



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 Goods 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>