unit				
				2015-16	2016-17	2017-18	2018-19
Grand Municipal Expenditure				5,777.9	6,248.3	6,706.3	7,281.1
Municipal Account Status							
Closing Balance				15,320.2	18,810.2	22,831.6	27,405.9
Summary of Financial Indicators							
1 Operating Ratio				0.6	0.6	0.6	0.6
2 Capital Utilisation Ratio				1.1	1.0	1.0	1.0
3 % Establishment cost in Total Rev.Exp.*							
4 % of Revenue Income on Establishment*							
5 Debt Servicing Cost as % of Rev.Inc.*							

* - Figures not available

(1) Figures shown as zero since project expenditure figures relate only to ULB contribution (50 %) of total project cost. In actual fact, balance 50% of project costs will be met through grant-cum-loan from the Central and State Governments

(2) It has been assumed that interest on Loan is being waived and hence not considered

(3) Receipt of Ways and Means advance from the State Government has been assumed to be Nil. However, any Shortage on the over all account would be met through Ways & Means advance.

Annexure 20-2											
Delhi Jal Board - Financial Plan (On Accrual Basis)											
Head of Account	Current	Proposed	Unit	Actual							
				2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	
				Rs in Crore							
Opening Balance				-3088.42	-3646.58	-3842.26	-4309.54	-4846.70	-5373.15	-5840.92	
Revenue Account											
Revenue Receipts											
A Water & Sewage Supply											
1 Water charges	8.68	15.00%	%	177.70	190.10	166.59	206.45	425.00	488.75	562.06	
2 NDMC	9.35	9.35%	%	26.12	30.31	25.90	34.65	37.86	41.40	45.27	
3 MES	9.93	9.93%	%	7.65	7.08	7.56	10.30	11.25	12.37	13.59	
4 Misc. Income	113.15	15.00%	%	2.94	3.31	41.82	29.51	32.09	36.90	42.44	
5 Non-Plan Assistance	14.34		%	190.00	610.64	301.00	284.00	157.00	162.00	167.00	
TOTAL REVENUE INCOME				404.41	841.44	542.87	564.91	663.20	741.42	830.37	
Revenue Expenditure											
A. General Administration											
1 Establishment	13.79	13.79%	%	161.57	177.66	192.49	238.07	270.91	308.28	350.80	
2 Other administrative Expenses	172.95	15.00%	%	0.00	0.00	10.80	29.49	80.49	92.57	106.45	
3 Power	2.00	3.00%	%	222.41	271.14	224.36	236.00	240.71	247.93	255.37	
4 Repair & Maintenance	-16.28	3.00%	%	26.85	22.09	21.71	15.76	13.19	13.59	14.00	
5 General Stores and Chemicals	4.44	4.44%	%	14.99	14.21	15.84	17.08	17.84	18.63	19.46	
6 Cost of Raw Water	56.97	15.00%	%	5.69	7.38	22.94	22.00	34.53	39.71	45.67	
8 Property Tax	-52.14	3.00%	%	45.62	75.87	27.23	5.00	2.39	2.46	2.54	
9 Cess	-5.16	3.00%	%	3.54	3.78	0.00	3.02	2.86	2.95	3.04	
B. Additional O&M											
1 Additional O&M for New assets									0.00	0.00	
C. Debt Servicing											
1 Debt Servicing-Existing	10.57	10.57%	%	410.97	499.14	509.88	555.52	614.22	644.78	700.91	
2 Debt Servicing-Proposed											
TOTAL REVENUE EXPENDITURE				891.64	1071.28	1025.26	1121.94	1277.16	1370.90	1498.23	
Status- Surplus/Deficit				-487.22	-229.84	-482.39	-557.03	-613.96	-629.48	-667.86	
Capital Account											
Capital Receipts											
A. Grants											
1 General Grants	-49.35	3.00%	%	60.02	58.15	7.50	7.80	8.03	8.28	8.52	
2 Central Government Grants-JNNURM										0.0	
3 State Government Grants-JNNURM										0.0	

Annexure 20-2											
Delhi Jal Board - Financial Plan (On Accrual Basis)											
Head of Account	Current	Proposed	Unit	<i>Actual</i>							
				2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	
				<i>Rs in Crore</i>							
B. Loans											
1	General Receipts	16.06	15.00%	%	439.45	570.45	601.23	686.96	797.27	916.86	1054.39
2	Water Supply-JNNURM										
3	Sewerage-JNNURM										
4	Others										
Total Capital Receipts					499.47	628.60	608.73	694.76	805.30	925.14	1062.91
Capital Expenditure											
1	General Works	6.36	6.36%	%	570.41	594.44	593.62	674.89	717.79	763.42	811.96
2	Water Supply-JNNURM										267.50
3	Sewerage-JNNURM										302.50
4	Others										
Total Capital Expenditure					570.41	594.44	593.62	674.89	717.79	763.42	1381.96
Status- Surplus/Deficit					-70.94	34.16	15.11	19.87	87.51	161.71	-319.04
OVERALL ACCOUNT STATUS					-558.16	-195.68	-467.28	-537.16	-526.45	-467.77	-986.91
Closing Balance					-3646.58	-3842.26	-4309.54	-4846.70	-5373.15	-5840.92	-6827.82
NOTES ON ASSUMPTIONS:											
1	The non-Plan assistance has been worked out with a view to meeting the deficit between the Revenue Income and Revenue Expenditure.										

Annexure 20-2											
Delhi Jal Board - Financial Plan (On Accrual Basis)											
Head of Account	Current	Proposed	Unit	Forecast							
				2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	
Rs in Crore											
Opening Balance				-6827.82	-7799.04	-8580.61	-9114.90	-9251.94	-8851.48	-8030.38	
Revenue Account											
Revenue Receipts											
A Water & Sewage Supply											
1	Water charges	8.68	15.00%	%	775.65	891.99	1025.79	1415.59	1627.93	1872.12	2583.53
2	NDMC	9.35	9.35%	%	59.41	64.97	71.05	93.23	101.95	111.49	146.30
3	MES	9.93	9.93%	%	17.93	19.71	21.67	28.58	31.42	34.54	45.56
4	Misc. Income	113.15	15.00%	%	58.57	67.35	77.45	106.89	122.92	141.36	195.07
5	Non-Plan Assistance	14.34		%	179.00	300.00	400.00	325.00	322.00	320.00	127.00
TOTAL REVENUE INCOME					1090.56	1344.03	1595.96	1969.29	2206.23	2479.51	3097.47
Revenue Expenditure											
A. General Administration											
1	Establishment	13.79	13.79%	%	399.18	454.25	516.90	588.20	669.33	761.66	866.72
2	Other administrative Expenses	172.95	15.00%	%	122.42	140.78	161.90	186.19	214.11	246.23	283.17
3	Power	2.00	3.00%	%	263.03	270.92	279.05	287.42	296.05	304.93	314.07
4	Repair & Maintenance	-16.28	3.00%	%	14.42	14.85	15.30	15.76	16.23	16.71	17.22
5	General Stores and Chemicals	4.44	4.44%	%	20.32	21.23	22.17	23.15	24.18	25.25	26.38
6	Cost of Raw Water	56.97	15.00%	%	52.52	60.40	69.46	79.88	91.86	105.64	121.48
8	Property Tax	-52.14	3.00%	%	2.61	2.69	2.77	2.86	2.94	3.03	3.12
9	Cess	-5.16	3.00%	%	3.13	3.22	3.32	3.42	3.52	3.63	3.74
B. Additional O&M											
1	Additional O&M for New assets				117.42	238.45	334.75	402.94	402.94	402.94	402.94
C. Debt Servicing											
1	Debt Servicing-Existing	10.57	10.57%	%	819.34	935.88	1029.67	1093.79	1110.23	1062.18	963.65
2	Debt Servicing-Proposed										
TOTAL REVENUE EXPENDITURE					1814.40	2142.67	2435.29	2683.59	2831.39	2932.19	3002.47
Status- Surplus/Deficit					-723.85	-798.65	-839.33	-714.30	-625.17	-452.69	94.99
Capital Account											
Capital Receipts											
A. Grants											
1	General Grants	-49.35	3.00%	%	8.78	9.04	9.31	9.59	9.88	10.18	10.48
2	Central Government Grants-JNNURM				0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	State Government Grants-JNNURM				0.0	0.0	0.0	0.0	0.0	0.0	0.0

Annexure 20-2											
Delhi Jal Board - Financial Plan (On Accrual Basis)											
Head of Account	Current	Proposed	Unit	Forecast							
				2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	
Rs in Crore											
B. Loans											
1	General Receipts	16.06	15.00%	%	1212.55	1394.43	1603.59	1844.13	2120.75	2438.87	2804.70
2	Water Supply-JNNURM										
3	Sewerage-JNNURM										
4	Others										
Total Capital Receipts					1221.33	1403.47	1612.91	1853.73	2130.63	2449.04	2815.18
Capital Expenditure											
1	General Works	6.36	6.36%	%	863.57	918.47	976.86	1038.96	1105.01	1175.26	1249.97
2	Water Supply-JNNURM				257.50	165.15	83.50	50.00			
3	Sewerage-JNNURM				347.63	302.77	247.51	187.50			
4	Others										
Total Capital Expenditure					1468.70	1386.39	1307.87	1276.46	1105.01	1175.26	1249.97
Status- Surplus/Deficit					-247.37	17.08	305.04	577.27	1025.63	1273.79	1565.21
OVERALL ACCOUNT STATUS					-971.22	-781.57	-534.29	-137.03	400.46	821.10	1660.21
Closing Balance					-7799.04	-8580.61	-9114.90	-9251.94	-8851.48	-8030.38	-6370.17
NOTES ON ASSUMPTIONS:											
1	The non-Plan assistance has been worked out with a view to meeting the deficit between the Revenue Income and Revenue Expenditure.										

Annexure 20-2										
Delhi Jal Board - Financial Plan (On Accrual Basis)										
Head of Account	Current	Proposed	Unit	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	
				Opening Balance				-6370.17	-3932.75	-531.48
Revenue Account										
Revenue Receipts										
A Water & Sewage Supply										
1	Water charges	8.68	15.00%	%	2971.06	3416.72	4715.07	5422.33	6235.68	8605.24
2	NDMC	9.35	9.35%	%	159.99	174.96	229.59	251.06	274.55	360.28
3	MES	9.93	9.93%	%	50.09	55.06	72.63	79.84	87.76	115.77
4	Misc. Income	113.15	15.00%	%	224.33	257.98	356.02	409.42	470.83	649.75
5	Non-Plan Assistance	14.34		%	120.00	110.00	0.00	0.00	0.00	0.00
	TOTAL REVENUE INCOME				3525.47	4014.71	5373.30	6162.65	7068.82	9731.03
Revenue Expenditure										
A. General Administration										
1	Establishment	13.79	13.79%	%	986.27	1122.31	1277.12	1453.27	1653.73	1881.84
2	Other administrative Expenses	172.95	15.00%	%	325.64	374.49	430.66	495.26	569.55	654.98
3	Power	2.00	3.00%	%	323.50	333.20	343.20	353.49	364.10	375.02
4	Repair & Maintenance	-16.28	3.00%	%	17.73	18.26	18.81	19.38	19.96	20.56
5	General Stores and Chemicals	4.44	4.44%	%	27.55	28.77	30.05	31.38	32.78	34.23
6	Cost of Raw Water	56.97	15.00%	%	139.70	160.66	184.76	212.47	244.34	280.99
8	Property Tax	-52.14	3.00%	%	3.22	3.31	3.41	3.51	3.62	3.73
9	Cess	-5.16	3.00%	%	3.85	3.96	4.08	4.21	4.33	4.46
B. Additional O&M										
1	Additional O&M for New assets				402.94	402.94	402.94	402.94	402.94	402.94
C. Debt Servicing										
1	Debt Servicing-Existing	10.57	10.57%	%	764.42	471.93	63.78	-582.75		
2	Debt Servicing-Proposed									
	TOTAL REVENUE EXPENDITURE				2994.81	2919.84	2758.80	2393.17	3295.34	3658.75
Status- Surplus/Deficit					530.65	1094.88	2614.50	3769.48	3773.48	6072.28
Capital Account										
Capital Receipts										
A. Grants										
1	General Grants	-49.35	3.00%	%	10.80	11.12	11.45	11.80	12.15	12.52
2	Central Government Grants-JNNURM				0.0	0.0	0.0	0.0	0.0	0.0
3	State Government Grants-JNNURM				0.0	0.0	0.0	0.0	0.0	0.0

Annexure 20-2										
Delhi Jal Board - Financial Plan (On Accrual Basis)										
Head of Account	Current	Proposed	Unit	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	
				B. Loans						
1 General Receipts	16.06	15.00%	%	3225.40	3709.21	4265.59	4905.43	5641.25	6487.44	
2 Water Supply-JNNURM										
3 Sewerage-JNNURM										
4 Others										
Total Capital Receipts				3236.20	3720.33	4277.05	4917.23	5653.40	6499.95	
Capital Expenditure										
1 General Works	6.36	6.36%	%	1329.43	1413.94	1503.83	1599.43	1701.11	1809.25	
2 Water Supply-JNNURM										
3 Sewerage-JNNURM										
4 Others										
Total Capital Expenditure				1329.43	1413.94	1503.83	1599.43	1701.11	1809.25	
Status- Surplus/Deficit				1906.77	2306.39	2773.22	3317.80	3952.29	4690.70	
OVERALL ACCOUNT STATUS				2437.42	3401.26	5387.71	7087.28	7725.77	10762.98	
Closing Balance				-3932.75	-531.48	4856.23	11943.51	19669.28	30432.26	
NOTES ON ASSUMPTIONS:										
1	The non-Plan assistance has been worked out with a view to meeting the deficit between the Revenue Income and Revenue Expenditure.									

Annexure 20-3- New Delhi Municipal Council- Financial Plan

					Actuals			
Head of Account	Current	Proposed	Unit	2000-01	2001-02	2002-03	2003-04	
				In Rs. Crore				
PART I: REVENUE INCOME & EXPENDITURE								
<i>Receipts</i>								
<i>Opening Balance</i>					6.35	74.24	280.41	
A. TAXES, DUTIES & OTHER PRINCIPAL REVENUE								
Taxes:								
House tax								
Govt property	15.75	15.00	%	7.17	9.24	15.76	16.14	
Private property	2.41	3.00	%	82.29	101.02	117.05	111.74	
Theater Tax	37.21	15.00	%	0.01	0.01	0.00	0.01	
Tax on Advertisement	35.32	15.00	%	0.03	0.05	0.04	0.08	
Duty on Transfer of Property	10.23	10.23	%	7.10	6.10	5.58	7.95	
Other Taxes	70.41	15.00	%	0.00	0.02	0.02	0.02	
Building related receipts	10.59	10.59	%	1.32	1.18	1.40	0.84	
Fees & Fines:								
Fines	26.51	15.00	%	0.14	0.07	0.26	0.21	
Composition Fee	36.73	3.00	%	1.12	1.41	5.04	1.58	
Sewer Connection fee	-13.44	3.00	%	0.11	0.15	0.14	0.17	
Compounding Fee	-4.67	3.00	%	0.13	0.20	0.21	0.12	
Inspection Fee	-51.25	15.00	%	0.01	0.17	0.00	0.61	
Others	103.93	3.00	%	0.06	0.06	0.40	0.06	
Sub-Total (A)				99.47	119.67	145.89	139.54	
B. OTHERS								
Interest	99.81	15.00	%	30.28	24.55	32.53	27.43	
Administrative Dept.	244.87	15.00	%	6.83	0.41	5.32	0.46	
Social Services	-8.81	3.00	%	4.24	3.43	3.31	3.43	
Electricity	-5.59	3.00	%	470.32	483.71	534.14	534.70	
Water Supply	423225.00	15.00	%	0.00	2.02	0.00	15.02	
Other Municipal works	-5.38	3.00	%	94.23	97.14	112.40	97.92	
Sub-Total (B)				605.89	611.26	687.71	678.96	

Head of Account	Current	Proposed	Unit	2000-01	2001-02	2002-03	2003-04
				In Rs. Crore			
C. EXTERNAL REVENUE							
Advances to Employees	-15.64	3.00	%	1.56	1.46	1.29	1.38
External Assistance	20.91	15.00	%	12.39	15.53	17.10	15.60
Assigned Taxes	23.83	15.00	%	3.36	4.28	6.28	6.39
<i>Sub-Total (C)</i>				17.32	21.27	24.67	23.36
TOTAL RECEIPTS (A+B+C)				722.68	752.20	858.27	841.86
Expenditure							
Collection of Taxes & Duties	2.44	3.00	%	0.92	0.95	1.20	1.27
Interest	-48.17	3.00	%	42.85	7.11	5.44	4.83
Administrative Dept	13.05	13.05	%	110.58	125.15	167.92	139.38
Education	-2.98	3.00	%	38.88	37.74	39.38	43.53
Medical & Public Health	2.31	3.00	%	51.05	51.69	51.08	63.60
Animal Husbandry	-7.64	3.00	%	0.38	0.40	0.46	0.40
Other social services	-2.53	3.00	%	17.86	22.04	18.75	19.20
Palika Parking	-17.10	3.00	%	0.88	0.87	0.68	0.57
Indoor Stadium	2.40	3.00	%	0.62	0.80	0.73	0.64
Night Shelters	-23.75	3.00	%	0.43	0.31	0.35	0.39
Contribution to NDF	-100.00	3.00	%	2.98	0.00	0.00	0.00
Electricity Supply	1.16	3.00	%	268.66	326.44	330.80	344.49
Water Supply	-3.01	3.00	%	54.40	45.05	37.96	46.87
Roads	22.07	15.00	%	4.25	8.41	10.35	11.32
Other Municipal Works	4.15	4.15	%	55.36	52.18	58.09	61.59
Advances to Employees	-22.66	3.00	%	1.44	1.43	1.04	0.94
External Assistance	37.08	15.00	%	40.23	12.25	10.46	7.34
B. Debt Servicing							
Debt Servicing-Existing					0.0	0.0	0.0
Debt Servicing- Proposed							
C. Additional O&M							
Additional O&M of New Assets through JNNURM investment							
TOTAL EXPENDITURE				691.79	692.83	734.66	746.38

Head of Account	Current	Proposed	Unit	2000-01	2001-02	2002-03	2003-04
				In Rs. Crore			
Surplus/Deficit				30.89	59.37	123.61	95.48
PART II : CAPITAL INCOME & EXPENDITURE							
Receipts							
External Assistance	35.79	15.00	%	6.98	8.02	6.72	13.57
Deposit Works	-2.25	3.00	%	19.86	10.66	18.41	7.92
Contribution to NDMC			%				
Contribution State and Central			%				
TOTAL				26.83	18.68	25.13	21.49
Expenditure							
Administrative Dept.	493.27	15.00	%	0.01	0.10	0.10	0.03
Education	1.19	3.00	%	1.27	1.27	1.16	1.24
Medical & Public Health	16.03	15.00	%	4.44	5.23	5.13	3.40
Animal Husbandry	-100.00	3.00	%	0.02	0.00	0.08	0.00
Other Social Sevices	-3.16	3.00	%	4.19	3.86	3.86	3.27
Electricity Supply	28.60	15.00	%	3.96	8.42	4.66	9.99
Water Supply	0.07	3.00	%	1.21	2.15	1.60	0.98
Roads	23.24	15.00	%	7.98	6.64	6.09	14.52
Other Municipal Works	-3.98	3.00	%	16.76	11.02	10.33	15.56
Deposit Works	-4.75	3.00	%	15.60	12.16	8.03	6.11
New Development Works							
TOTAL				55.44	50.84	41.04	55.10
Surplus/Deficit				-24.55	8.53	82.57	40.38
OVERALL ACCOUNTS				6.35	67.89	206.18	135.87
CLOSING BALANCE				6.35	74.24	280.41	416.28

Annexure 20-3- New Delhi Municipal Council- Financial Plan

	Head of Account	Current	Proposed	2004-05	2005-06	2006-07	2007-08	2008-09
	PART I: REVENUE INCOME & EXPENDITURE							
<i>Receipts</i>								
	Opening Balance			416.28	631.30	856.64	1094.23	1339.86
	A. TAXES, DUTIES & OTHER PRINCIPAL REVENUE							
	Taxes:							
	House tax							
	Govt property	15.75	15.00	17.28	19.87	22.85	26.28	30.22
	Private property	2.41	3.00	130.32	134.23	138.26	142.40	146.68
	Theater Tax	37.21	15.00	0.01	0.01	0.01	0.01	0.01
	Tax on Advertisement	35.32	15.00	0.10	0.11	0.13	0.15	0.17
	Duty on Transfer of Property	10.23	10.23	13.28	14.63	16.13	17.78	19.60
	Other Taxes	70.41	15.00	0.03	0.04	0.04	0.05	0.06
	Building related receipts	10.59	10.59	2.02	2.24	2.47	2.73	3.02
	Fees & Fines:							
	Fines	26.51	15.00	0.16	0.18	0.21	0.24	0.28
	Composition Fee	36.73	3.00	1.59	1.64	1.69	1.74	1.79
	Sewer Connection fee	-13.44	3.00	0.01	0.01	0.01	0.01	0.01
	Compounding Fee	-4.67	3.00	0.13	0.13	0.13	0.14	0.14
	Inspection Fee	-51.25	15.00	0.25	0.28	0.32	0.37	0.43
	Others	103.93	3.00	0.07	0.07	0.07	0.08	0.08
	Sub-Total (A)			165.24	173.45	182.34	191.99	202.50
	B. OTHERS							
	Interest	99.81	15.00	178.94	205.78	236.65	272.15	312.97
	Administrative Dept.	244.87	15.00	1.28	1.47	1.69	1.94	2.23
	Social Services	-8.81	3.00	4.17	4.30	4.42	4.56	4.69
	Electricity	-5.59	3.00	537.34	553.46	570.06	587.16	604.78
	Water Supply	423225.00	15.00	14.46	16.63	19.12	21.99	25.29
	Other Municipal works	-5.38	3.00	109.75	113.04	116.43	119.93	123.52
	Sub-Total (B)			845.93	894.67	948.38	1007.72	1073.48

Head of Account	Current	Proposed	2004-05	2005-06	2006-07	2007-08	2008-09
C. EXTERNAL REVENUE							
Advances to Employees	-15.64	3.00	1.06	1.10	1.13	1.16	1.20
External Assistance	20.91	15.00	34.05	39.16	45.03	51.79	59.56
Assigned Taxes	23.83	15.00	11.29	12.98	14.93	17.16	19.74
<i>Sub-Total (C)</i>			46.40	53.23	61.09	70.12	80.49
TOTAL RECEIPTS (A+B+C)			1057.57	1121.35	1191.80	1269.83	1356.47
Expenditure							
Collection of Taxes & Duties	2.44	3.00	1.33	1.37	1.41	1.45	1.50
Interest	-48.17	3.00	1.89	1.94	2.00	2.06	2.12
Administrative Dept	13.05	13.05	228.33	258.12	291.80	329.88	372.93
Education	-2.98	3.00	45.72	47.09	48.50	49.95	51.45
Medical & Public Health	2.31	3.00	73.51	75.71	77.99	80.32	82.73
Animal Husbandry	-7.64	3.00	0.35	0.36	0.37	0.38	0.39
Other social services	-2.53	3.00	20.57	21.19	21.82	22.48	23.15
Palika Parking	-17.10	3.00	0.55	0.57	0.58	0.60	0.62
Indoor Stadium	2.40	3.00	0.86	0.89	0.92	0.94	0.97
Night Shelters	-23.75	3.00	0.08	0.08	0.09	0.09	0.09
Contribution to NDF	-100.00	3.00	1.00	1.03	1.06	1.09	1.13
Electricity Supply	1.16	3.00	367.27	378.29	389.64	401.33	413.37
Water Supply	-3.01	3.00	61.13	62.97	64.85	66.80	68.80
Roads	22.07	15.00	9.44	10.86	12.49	14.36	16.52
Other Municipal Works	4.15	4.15	87.16	90.78	94.55	98.47	102.56
Advances to Employees	-22.66	3.00	0.62	0.64	0.66	0.68	0.70
External Assistance	37.08	15.00	33.83	38.90	44.74	51.45	59.16
B. Debt Servicing							
Debt Servicing-Existing			0.0	0.0	0.0	0.0	0.0
Debt Servicing- Proposed							14.7
C. Additional O&M							
Additional O&M of New Assets through JNNURM investment					0.0	0.0	1.3
TOTAL EXPENDITURE			933.65	990.79	1053.47	1122.35	1214.24

	Head of Account	Current	Proposed	2004-05	2005-06	2006-07	2007-08	2008-09
	Surplus/Deficit			123.93	130.56	138.33	147.48	142.24
PART II : CAPITAL INCOME & EXPENDITURE								
Receipts								
	External Assistance	35.79	15.00	10.74	12.35	14.20	16.33	18.78
	Deposit Works	-2.25	3.00	10.66	10.98	11.31	11.65	12.00
	Contribution to NDMC					0.00	0.00	0.00
	Contribution State and Central					0.00	0.00	0.00
	TOTAL			21.40	23.33	25.51	27.98	30.78
Expenditure								
	Administrative Dept.	493.27	15.00	0.03	0.03	0.04	0.04	0.05
	Education	1.19	3.00	0.76	0.78	0.81	0.83	0.86
	Medical & Public Health	16.03	15.00	3.34	3.84	4.42	5.08	5.85
	Animal Husbandry	-100.00	3.00	0.00	0.00	0.00	0.00	0.00
	Other Social Sevices	-3.16	3.00	1.95	2.00	2.06	2.13	2.19
	Electricity Supply	28.60	15.00	3.22	3.70	4.26	4.89	5.63
	Water Supply	0.07	3.00	0.40	0.42	0.43	0.44	0.45
	Roads	23.24	15.00	9.61	11.05	12.71	14.62	16.81
	Other Municipal Works	-3.98	3.00	7.80	8.03	8.27	8.52	8.78
	Deposit Works	-4.75	3.00	5.74	5.91	6.08	6.27	6.46
	New Development Works					0.00	6.50	9.27
	TOTAL			32.84	35.77	39.08	49.32	56.34
	Surplus/Deficit			91.08	94.79	99.25	98.15	85.90
	OVERALL ACCOUNTS			215.01	225.35	237.59	245.63	228.14
	CLOSING BALANCE			631.30	856.64	1094.23	1339.86	1568.00

Annexure 20-3- New Delhi Municipal Council- Financial Plan

Forecast

Head of Account		Current	Proposed	2009-10	2010-11	2011-12	2012-13	2013-14
PART I: REVENUE INCOME & EXPENDITURE								
<i>Receipts</i>								
<i>Opening Balance</i>				1568.00	1811.61	2076.64	2369.90	2701.92
A. TAXES, DUTIES & OTHER PRINCIPAL REVENUE								
Taxes:								
House tax								
Govt property		15.75	15.00	34.75	39.97	45.96	52.85	60.78
Private property		2.41	3.00	151.08	155.61	160.28	165.08	170.04
Theater Tax		37.21	15.00	0.01	0.02	0.02	0.02	0.03
Tax on Advertisement		35.32	15.00	0.20	0.23	0.26	0.30	0.35
Duty on Transfer of Property		10.23	10.23	21.60	23.81	26.25	28.93	31.89
Other Taxes		70.41	15.00	0.07	0.08	0.09	0.10	0.12
Building related receipts		10.59	10.59	3.34	3.70	4.09	4.52	5.00
Fees & Fines:								
Fines		26.51	15.00	0.32	0.37	0.42	0.49	0.56
Composition Fee		36.73	3.00	1.85	1.90	1.96	2.02	2.08
Sewer Connection fee		-13.44	3.00	0.01	0.02	0.02	0.02	0.02
Compounding Fee		-4.67	3.00	0.15	0.15	0.15	0.16	0.16
Inspection Fee		-51.25	15.00	0.49	0.57	0.65	0.75	0.86
Others		103.93	3.00	0.08	0.08	0.09	0.09	0.09
<i>Sub-Total (A)</i>				213.96	226.49	240.23	255.34	271.97
B. OTHERS								
Interest		99.81	15.00	359.91	413.90	475.98	547.38	629.49
Administrative Dept.		244.87	15.00	2.57	2.95	3.39	3.90	4.49
Social Services		-8.81	3.00	4.83	4.98	5.13	5.28	5.44
Electricity		-5.59	3.00	622.92	641.61	660.86	680.68	701.10
Water Supply		423225.00	15.00	29.08	33.45	38.46	44.23	50.87
Other Municipal works		-5.38	3.00	127.23	131.05	134.98	139.03	143.20
<i>Sub-Total (B)</i>				1146.55	1227.93	1318.80	1420.51	1534.59

Head of Account	Current	Proposed	2009-10	2010-11	2011-12	2012-13	2013-14
C. EXTERNAL REVENUE							
Advances to Employees	-15.64	3.00	1.23	1.27	1.31	1.35	1.39
External Assistance	20.91	15.00	68.49	78.76	90.58	104.16	119.79
Assigned Taxes	23.83	15.00	22.70	26.11	30.02	34.52	39.70
<i>Sub-Total (C)</i>			92.42	106.14	121.91	140.04	160.88
TOTAL RECEIPTS (A+B+C)			1452.93	1560.56	1680.95	1815.89	1967.44
Expenditure							
Collection of Taxes & Duties	2.44	3.00	1.54	1.59	1.64	1.69	1.74
Interest	-48.17	3.00	2.19	2.25	2.32	2.39	2.46
Administrative Dept	13.05	13.05	421.59	476.60	538.79	609.09	688.57
Education	-2.98	3.00	53.00	54.59	56.22	57.91	59.65
Medical & Public Health	2.31	3.00	85.22	87.77	90.41	93.12	95.91
Animal Husbandry	-7.64	3.00	0.41	0.42	0.43	0.44	0.46
Other social services	-2.53	3.00	23.85	24.56	25.30	26.06	26.84
Palika Parking	-17.10	3.00	0.64	0.66	0.68	0.70	0.72
Indoor Stadium	2.40	3.00	1.00	1.03	1.06	1.09	1.13
Night Shelters	-23.75	3.00	0.09	0.10	0.10	0.10	0.11
Contribution to NDF	-100.00	3.00	1.16	1.19	1.23	1.27	1.30
Electricity Supply	1.16	3.00	425.77	438.54	451.70	465.25	479.21
Water Supply	-3.01	3.00	70.87	72.99	75.18	77.44	79.76
Roads	22.07	15.00	19.00	21.84	25.12	28.89	33.22
Other Municipal Works	4.15	4.15	106.81	111.25	115.86	120.67	125.68
Advances to Employees	-22.66	3.00	0.72	0.74	0.77	0.79	0.81
External Assistance	37.08	15.00	68.04	78.24	89.98	103.48	119.00
B. Debt Servicing							
Debt Servicing-Existing			0.0	0.0	0.0	0.0	0.0
Debt Servicing- Proposed			14.7	14.7	14.7	14.7	14.7
C. Additional O&M							
Additional O&M of New Assets through JNNURM investment			3.1	5.3	7.3	9.5	9.5
TOTAL EXPENDITURE			1299.68	1394.37	1498.79	1614.56	1740.75

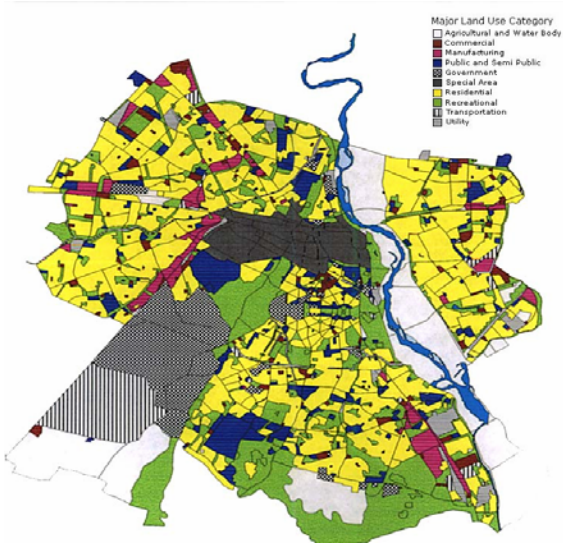
	Head of Account	Current	Proposed	2009-10	2010-11	2011-12	2012-13	2013-14
	Surplus/Deficit			153.25	166.19	182.16	201.33	226.70
PART II : CAPITAL INCOME & EXPENDITURE								
Receipts								
	External Assistance	35.79	15.00	21.60	24.84	28.56	32.85	37.77
	Deposit Works	-2.25	3.00	12.36	12.73	13.11	13.51	13.91
	Contribution to NDMC			0.00	0.00	0.00	0.00	0.00
	Contribution State and Central			0.00	0.00	0.00	0.00	0.00
	TOTAL			33.96	37.57	41.67	46.35	51.68
Expenditure								
	Administrative Dept.	493.27	15.00	0.06	0.07	0.08	0.09	0.10
	Education	1.19	3.00	0.88	0.91	0.94	0.96	0.99
	Medical & Public Health	16.03	15.00	6.72	7.73	8.89	10.22	11.76
	Animal Husbandry	-100.00	3.00	0.00	0.00	0.00	0.00	0.00
	Other Social Sevices	-3.16	3.00	2.25	2.32	2.39	2.46	2.54
	Electricity Supply	28.60	15.00	6.47	7.44	8.56	9.84	11.32
	Water Supply	0.07	3.00	0.47	0.48	0.50	0.51	0.53
	Roads	23.24	15.00	19.33	22.23	25.57	29.40	33.81
	Other Municipal Works	-3.98	3.00	9.04	9.31	9.59	9.88	10.17
	Deposit Works	-4.75	3.00	6.65	6.85	7.05	7.27	7.48
	New Development Works			11.01	10.00	7.50	0.00	0.00
	TOTAL			62.89	67.34	71.06	70.64	78.71
	Surplus/Deficit			90.36	98.84	111.10	130.69	147.99
	OVERALL ACCOUNTS			243.61	265.03	293.26	332.01	374.69
	CLOSING BALANCE			1811.61	2076.64	2369.90	2701.92	3076.60

Annexure 20-3- New Delhi Municipal Council- Financial Plan

Head of Account		Current	Proposed	2014-15	2015-16	2016-17	2017-18	2018-19
PART I: REVENUE INCOME & EXPENDITURE								
<i>Receipts</i>								
<i>Opening Balance</i>				3076.60	3502.40	4018.75	4608.24	5285.10
A. TAXES, DUTIES & OTHER PRINCIPAL REVENUE								
Taxes:								
House tax								
Govt property		15.75	15.00	69.90	80.38	92.44	106.31	122.25
Private property		2.41	3.00	175.14	180.39	185.80	191.38	197.12
Theater Tax		37.21	15.00	0.03	0.03	0.04	0.05	0.05
Tax on Advertisement		35.32	15.00	0.40	0.46	0.53	0.61	0.70
Duty on Transfer of Property		10.23	10.23	35.15	38.75	42.71	47.08	51.89
Other Taxes		70.41	15.00	0.13	0.15	0.18	0.20	0.23
Building related receipts		10.59	10.59	5.53	6.12	6.77	7.48	8.28
Fees & Fines:								
Fines		26.51	15.00	0.64	0.74	0.85	0.98	1.13
Composition Fee		36.73	3.00	2.14	2.20	2.27	2.34	2.41
Sewer Connection fee		-13.44	3.00	0.02	0.02	0.02	0.02	0.02
Compounding Fee		-4.67	3.00	0.17	0.17	0.18	0.18	0.19
Inspection Fee		-51.25	15.00	0.99	1.14	1.31	1.51	1.74
Others		103.93	3.00	0.09	0.10	0.10	0.10	0.11
Sub-Total (A)				290.34	310.66	333.20	358.24	386.11
B. OTHERS								
Interest		99.81	15.00	723.91	832.50	957.37	1100.98	1266.13
Administrative Dept.		244.87	15.00	5.16	5.94	6.83	7.85	9.03
Social Services		-8.81	3.00	5.60	5.77	5.95	6.12	6.31
Electricity		-5.59	3.00	722.14	743.80	766.11	789.10	812.77
Water Supply		423225.00	15.00	58.50	67.27	77.36	88.97	102.31
Other Municipal works		-5.38	3.00	147.49	151.92	156.48	161.17	166.01
Sub-Total (B)				1662.81	1807.20	1970.10	2154.19	2362.55

Head of Account	Current	Proposed	2014-15	2015-16	2016-17	2017-18	2018-19
C. EXTERNAL REVENUE							
Advances to Employees	-15.64	3.00	1.43	1.47	1.52	1.56	1.61
External Assistance	20.91	15.00	137.76	158.42	182.18	209.51	240.94
Assigned Taxes	23.83	15.00	45.66	52.51	60.38	69.44	79.86
<i>Sub-Total (C)</i>			184.85	212.40	244.09	280.52	322.41
TOTAL RECEIPTS (A+B+C)			2137.99	2330.27	2547.38	2792.94	3071.07
Expenditure							
Collection of Taxes & Duties	2.44	3.00	1.79	1.84	1.90	1.95	2.01
Interest	-48.17	3.00	2.54	2.61	2.69	2.77	2.85
Administrative Dept	13.05	13.05	778.42	879.99	994.82	1124.63	1271.37
Education	-2.98	3.00	61.44	63.28	65.18	67.13	69.15
Medical & Public Health	2.31	3.00	98.79	101.75	104.81	107.95	111.19
Animal Husbandry	-7.64	3.00	0.47	0.49	0.50	0.52	0.53
Other social services	-2.53	3.00	27.65	28.48	29.33	30.21	31.12
Palika Parking	-17.10	3.00	0.74	0.76	0.78	0.81	0.83
Indoor Stadium	2.40	3.00	1.16	1.19	1.23	1.27	1.31
Night Shelters	-23.75	3.00	0.11	0.11	0.12	0.12	0.12
Contribution to NDF	-100.00	3.00	1.34	1.38	1.43	1.47	1.51
Electricity Supply	1.16	3.00	493.58	508.39	523.64	539.35	555.53
Water Supply	-3.01	3.00	82.16	84.62	87.16	89.77	92.47
Roads	22.07	15.00	38.21	43.94	50.53	58.11	66.82
Other Municipal Works	4.15	4.15	130.89	136.32	141.98	147.87	154.01
Advances to Employees	-22.66	3.00	0.84	0.86	0.89	0.91	0.94
External Assistance	37.08	15.00	136.85	157.37	180.98	208.13	239.34
B. Debt Servicing							
Debt Servicing-Existing			0.0	0.0	0.0	0.0	0.0
Debt Servicing- Proposed			14.7	0.0	0.0	0.0	0.0
C. Additional O&M							
Additional O&M of New Assets through JNNURM investment			9.5	9.5	9.5	9.5	9.5
TOTAL EXPENDITURE			1881.15	2022.89	2197.44	2392.45	2610.60

	Head of Account	Current	Proposed	2014-15	2015-16	2016-17	2017-18	2018-19
	Surplus/Deficit			256.85	307.38	349.95	400.49	460.47
PART II : CAPITAL INCOME & EXPENDITURE								
Receipts								
	External Assistance	35.79	15.00	43.44	49.96	57.45	66.07	75.98
	Deposit Works	-2.25	3.00	14.33	14.76	15.20	15.66	16.13
	Contribution to NDMC			0.00	0.00	0.00	0.00	0.00
	Contribution State and Central			0.00	0.00	0.00	0.00	0.00
	TOTAL			57.77	64.71	72.65	81.72	92.10
Expenditure								
	Administrative Dept.	493.27	15.00	0.12	0.14	0.16	0.18	0.21
	Education	1.19	3.00	1.02	1.05	1.09	1.12	1.15
	Medical & Public Health	16.03	15.00	13.52	15.55	17.88	20.56	23.65
	Animal Husbandry	-100.00	3.00	0.00	0.00	0.00	0.00	0.00
	Other Social Sevices	-3.16	3.00	2.61	2.69	2.77	2.86	2.94
	Electricity Supply	28.60	15.00	13.02	14.97	17.21	19.80	22.77
	Water Supply	0.07	3.00	0.54	0.56	0.57	0.59	0.61
	Roads	23.24	15.00	38.88	44.72	51.42	59.14	68.01
	Other Municipal Works	-3.98	3.00	10.48	10.79	11.12	11.45	11.79
	Deposit Works	-4.75	3.00	7.71	7.94	8.18	8.42	8.68
	New Development Works			0.00	0.00	0.00	0.00	0.00
	TOTAL			87.91	98.41	110.40	124.12	139.80
	Surplus/Deficit			168.94	208.97	239.54	276.37	320.67
	OVERALL ACCOUNTS			425.79	516.35	589.49	676.86	781.14
	CLOSING BALANCE			3502.40	4018.75	4608.24	5285.10	6066.25



Chapter – 21 : Institutional Reforms



CHAPTER - 21 INSTITUTIONAL REFORMS

21.1 INTRODUCTION

Delhi is a mega city with a projected population of 23 million in 2021. In addition, it is anticipated that another 2 million will commute to the city each day. From the analysis of the present administrative and political set-up in the NCT, it is clear that for meeting the future requirements of citizens for urban infrastructure, and a clean living environment; as well as to ensure shelter and facilities for the urban poor, much will need to be done. Re-organisation of institutions, improvements and capacity building programs are needed to meet the needs of managing Delhi 2021. This chapter discusses the agenda for institutional reforms in city governance and urban poor. It also reviews the institutional reform initiatives already undertaken at the ULB level and State Government level to successfully implement and operate the JnNURM projects.

21.2 REVIEW OF ISSUES IN GOVERNANCE

Delhi is a city state and most of its geographical area is included within the Municipal Corporation of Delhi (MCD). A small area is covered by New Delhi Municipal Committee (NDMC), a body under the Central Government; and an equal area is under the Cantonment Board. The city is divided into 9 districts for administrative purposes, as well as for the regulation of law and order (by Delhi Police). The Municipal Corporation of Delhi has demarcated the area under its jurisdiction into twelve zones for the purposes of service delivery.

The present relationship between the MCD and the Delhi Government is rather nebulous. The DMC Act, 1957 was enacted without provision for a Legislative Assembly in Delhi, which was constituted only in 1992-93. The State Government, however, has not been given powers with respect to issues concerning land and law and order, which continue to be retained by the Central Government (acting through the Lt. Governor). The main planning authority for the city - Delhi Development Authority - also reports to the Central Government. This constrains the ability of the Delhi Government to respond to identified needs in the city. Further more, in several areas, the functions of Delhi Government often overlap with those of MCD, since the geographical boundaries of the city and the state are, in effect, co-terminus. In principal, parastatal organizations for transportation and water supply report to the Delhi Government, while solid waste management, sewerage, street lighting remain the responsibility of MCD. In practice, there are many areas of conflicting and fragmented jurisdictions.

The following table traces the evolution of governance in the city since independence in 1947.

Period	Governing Institutions
1947-1952	Government of India
1952-1956	Self Governing State with the Legislative Assembly of 48 members
1956	Delhi Legislative Assembly abolished
1956-1966	Directly Administered Union Territory and the Birth of the

	Delhi Administration
1957	Delhi Municipal Corporation & Delhi Development Authority created
1966	Metropolitan Council set up under the Delhi Administration Act
1980 - 83	No Metropolitan Council as it was dissolved by the Central Government
1990	Central Government dissolved Metropolitan Council
1992 onwards	Elected Government of the National Capital Territory of Delhi with a Council of Ministers led by the Chief Minister

Key issues in governance in Delhi stem from the role that the city plays as the National Capital, alongside the expectations of citizens for an effective local government. While it is in the National interest that the Central government should continue to retain a certain degree of control in the Capital city, the demands of the citizens for a local government that incorporates participation effectively cannot be ignored. With the current arrangement in the city, this latter aspiration is difficult to fulfill. This aspect and other key issues are enumerated below:

- Four tiers of governance are represented in the city: Center, State, City and Ward level.
- The city, also being a state with the same boundary, has two elected representatives as head; as well as two executive heads, with overlapping functions
- Poor coordination between the primary agency for city planning, and local, or State Government
- Planning Boundaries in the City (DDA - 15) do not coincide with Zonal boundaries (MCD - 12); and both have no relation to the District boundaries, or functional subdivisions followed by Delhi Police (9)
- The Metropolitan Planning Committee, mandated for Metro cities by the 74th CAA, has not been instituted in Delhi

21.3 MEASURES ALREADY INITIATED FOR GOOD GOVERNANCE

The Government of NCT of Delhi through its Department of Administrative Reforms has been taking measures that cut across departments of the Government of NCTD; agencies and institutions to monitor the progress made by them. The means used to achieve improvements include : (i) promotion of the role of civil society, people's participation & decentralization. This has sought to be achieved through the introduction of the Bhagidari Scheme (ii) Institution of preventive vigilance through introduction of E-governance for the citizens of Delhi; (iii) setting up of a dynamic website leading to e-governance for departments/agencies; (iv) Instituting the Right of the citizen to information; (v) Instituting of a mechanism to redress public grievances, of which establishment of the Public Grievances Commission is the main element; (vi) Civil and procedural reforms; synergy and Coordination and (vii) empowerment of the weak.

To promote the role of civil society, people's participation & decentralization in governance, the Bhagidari Scheme has been introduced within government departments and its agencies including those under the Union Government (Refer Box 21.1).

Box 21.1: Bhagidari-The Citizen's Partnership in Governance

In line with the ideological concept of involving the common man in governance, in December 1998 the Government of NCTD outlined a philosophy for governance - responsive to and in partnership with the citizen - known as Bhagidari. This has specifically stemmed from the belief that Government must work in partnership with the people and that the Citizens must feel that successful and meaningful governance cannot be achieved without their involvement and their role.

To evolve a mechanism for putting the concept of Bhagidari into practice, wide consultations were initiated with various citizen groups - Resident Welfare Associations (RWAs), Market and Traders Associations (MTAs) and other NGOs. Discussions were also held with MCD, DDA, NDMC, Delhi Vidyut Board, DJB, Delhi Police and the Department of Environment and Forest. These departments subsequently became the participating Departments in the Bhagidari Programme. Launched in January 2000, Bhagidari, the Citizen's Partnership in Governance is conceived to be a means for facilitating citywide changes in Delhi; utilising processes and principles of multi-stakeholders (citizen groups, NGOs, the Government) collaboration; applying the method of Large Group Interactive Events; developing 'joint ownership' by the citizens and government of the change process, and facilitating people's participation in governance. The programme has become popular leading to major initiatives under it since January, 2002:-

- Water Conservation and Water Harvesting by Delhi Jal Board & Urban Development Department
- Anti Plastic and Anti-littering campaign by Environment and Forest Department
- Programmes for the welfare of Senior Citizens
- Reforms in Hospital Management & Quality Control by Health & Family Welfare Department. 'Janhit Society' in each major hospital has been set up with representation from RWAs of the area and other citizen groups.
- Students Welfare Committee for Government
- In addition to the above programmes, Bhagidari has taken Industry Associations in conforming areas of the city in it's span. In Conforming Industrial Areas of Delhi have been made Bhagidars through their Industrial Associations. A High power Apex level Committee of senior officers and representatives of industry is to prepare the policy frame work for growth and development of Industries in Delhi.

21.3.1 E-Governance

In pursuance of the objective of improving governance, bringing openness and transparency and providing citizen-friendly services the Government of NCT of Delhi has initiated E-governance, with emphasis on "preventive vigilance". It is anticipated that provision of information electronically, rather than over the counter would reduce citizen's visits to offices and their interaction with officials. A dynamic web-site, linked to various departments / agencies of the government provides on-line services, including e-applications. Also incorporated is a system of making on line complaints; checking the status of the complaint, sending a reminder and suggestions.

It is expected that adoption of such measures would, in the long run, help in curbing the menace of corruption and minimize it to a large extent.

21.4 AGENDA AND OBJECTIVE OF INSTITUTIONAL REFORMS

The agenda for further institutional reforms must be guided by the following broad objectives:

- To clearly institute a political and administrative nodal agency, which could provide effective governance to the NCT;
- To ensure that the function and powers of this agency and its constituents, match their responsibilities and make them fully accountable.
- To enable clarity of jurisdiction of various agencies coming into contact with the people and entrusted with various responsibilities
- To structure administration such that it reaches the people and vice versa, to solve their problems
- To evolve an effective system of metropolitan planning, keeping in view the needs of planning in the context of NCR ;
- To strengthen and build capacity within the GNCTD, its constituents and other agencies entrusted with relevant tasks, so that improvements can be brought about, even while further institutional changes are being considered;
- To make the primary focus of the system and its constituents the functional requirements of management of Delhi 21;

21.5 TOWARDS AN APPROPRIATE PLANNING AND MANAGEMENT SET-UP FOR DELHI

The setting up of the GNCTD in 1993 with a chief Minister and council of Ministers responsible to the legislative assembly could be considered to be a landmark in the chequered political and administrative history of Delhi. The full potential of this change can be realized if the strategies outlined below are developed further for application in the city:

21.5.1 Safeguarding of Capital City Functions

Since Delhi is the National Capital, the role of the Central Government in the city is inevitable. However, the requirements of the role of capital city can be geographically contained within a defined area, freeing up the rest of the city for local governance.

21.5.2 Land Management (in areas outside the Capital City Area)

As per the final recommendations of the Balakrishanan Report “GNCTD cannot tackle problems related to slums/JJ clusters and unauthorized constructions in Delhi, so long as the responsibility for land management is not given to them fully”.

Responsibility for land management outside the area designated as the capital city would have to be clearly assigned in a manner that involves the State Government more fully

21.5.3 Streamlining structure and role of State and City level elected representatives

Already the MCD controls a far larger area than any corporation in the country, and is stretched to manage its functions. It is clear that one Municipal Corporation for 23 million people by 2021 is unwieldy. As per the 74th CAA, no ward should have more than 30,000 persons. This would mean 766 councilors or 1,64,000 persons per ward with no increase in number of councilors.

The area outside the capital city area be could thus be sub-divided into zones (not necessarily matching the current zonal demarcations) to form Zonal Councils. (as is the case in Greater Tokyo, Greater Cairo, Metro Manila etc). This should be done keeping in view their financial & operational viability.

Each zone would thus elect ward councilors to a council. The council may be headed by a Deputy Mayor. Deputy Mayors of all Zonal Councils would report directly to the Chief Minister of the State (eliminating the duality in elected heads that currently exists).

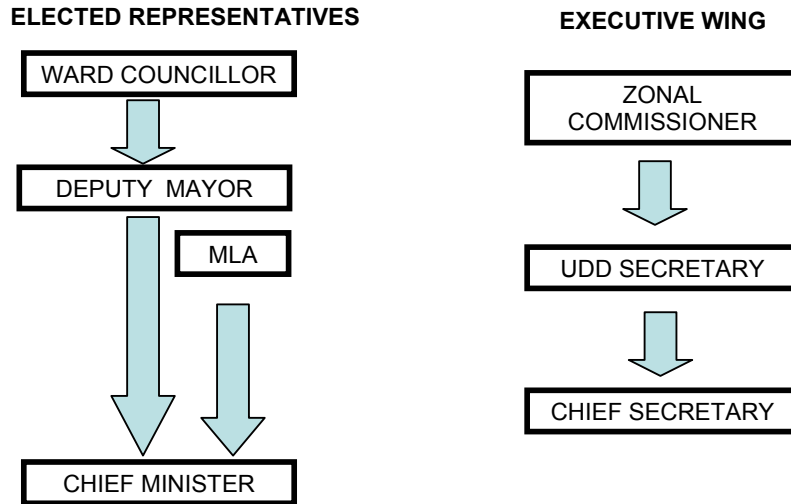
The GNCTD, through legislation by the parliament, should thus be delegated powers and functions relating to municipal management. While this may seem to be undermining the urban local body, the actual impact will be to strengthen or streamline local representation.

21.5.4 Role of Zonal Councils/Corporations (ZC)

The Zonal Council will be responsible for all municipal functions (relating to the provision of services, operation and management of resources) within its boundaries. In addition, it will undertake the preparation of zonal level plans within each zone; and the local area plan within each ward. Planning staff may be transferred from DDA for this purpose. Capacity building measures for the Zonal Councils would broadly include:

- Creation of a data base and MIS for property tax:
- Creation of a similar system for monitoring of civic services:
- Preparation of bye laws for regulation of various activities
- Training in the modalities involved in working with the private sector and raising of resources from the market.

This recommended structure for governance is depicted graphically in the figure below:



21.5.5 Rationalization of Planning Boundaries

There are huge citizen unfriendly overlaps within the geographic boundaries of NCTD which need to be rationalized. The worst of all the overlaps is that of the Mater Plan Zones by DDA (15 no) and MCD zones (12 no. NDMC + CPB). As most of the citizen interactions involve these two authorities, this needs to be reviewed.

21.5.6 Metropolitan Planning Committee

Article 243 (1) of the constitution states , "There shall be constituted in every Metropolitan Area a Metropolitan Planning Committee to prepare a Draft Development Plan for the metropolitan area as a whole" Delhi being a Metropolitan Area, such a committee is required to fill the gap which exists today in the vital area of planning. This committee will be responsible for coordinating the zonal level plans prepared by the zonal councils, keeping overall priorities in mind, and preparing a Draft Development Plan for the city as a whole. This Draft Development Plan will be updated on a continuous basis. The Constitution has provided for the broad set up of the committee (which is to be chaired by the CM) and the functions to be performed, and left it to the state legislature to fill up the gaps.

21.5.7 Role of Delhi Development Authority

The DDA can be incorporated into the MPC, to perform the following functions: (a) Perspective Planning; (b) making available serviced land (land connected to city level networks) in development areas; (c) monitoring development. In effect, it's officials will perform planning and regulatory functions for all types of development. The auctions policy for land disposal should be abandoned in favour of market price allocation, and no land or built space is to be held back for long from development.

Actual execution of development (construction) should be entrusted to the private sector - including individuals, co-operatives as well as private developers - and be regulated and monitored by a cell within the MPC.

Experience over the past 40 years has shown that the private sector is far better equipped to respond to various segments of demand, than a public sector agency. It will be critical to ensure, however, that land is released for all segments and uses in proportion to the registered / estimated demand. In this respect, it may be necessary for an agency of the MPC to carry out a limited programme of housing specifically targeted at the lower income groups (if the private sector cannot be attracted into this activity through concessions) Decisions relating to the development and release of land for specific uses will vest with the State Government (acting on the recommendations of the MPC), and be vetted by the Lt. Governor.

21.5.8 Constitution of an Urban Renewal Corporation (URC)

As mentioned previously, Delhi has a unique opportunity in that there are large tracts of land in the heart of the city that are developed at low densities, and are currently occupied by inefficient uses. These public housing estates lie both within the NDMC limits, as well in the MCD area. Urban land is a key resource, and its management is critical to the efficiency and success of any urban area. This is keenly realized in cities that face constraints in the availability of land, such as Singapore¹, but is equally important in cities, where a rural belt is available for expansion. London, for example, is currently undertaking the wholesale development of derelict tracts in east London, to make space for the additional 8,00,000 or so people anticipated in the capital city by 2016. Similarly, by some estimates, Manhattan was re-built in 8-10 phases during the last 100 years.

The redeployment of inefficiently used land to meet changing requirements must thus be an on-going process, if cities are to remain at the forefront of economic growth. It is thus proposed to

- Establish an Urban Renewal Commission, that will actively plan and initiate the renewal / redevelopment of entire blocks in the city;
- Develop a process for renewal that benefits all stakeholders - the owners, the tenants, developers and the municipality;
- Create a special cell within the URC that will be responsible for the renewal of the Walled City. Since requirements and constraints are different in this area, this cell must be empowered with special instruments to promote redevelopment within a special (heritage) framework. Eg. Extra FSI could be granted as incentive to redevelop buildings in accordance to specific guidelines.

The Urban Renewal Commission will serve as an intermediary between various stakeholders, suggest a structure for redevelopment, manage the process in a transparent manner; and arbitrate disputes

21.5.9 Water Management

Management of water supply and sewerage is among the most important aspects for improving the environment and public health in Delhi. The newly

¹ Urban Planning in Singapore is under the charge of an Urban Redevelopment Authority, that redeploys it's limited land resources to meet changing needs on a continuous basis.

set up DJB has to gear itself up to discharge these functions. Autonomy and professional management of the DJB has become critical in view of the likely scarcity of raw water in the not too distant future. The following specific measure need to be taken in this regard:

- Rationalisation of staffing pattern
- Use of commercial meters and other equipment to monitor water supply and prevent leakage of water;
- Promotion of participation of private sector in various managements functions of the board;
- Creation of a GIS database of the entire distribution network and other key assets
- Continuous Research and Development
- Practical implementation of waste water recycling technologies

It is further proposed that responsibilities and functions related to storm water drainage, surface water, ground water and rain water harvesting be vested with a single authority, specially created for the purpose.

21.6 INSTITUTIONAL & IMPLEMENTATION FRAMEWORK FOR SLUMS/JJ CLUSTERS

21.6.1 Institutional Structure - Slum Housing Corporation (SHC)

Delhi along with other metropolitan towns in the country faces the acute problem of the proliferation of slums and squatter settlements. The problem of slums in city is two pronged (i) **Legislative:** There is no Slum Act supporting the draft policy; (ii) **Institutional:** Slum Department is mainly performing the role of slum clearances in accordance to the requirements of the land owning agency. It lacks adequate resources to perform a pro-active role in the management of shelter for the poor

It is recommended that the current institutional framework be reorganized in order that one organization is made fully responsible for policy formulation, project development, financing, implementation and evaluation. Recommendations include

- Formation of Slum Housing Corporation (SHC), through a Slum Act, operating under the Urban Development Department (UDD) to undertake the task of provision of housing for slum dwellers. The SHC will be headed by a senior IAS Officer, specially nominated to the post, who will report directly to the Chief Secretary. He will be vested with autonomous powers as may be necessary to carry out his tasks, and ensure a lean and efficient organization.
- The SHC will be supported through funds from the UDD for a period of five years. It will, however, operate on a commercial format
- The SHC will be responsible for in-situ rehabilitation, relocation, as well as development of special facilities to house the urban poor (transit camps, night shelters, hostels...etc). It will be supported by zonal and city level infrastructure providing agencies

- The SHC will work through and with NGO's, trusts, private operators, as well as cooperative groups within slum communities. It will incorporate a strong community development unit, skilled in community mobilization.
- It will be supported by a fully computerized integrated information system on JJ clusters, existing basic services and JJ households for planning implementation and monitoring of all slum improvement programmes.
- The SHC will incorporate a housing micro-finance facility solely dedicated to financing shelter for the poor (using the title to land, or license to housing as security)

21.6.2 Funding Mechanisms

The SHC will operate in commercial format to undertake slum development activities under a Slum Development and Improvement Act. The approach for funding of the improvement schemes proposed will involve an element of cross subsidization between new high-value uses on the site and the provision of infrastructure and services on the remaining land for the poor. In the proposed approach, affordability problems will be minimized by the flow of funds from high value uses to serve the needs of the poor. It will be critical to

- Prepare alternatives for in-situ development and area development on relocation sites, in consultation with beneficiaries and their representatives;
- Determine the appropriate amount of land to be released to high value uses for purpose of establishing affordability of the scheme to the beneficiaries and private developer/government.
- Keep subsidies to a minimum - a mechanism for capturing beneficiary contributions would need to be developed, and varied to suit ability to pay of as many of the target group as possible.
- The implementing agency for the scheme would contribute a pre determined share of total scheme costs to be funded by government.

All schemes (including those that are not viable for development in a commercial format) will be facilitated through housing micro-finance schemes, administered by the SHC. These will carry reasonable interest rates, and will be repayable over the long term (15 years or more). Assuming an interest rate of about 8 percent, the EMI on hire purchase amount of Rs 50,000 would be less than Rs 400 per month.

In order to initiate the SHC, and ensure it's operations in the long term, it is proposed that

- all lands currently under JJ clusters (ex. railway and roads dept.) to be transferred to SHC
- On on-going basis, 25 % of all land proposed for development to be handed over to SHC (as proposed by the JNNURM, in order to ensure an on-going supply of shelter for the poor)

While the SHC will have the independence to use the land assets at it's disposal at it's discretion (after this has been vetted by the CS), the exclusive focus of it's operations will be to meet the shelter requirements of the poor in the city in a manner that is appropriate and affordable to them. It will be responsible for the management of it's assets & liabilities, the generation and deployment of funds towards this end.

21.7 CONCLUSION

The institutional reforms to be undertaken by the State Government and progress on these have been presented in Annex 21-1. These institutional reforms will provide basis to the state government to implement the projects identified under JNNURM in more effective and sustainable manner.