

Master Plan for Delhi: 2021
A Critical Analysis

Snigdha Dewal

CCS Working Paper No. 160
Summer Research Internship Programme 2006
Centre for Civil Society
www.ccs.in

Executive Summary

Delhi is the capital city of India and home to a population of almost 16 million people. It remains one of the largest urban agglomerations in the world. Therefore it becomes important to look at the state of urban planning in the city and to constantly evolve and evaluate the strategies for managing its growth and development. The Master Plan for Delhi is supposed to be the main policy document for this purpose, a legally enforceable text which lays down the planning strategies and development controls applicable to the city. This paper attempts to provide a critical analysis of the Master Plan, keeping in mind the recent controversies regarding the demolition drive in the city against unauthorised construction. There is an attempt to deconstruct the provisions of the plan in the face of the ground realities facing the residents. Special attention is given to the debate over stringent and outdated development controls and zoning regulations in the city and the theoretical underpinnings of this debate. The paper also looks at some examples of cities across the world to get a feel of the international trends in planning for better cities. The paper finds that there are serious shortcomings in the draft plan, which has failed to address the demands of the residents of the city. The paper concludes that there is case for greater participation by the people in the decision making process rather than a top down planning approach, and there is an urgent need to review the Master Plan and bring out the finalised draft for implementation at the soonest.

CONTENTS

1. Introduction
2. Section I: An Overview of Urban Planning In Delhi
 - 1.1 What is Urban Planning
 - 1.2 The History of Urban Planning in Delhi
3. Section II: MPD 2021- Objectives and Shortcomings
 - 2.1 MPD 2021- The Contents
 - 2.2 The Shortcomings
4. Section III: Zoning Regulations, Mixed Land Use and their Implications
 - 3.1 Zoning Regulations/Development Controls in Delhi
 - 3.2 The Debate on Zoning
5. Section IV: Urban Planning Across the World
 - 4.1 Vancouver
 - 4.2 San Francisco
 - 4.3 Houston
 - 4.4 Bogota
 - 4.5 Singapore
6. Conclusion
7. Annexure: Tables
8. References

Introduction

India lives in its villages, but modern India resides in its cities. Cities are the centres of growth to which the populace from all regions gets attracted to, whether to look for new career opportunities, or in hope of finding a better life and escaping the drudgery and poverty of stagnating rural areas. All across the world, any country that has experienced the transformation to an economically developed nation has experienced sharply increased urbanisation also, with cities emerging as centres of trade manufacturing and sophisticated service providers. India is no different. With an ever-expanding economy and sharp rise in the share of services in the national income, India is experiencing urbanisation as never before. In total, some 108 million Indians, or 10.5 per cent of the national population, live in the country's 35 largest cities. According to the 2001 census in all about 27% of the population lives in urban areas with an urban to rural ratio of 39. Today Mumbai is the largest Indian city and the third largest urban area in the world with a population of 18.84 million. The National Capital Region of Delhi is the 6th largest urban area in the world with a population of about 16 million people¹. Cities of such huge magnitude, having a population of over 10 million, are in fact now classified as 'Mega Cities'.

But with the growth of such large urban areas also comes the problem of managing them well to ensure good quality of life for the residents. The existence of such large numbers of people densely packed into compact regions leads to ever-increasing burdens on the resources available in the cities. Housing, waste management, slums, transportation, have emerged as some of the most pressing problems in urban areas along with the overall issue of effective utilisation of land. It is in dealing with such problems that urban planning comes to the fore, in order to provide a comprehensive development strategy for the city with a forward-looking approach. The city may thus get divided into administrative and uses based zones with separate plans for the same along with an all encompassing master plan for the city as a whole.

The question is how relevant and effective are such plans, both in their objectives and in their implementation. Do they pragmatically take into consideration the actual ground realities or are they too utopian in nature? Is due consideration given to the financial viability of such plans? And most importantly to what extent does this planning process curtail the rights of individual citizens to use their properties as they see fit, and to pursue any means of self-improvement that the city has to offer.

This paper attempts to analyse these issues focussing on the draft document of the Master Plan for Delhi till the year 2021 (MPD 2021). There has been a lack of comprehensive analysis on this major policy document till now and at present there is no research work available on the Master Plan. This work becomes all the more relevant in light of the widespread protests and controversies that these plans seem to generate. There is a huge urban planning quandary here. On one hand denizens are protesting against the demolition drive launched by the Municipal Corporation of Delhi against unauthorised constructions whereas on the other hand the implementing agencies and judicial bodies are helpless who are saddled with the task of ensuring the implementation of the existing provisions of the master plan. The city is demanding a change in the draconian land use policy and requires an urgent revision and formulation of a new Master Plan. Yet the new Master Plan is not without its own shortcomings. The paper aims to provide a critical analysis of the existing draft plan in this context and to collate examples of successful urban planning the world over. Finally the paper looks into the issue of zoning and strictly ordained and planned land use and its relevance in a free market based economy based with the inviolable right to private property.

¹ Source: Urban Statistics. Accessed at www.citymayors.com

Section I

An Overview of Urban Planning in Delhi

1.1 What is Urban Planning?

Urban, city, or town planning is the discipline of land use planning which deals with the physical, social, and economic development of metropolitan regions, municipalities and neighbourhoods.² It involves elements of architecture, landscape architecture, urban design, infrastructure planning, transportation and many other areas relevant to the growth and development of healthy and sustainable cities.

Historically urban planning has been practiced in some capacity or the other as long as cities have existed. The design of Harappa and Mohenjodaro with their grid patterned streets, raised citadels and downtowns; or the cities of the Roman Empire with the central Plaza and concentric circles of streets moving away, are some of the earliest examples of urban planning. But the practice grew into a well established discipline after the onset of the Industrial Revolution. This era saw unprecedented urbanization and a rapid and haphazard mushrooming of cities and towns in the European nations, most of which had little or no provisions for proper sanitation, housing and open vistas and hence a need was felt for planned development of cities. There have been many schools of thought which have had an influence on modern city planning, some of which are:

- *Ebenzer Howard and his concept of the Garden City* in the late 19th century. He envisaged the growth of small self-sufficient towns where the city people might live in close contact with nature. This idea gained currency as people were trying to find ways to improve the growing urban blights, the so-called factory towns. This idea still continues to have a strong hold on most urban planners with many new townships and housing developments proclaiming themselves to be garden cities and allowing people a home away from the harsh life of a city.
- *The Modernist City*. This concept became more popular at the turn of the century and aimed for larger and more populated cities with an efficient, workable environment.

² Source: Urban Planning. Accessed at http://en.wikipedia.org/wiki/Urban_planning

Large scale rebuilding of old cities was carried out after the Second World War on modernist principles with large uniform housing blocks and newly developed suburban areas.

- *The Post-modernist era.* From the 1970s onwards there was a growing disenchantment with the uniform and monotonous modernist style of development. Planning was supposed to accept and even encourage diversity. Jane Jacobs was one of the pioneers in this regard. She raised her voice against insipid planned and zoned cities, which lacked any sort of vitality and were more often than not unsustainable. She was the first one to encourage a more mixed use of urban areas with more populated and walkable streets, which would boost both the economy and the safety within a city (by having more 'eyes' on the street) and create more lively neighbourhoods.
- *New Urbanism vs Urban Sprawl.* From the 1990s onwards it is the New Urbanism school of thought, which has been gaining credence among planners. Some of the worlds most highly rated cities (such as Vancouver) have been influenced by these ideas. New Urbanism rose in reaction the growing problem of 'urban sprawl' or the increasing sub-urbanization of cities with the richer population in cities moving off to relatively less congested outlying areas and a subsequent decay of inner city areas. This led to increasing dependence on automobiles and long commutes for the people. New Urbanism encourages transit-oriented development and more pedestrian friendly communities. They encourage smaller and more compact neighbourhoods with commercial areas and workplaces also close to the residential areas. And sprawl is to be kept in check by working on re-densification of inner city areas.

1.2 The History of Urban Planning in Delhi

Delhi is a focal centre for the northern region of India. It was the logical confluence for travellers as well as invaders. It has been the capital city for many kings and dynasties. From Prithviraj Chauhan to the Slave Dynasty, from the Lodhis to the Mughal Empire, Delhi's importance as being the political centre of the nation grew. Later, the establishment of the city as the national capital by the British sealed its fate as being one of the most important regions in the nation. After independence it was retained as the

national capital of the Republic of India. Today it is the second largest city in the country and the seat of the Govt. of India.

Most of the Delhi metropolitan area lies within the National Capital Territory of Delhi (NCT). The NCT has three local municipal corporations: Municipal Corporation of Delhi (MCD) New Delhi Municipal Council (NDMC) and Delhi Cantonment Board. The Municipal Corporation of Delhi is one of the largest municipal corporations in the world providing civic amenities to an estimated 13.78 million people³. The capital of India, New Delhi, falls under the administration of New Delhi Municipal Council (NDMC). The Government of India in consultation with the Chief Minister of Delhi elects the chairperson of the NDMC. The major land development authority in the city is the Delhi Development Authority (DDA), established under the Delhi Development Act 1957. It is primarily the DDA's task to frame out policies for urban planning and the Master Plan in consultation with other agencies like the NCR planning board, the Delhi govt (GNCTD), Ministry of Urban Development, MCD, NDMC etc.

The DDA website has the following definition of a master plan-

"A Master Plan is the long term perspective plan for guiding the sustainable planned development of the city. This document lays down the planning guidelines, policies, development code and space requirements for various socio-economic activities supporting the city population during the plan period. It is also the basis for all infrastructure requirements."

There have been two previous master plans in the city, the MPD 62 and the MPD 2001. The first master plan was developed in consultation with the Ford Foundation. The second plan was to be formulated 20 years hence, that is in 1981 but with the advent of the 1982 ASIAD games it was put at hold and the new plan came out only in 1991. These were mainly land development plans, the strategy being that DDA was to acquire new lands and develop them for housing and commercial purposes with a subsequent auctioning of

³ Source: www.mcdonline.gov.in

flats/shops/plots. Throughout, planning followed a top down approach with the formulation of a master plan and keeping in mind its aims, subsequent zonal and sub-zonal plans to be made. Both these plans were beset with problems particular to them. It is beyond the scope of this paper to elaborate these in detail but for most part, faulty projections for population, housing demand, rise in vehicles, demand for civic amenities resulted in plan targets failing to keep in touch with the real world. Implementation failures, complicated and unnecessary restrictions on land use and the inherent corruption in the planning agencies like the DDA and MCD resulted in blatant violations of the plan guidelines and a severe shortfall in civic amenities and housing. This led to increased theft of public resources and rise in illegal encroachments and unauthorised constructions. DDA itself takes note of this fact in its introduction in the draft MPD 2021, where it makes the following points-

- The two earlier plans saw planning as a public sector led process with very little role for private enterprise. They were mainly land use plans involving acquisition and subsequent development of vast tracts of urban land for residential or commercial uses but the new plan, drafted in a post reform era, recognizes the limited scope for land use planning as it were.
- The plan identifies some of the shortcomings of the previous plans as an introspective exercise, in order to make better and sound basic policies and strategies. There have been miscalculations in population projections. The projected population was 128 lac whereas the actual population increase was 137.8 lac. There have been large gaps in the amount of acquired land and area actually developed.
- There has been growth of unauthorized construction. This has been mainly because of the violation of the rule that no construction can be carried out without the approval of the DDA. The violation was in the form of non-submission of proper layout and development plans, which most people found too complicated and long winding.
- There have been shortages in provision of housing and the scope of the public sector in providing housing is ultimately limited. Thus there is an urgent need of more private participation in this area.

- Rise of Jhuggi Jhopri (JJ) clusters and squatter settlements is also another added burden on the city planners.

These encroachments and squatter settlements happened to a large extent on the vast tracts of land acquired by the DDA and then left vacant as it was not utilised on time. As the provisions of MPD 2001 became redundant in a rapidly growing and expanding city, the planning authority carried out a review of the previous plan as per the guidelines, to come up with a new road map to shape the next 20 years of the city. This was the reason for drafting of the MPD 2021. The final draft was released for public scrutiny and discussion in March 2005 for a said period of 90 days after which it was to be redrafted and finalised. But the plan has been running into various controversies and is still being redrafted and modified.

Section II

MPD 2021- Objectives and Shortcomings

2.1 MPD 2021- The Contents

"It is futile to plan a city's appearance, or speculate on how to endow it with a pleasing appearance of order, without knowing what sort of innate, functioning order it has."

(Jane Jacobs, The Death and Life of Great American Cities)

The purpose of the plan as the draft states is to transform Delhi into a *"global metropolis and a world-class city, where all the people are engaged in productive work with a decent standard of living and quality of life in a sustainable environment"* (MPD Draft Proposal 2021). The draft establishes planning as the surest way of attaining this goal and developing the city according to certain pre ordained guidelines as opposed to 'uncontrolled and chaotic development' which it believes would result if the city is allowed to grow at its own organic pace and its own needs. The document is divided into the following chapters:

1. **Regional and sub-regional framework:** It lists policy areas in and around Delhi, the NCT, the Central National Capital Region (NCR), the rest of the NCR and the Highway Corridor Zone, the area under each of them and the framework for regional development.
2. **Population and Employment:** It describes the demographic profile of the city, with data on population growth and migration, workforce, employment etc.
3. **Delhi Urban Area 2021:** It talks briefly about the land use policy in the city with focus on special areas like the 'walled city' and the unplanned areas like the JJ clusters. The chapter also contains detailed description of the kind of facilities needed at each level of housing- neighbourhood, community, district and zonal.
4. **Shelter:** It envisages housing needs of the city, the housing strategy in new housing areas, the restructuring and up gradation of existing areas. There are guidelines for redevelopment in unauthorised colonies, housing policy for the urban poor. The chapter also outlines the development controls for residential use zones.
5. **Trade and Commerce:** It suggests activities that can be carried out at each tier of commercial areas- district centre, community centre, local shopping centre, and convenience shopping centre. The chapter briefly talks about the informal sector and the number of informal units that can be allowed in each use zone.⁴ The chapter lists out the complex set of development controls to which commercial establishments are to be subject to.
6. **Wholesale Trade:** It gives some proposed locations for wholesale markets, sub city level markets. It also talks of the development controls for wholesale markets.
7. **Industry:** It is a detailed classification of industries, the permissibility of industrial units in different use zones, redevelopment policy for industrial areas and the development controls for industrial areas.
8. **Government Offices:** It details on the optimum utilization of government land and the proposal to move out some government offices to outlying areas of the city. Also gives the development controls for government offices.

⁴ A use zone is the specific activity which is to dominate in a given area for example- residential, commercial, govt. use, public utility.

9. **Environment:** It shows the natural resource base of Delhi and the policies for its conservation, especially the Yamuna river area and the Aravali ridge area. Planning norms in terms of the approved area for parks are also listed.
10. **Conservation and Heritage:** It talks about the conservation of built heritage and the strategy to be followed. Each local body is to prepare 'special Development Plans' for the conservation and improvement of listed heritage complexes and zones
11. **Urban Design:** It gives the urban design guidelines for Connaught Place, walled city and its extensions, the need for visual integration of the city. There is a mention of the policy on tall buildings in light of this. The chapter also talks about the development of city gateways.
12. **Transportation:** It touches briefly upon different aspects of the transport policy- highways, arterial roads, local streets, urban relief roads, underground roads, metro rail system, and provisions for bicycle and cycle rickshaws. The chapter gives estimates for inter city passenger movement. It also talks about the norms for fuel stations and parking provisions.
13. **Social Infrastructure:** It describes the planning norms and the development controls for various social infrastructure like health facilities, education, sports facilities, communication facilities and other socio-cultural and community facilities.
14. **Physical Infrastructure:** It gives the projected requirements for water, sewerage, power and solid waste management by the year 2021 and the policies for meeting these requirements and providing for better civic amenities in the city.
15. **Mixed use:** It briefly talks about the need for mixed land use in certain cases and permissible and non-permissible activities in this regard.
16. **Land Use Plan:** It talks about the division of the city into 15 administrative zones and the zonal plans for the same.
17. **Development Code:** It lists out the division of the city into different use zones and use premises and controls applicable to each. Part of the development controls for the use zones are mentioned in the chapters specific to them.
18. **Plan Monitoring:** It gives the monitoring framework for reviewing the plan progress every 5 years and the targets in different areas to be achieved by the time of each

review and the formulation and working of action groups to look at different sections of the plan.

2.2 The Shortcomings

There are many areas where the plan falls short both in terms of content and focus as well as overall layout and user friendliness.

1. Data insufficiency and contradictions

The first glaring insufficiency in the plan is lack of data and information. For a plan that is supposed to chalk out the effective management of land resources in the city, very little actual data is provided on the availability of land and the various uses to which its being put to. The plan talks about the number of housing units or commercial or industrial but there are no estimates given for the total land area under each of these uses. Moreover, if at all the data is provided has not been substantiated with reasons for using that particular estimate or the source from which it has been obtained or the relevant year. The land use figures that have been prescribed have not been substantiated with any line of reasoning as to why such a distribution should be preferred over any other.

In terms of availability of Urbanisable land in NCT-Delhi 2021, there are clearly severe limitations with respect to urbanisable land in Delhi. In the words of the Base Paper for Preparation of Regional Plan 2021, there is specifically a “significant shortage of land to accommodate the 2021 projected population within NCT-Delhi”. In order to accommodate this projected population – estimated at 230 lac by the draft MPD 2021 – in NCTD, a review of available land for urbanisation must be made. Table 1 details land availability figures drawn up by the Draft NCR Plan 2021.

Table 1: Land Availability in Delhi

S.N.	Land Use	Area (Ha.)	Percentage to Area
1	Total Geographical Area – NCT Delhi	1,48,300	100

2	Built –up Area	70,162	47.31
3	Natural Features	19,509.10	13.16
	<i>Forest</i>	303.56	
	<i>Wildlife sanctuaries</i>	28.54	
	<i>Ridge</i>	7777.00	
	Northern	87.00	
	Central	864.00	
	South-Central (Mehrauli)	626.00	
	Southern	6200.00	
	<i>River Yamuna</i>	9700.00	
	<i>Other water bodies/drains</i>	170.00	
4	Sub- Total (Built-Up + Natural Features)	89,671.10	60.47
5	Balanced land available in NCT - Delhi (1-4)	58628.90	39.53
6	Land to be kept reserved for:		
	(i) Disposal of Solid Waste generated up to 2051 (sanitary landfill, processing & statutory green belts)	10000	6.74
	(ii) Metro Services /Utilities e.g. power plant, grid station water and sewerage treatment plant, etc.	10000	6.74
	(iii) Agriculture zone in NCT Delhi including dairy farming, horticulture, greenbelts etc.	11000	7.42
7	Sub Total – 6	31600	20.90
8	Proposed/Actual Land available for urbanization (5-7)	27628.90	18.63
9	Total Urbanisable area 2021 (including built up area 1999) (2+8)	97790.90	65.94

10	Population, which can be accommodated in 97,790.90 ha. @ 225 PPH = 220 lakhs		
----	--	--	--

Source: MPD 2021

These are the plan estimates but other estimates appear to be less optimistic. In their paper on "Land Policy for Development considering the Techniques of Land Pooling", the Association for Urban Management and Development Authorities claims the figures as described in Table 2.

Table 2: Availability and Distribution of Land

No.	LAND USE	AREA(Ha)
1	Total area	148300
2	Built Up	70200
3	Ridge/riverbed, canals, forestland:	28800
4	Double cropped agricultural land	6400
5	Total land NOT available for development (2+3+4)	105400
6	Remainder/urbanisable land(1-5)	42900
	Single cropped agricultural land	38000
	Farmhouses	4900

Source: Land Policy for Development, The Association for Urban Management and Development Authorities

This set of figures, suggesting a possible 42,900 Ha for urbanisation *before* reserving land for specific purposes, also gives a rough break-up of the current deployment of the 'urbanisable' land. The Khanna Committee Report (2006) also observes that there is substantial divergence between the base-line land uses assumed by the DDA while formulating its 2001-21 Draft update of the Plan and the actual position obtaining on the ground. For example, many areas shown as falling in the agricultural zone and available for further urbanization, have actually been under JJ Clusters for the last 2 decades, or

more. Not just in this instance there are other cases where one is faced with contradictory data. In the distribution of land into different administrative zones and the area under each zone, the DDA in fact contradicts itself as different sets of data are provided in the draft document and on its website.

2. Tone of the document

The MPD is a legally enforceable document, supposed to provide clear guidelines on urban planning and infrastructure yet this document reads more like a policy document and not a clear legally enforceable text. The tone is vague and only attempts to provide suggestions, in terms of things that 'should/ ought to be done'. There is an attempt made to provide positive and enforceable guidelines. For example, on the issue of re-densification of low-density areas, the plan states, "There is a large proportion of underused land with a number of vacant sites or unutilised built areas falling in the central city...the areas are recommended to be comprehensively planned for improvement and redevelopment in order to make best use of land resources as per the prescribed norms." How one is to work out a comprehensive policy for redensification from this rather vague suggestion is apparently left to the discretion of the DDA officials. In the section on housing strategy the plan suggests that the most pressing demands of the residents should be carried out by someone at some given date- "Planning norms, use zoning, use permissibility, density, FAR and building controls *are to be reviewed* for housing both in new areas to be opened up and for redevelopment of existing areas." But the main objective of the MPD should have been just such a review, not to be left for some future date.

3. Abbreviations

The draft makes extensive use of abbreviations without giving any information on keys to decipher their meaning, which makes the document very difficult to comprehend for a layman. Moreover no definitions are given for frequently used technical terms like FAR (floor area ratio), plinth area, setback norms etc. There are also numerous grammatical errors and the layout is not very user friendly with the text repeatedly being cut in by endless tables, instead of these being provided in a separate appendix.

4. *Conceptual Flaws*

The problems with the plan are not just superficial but run deeper at the conceptual level. The plan repeatedly states that the problem of in-migration into Delhi is a chronic one. But the solutions suggested are to limit migration by discouraging labour intensive units from coming up in the capital. The plan states "*it is envisaged that no new major economic activities, which may result in the generation of large scale employment related inflows, be located in the national capital territory of Delhi (NCTD). And only activities necessary to sustain the local population of Delhi should be permitted, and the quality of infrastructure and life in general significantly improved.*" Despite being vague, this statement actually chillingly sets the agenda for the plan as being a growth limiting one, with a deliberate clamp on the growing economy of the city and limiting it possibly only to supposedly less problematic administrative uses.

This is simply not a feasible option; first, because the migrants into Delhi are coming from chronically poor regions of the country such as Rajasthan and Bihar and they come because they believe that the city holds the hope of a better future for them. Most of them are landless labourers who end up in the city because of a number of push and pull factors. It will be difficult to limit the migration of such people who actually have very little to live on from where they come. Secondly, there is actually a great demand for the kind of services rendered by the migrant labourers, ranging from rickshaw pullers to hawkers, construction labourers to domestic help. These people form a vast network of people providing informal services and contributing very actively to the economy. The plan does suggest a number of policy solutions to better guide the working of this sector but it is not detailed enough. There are no estimates of the number of people that are involved in this sector and the total contribution of this sector to the state GDP. There are certain prescribed numbers of informal units that will be allowed to exist in each use zone, that defy logic and do not take any projected demand expectations for such services into consideration. The numbers seem to have been arrived at almost arbitrarily.

5. Ignorance of new theories and concepts in urban planning

Where world over there is a move towards the principles of New Urbanism and the concept of transit oriented development and containing the unchecked growth of urban sprawl, Delhi it seems chooses to go the other way. In trying to preserve the old structure of the city it prescribes greater growth in the suburbs and shifting of economic activities out to these areas to tackle the growing population. Whether one chooses to live in the suburbs is a matter of personal choice but it is true that increasing suburbanization leads to a large growth in the number of vehicles, problems of pollution, congestion and parking. World over there is a trend to build more 'walkable' communities and encourage the use of bicycles, public transport etc. and re-develop, have higher density living in inner city areas. The master plan also plays lip service to the notion of redevelopment and re-densification of inner city areas but falls short of stating any clear policy objectives in this regard. All the space that this widely discussed proposal gets in the plan is one small paragraph.

6. Policy on Special Areas

In its policies for Special Area (Walled city, Pahar Ganj, Karol Bagh) and urban villages, the plan in its eagerness to maintain their 'essential character' and preserve this urban heritage, forgets to take into account the needs of the actual residents of these areas. For example under MPD 2001 when the move to transfer industrial units within the walled city to other areas was passed, the affected people were left in a lurch. New shops and lands were not allotted to them on time, they did not have adequate infrastructure in the new areas, users were asked to cough up higher rentals.

7. Slum Rehabilitation Policy

The 8th Report of the Standing Committee on Urban Development noted that DDA had taken over possession of 67354.88 acres of land acquired through the Land Acquisition Collector of Delhi, till March 2003. Till March 2005, DDA had acquired land totaling upto 69,890 acres. While the Committee noted that acquisition of land for planned development is an ongoing process, they were concerned to note that about 1475.85

acres of DDA lands are under encroachment by JJ clusters. There is no clear policy on slum resettlement given in the plan despite the figures revealing that it is a chronic and growing problem. According to the Tejinder Khanna Committee Report, a presentation by HUDCO has brought out the stark fact that since DDA started its activities, it has been able to provide only 16% of the targeted built-up area designated for commercial purposes. Figure 3 mentions the type of resettlement and the estimated population in these resettlements.

Table 3: Type of settlement

TYPE OF SETTLEMENTS

S.NO	Type of Settlement	Estimated population in lakh in 2000	% of total population
1.	JJ Clusters	20.72	14.8
2.	Slum Designated Areas	26.64	19.1
3.	Unauthorised Colonies	7.40	5.3
4.	JJ Resettlement Colonies	17.76	12.7
5.	Rural Villages	7.40	5.3
6.	Regularised-Unauthorised Colonies	17.76	12.7
7.	Urban Villages	8.88	6.4
8.	Planned Colonies	33.08	23.7
	Total	139.64	100.00

Source: Government of NCT Delhi. 2004. Economic Survey of Delhi, 2003-04. Department of Planning

8. Lack of Financial Accounting

Last but not the least the plan almost completely fails to address the fiscal aspect of the situation. There are no estimates provided for the additional expected cost of catering to the additional demands of the city and how this will be borne. There is also no accounting for what kind of rents and revenues the state departments expect to earn and how much of these are to be channelised into urban development and how funds are to be distributed among the different civic and planning agencies.

Section III

Zoning regulations, Mixed Land Use and their Implications

3.1 Zoning Regulations/ Development Controls in Delhi

The chief tool of the master plan is its authority to formulate development codes and land use norms for different uses. The origins of zoning lie back to the growth of towns during the industrial revolution in Europe and America. Zoning was developed as a tool to protect residential environment from industrial and commercial encroachment and to provide good living conditions to the residents. Most cities today follow some form of zoning code or the other. There are two types of zones that are used in common terminology. One is the division of the city into area wise zones and sub-zones for purposes of de-centralisation of planning. Thus following the master plan, zonal plans need to be prepared for all the 15 existing zones in Delhi. On this front, as well, the track record of planning has not been good. Following the formulation of the MPD 2001, plans for only 7 zones have been approved and notified whereas plans for zones 'G' west Delhi, 'H' North West Delhi I, 'M' North West Delhi II, and 'P' Narela are still at various stages of approval. In fact, it is ironic that with the master plan for 2021 about to come into operation quite soon, DDA officials are still in the process of formulating zonal plans for MPD 2001 under strict court orders, and even these will take time to get finalised.

The other aspect of zoning enumerated in the development code for the city consists of the division of the city into various 'Use Zones' and 'Use Premises' which determine the land use policy in the city. A use zone is an area for any of the specified land use categories. A use premise means one of the many sub divisions of a use zone, designated in an approved layout plan, for a specific use. Land use of premise has to be determined on the basis of an approved layout plan, which has to be consistent with the land ownership and the approval of the building plans.⁵ The MPD 2021 divides the city into the following use zones:

1. Residential

⁵ Source: Draft MPD 2021

- Residential Area
 - Foreign Mission
2. Commercial
 - Retail shopping, General Business and Commerce, District Centre, Community Centre, Non Hierarchical Commercial Centre.
 - Wholesale, warehousing, cold storage and oil depot
 - Hotels
 3. Industry
 - Manufacturing, service and repair industry
 4. Ridge/Regional Park
 - Ridge/Regional Park
 5. Recreational
 - City park, district park, community park
 - Historical monuments
 6. Transportation
 - Airport
 - Terminal/ depot- Rail/ MRTS/ Bus/ Truck
 - Circulation- Rail/ MRTS/ Road
 7. Utility
 - Water (treatment plant etc.)
 - Sewerage (treatment plan etc.)
 - Electricity (power house, sub-station etc.)
 - Solid waste (sanitary landfill etc.)
 - Drain
 8. Government
 - President Estate and Parliament House
 - Govt. office/ Courts
 - Govt. land (use undetermined)
 9. Public and Semi-public Facilities

- Hospital, education and research university/ university centre, college, socio-cultural complex, police headquarter, police lines, fire stations, disaster management centres, religious, burial ground/ cremation.
- Transmission site/ centre
- Sports facilities/ complex/ stadium

10. Green belt and water body

- Plant nursery
- Green belt
- River and water body

Some of the main details of the zoning regulations given as development controls in different chapters of the MPD are provided in the annexure. Most of these regulations have been lifted verbatim from MPD 2001 without undertaking any comprehensive review. It is the existence of such zoning codes that has resulted in heated debates among economists, planners, govt. officials and the residents not just in Delhi but the world over.

3.2 The Different Views on Zoning

According to Jane Jacobs (whose seminal work, 'The Life and Death of American Cities' has influenced citizens and planners alike), cities are vibrant living systems, not the products of grand, utopian schemes concocted by overzealous planners. Given urban planners' almost universal reverence for Jacobs, it is ironic that many have largely ignored or misinterpreted the central lesson of "Death and Life" (L. Gilroy, 2006).

In an era when planning is being shunned, the view of some schools of thought is that the govt. or the planners should only be responsible for the maintenance of public spaces. They should not interfere in the functioning of private residential areas or even privately owned commercial spaces. The residents of an area best understand their needs and should be left free to decide their plans of construction and management and disposal of their properties. It is the market forces of demand and supply that should be allowed to determine what is the most appropriate use of land. If there is a margin for profit and if

there is demand by people for having a commercial establishment like a restaurant or a boutique within a residential area the people should be well within their rights to allow for the development of the same.

Another significant drawback of land use regulation, besides it being an infringement on the right to private property, is its impact on housing development and its pricing. The inevitable outcome of these regulatory constraints is that a large and increasing proportion of urban land development in developing countries is being undertaken outside the formal, officially sanctioned process. Durand-Lasserve (1996) estimated that over 40 percent of the world's population is excluded from formal land and housing markets, including between 15-70 percent of the urban population of developing countries. It is also increasing more rapidly than any other category ⁶.

Existing research suggests that a wide range of govt. regulations, including building codes, environmental laws, land use regulations, and impact fees, as well as the government procedures to administer these regulations, reduce the supply of housing and generate substantial costs. Nevertheless, not all of these regulations can be fairly condemned as "barriers." To the contrary, some costly regulations can be justified because they promote public health or safety. Others increase price because they generate amenities and, thereby, increase the demand for housing. Many forms of state regulation, however, are neither necessary nor efficient. Others may be efficient, but still generate unacceptable affordability problems for low- and moderate-income households. It is roughly estimated that delays caused due to land use regulation tend to increase housing costs by almost 20%. (Schill, 2005)

The opinion is divided on what could be a desirable extent of zoning. While some schools of thought put all their faith in the invisible hand of the market in determining the best possible land use and letting nuisance laws take care of any disputes and grievances. On the other hand is the whole body of planners and govt. organizations that believe that a

⁶ Geofeery Payne, 2000.

balanced planned approach is the only way to ensure the smooth growth of a city and a good life for its residents. The solution as always would lie somewhere in between.

In a country like India where the judicial machinery is slow and inefficient and takes years to decide criminal cases of life and death it would be too optimistic to expect nuisance laws and the right to sue to take care of any externalities that would arise in the course of privately determined land use. At the same time it is evident from the growing list of non-conforming uses of land, that existent laws have failed to keep up with the times. World wide there is a call to allow for more mixed use of land and to update building byelaws. But these topics have not been dealt in much detail in the master plan. The plan ironically envisages the formulation of pre defined mixed-use zones, which runs counter to the whole theory of mixed use.

To control growth of unauthorized construction the govt. needs to ensure that all available urbanized land is put to the most efficient and intensive use consistent with social, cultural and climatic conditions. In most cases, planning policies that encourage proposals, which create more compact urban areas, could achieve this. These will also reduce the rural land required by urban expansion and population growth and also minimize pressure on transportation systems. Permitting and encouraging mixed land use and medium rise developments will also enhance social interaction and livelihood opportunities as well as creating more diverse, dynamic and efficient urban areas.

Public Private Partnership (PPPs) is another important way in which planning could better work towards the needs of the community. They provide a more participatory platform involving the community and ensuring development, which can also benefit the urban poor. But such partnerships can only work if the public agencies can win the trust of the landowners that they can gain more by working in partnership with the government rather than selling their land to developers, and then truly deliver the promised benefits.

Section IV

Urban Planning Across the World

In discussing the master plan for Delhi it would be interesting to look at the different strategies of urban planning in cities across the world. Table 5 gives the rank list of world's best cities in terms of best quality of life. ⁷

Table 5: The World's Top Cities offering best quality of life

2006 Rank	City	Country	Points
1	Zurich	Switzerland	108.2
2	Geneva	Switzerland	108.1
3	Vancouver	Canada	107.7
4	Vienna	Austria	107.5
5	Auckland	New Zealand	107.3
6	Düsseldorf	Germany	107.2
7	Frankfurt	Germany	107.0
8	Munich	Germany	106.8
9	Bern	Switzerland	106.5
9	Sydney	Australia	106.5
11	Copenhagen	Denmark	106.2
12	Wellington	New Zealand	105.8
13	Amsterdam	Netherlands	105.7
14	Brussels	Belgium	105.6
15	Toronto	Canada	105.4
16	Berlin	Germany	105.1
17	Melbourne	Australia	105.0
18	Luxembourg	Luxembourg	104.8

⁷ A survey conducted by a website www.citymayors.com. Available at http://www.citymayors.com/sections/rankings_content.html. Accessed on 24 June 2006.

18	Ottawa	Canada	104.8
20	Stockholm	Sweden	104.7
21	Perth	Australia	104.5
22	Montreal	Canada	104.3
23	Nürnberg	Germany	104.1
24	Dublin	Ireland	103.8
25	Calgary	Canada	103.6
26	Hamburg	Germany	103.4
27	Honolulu	USA	103.3
28	San Francisco	USA	103.2
29	Adelaide	Australia	103.1
29	Helsinki	Finland	103.1
31	Brisbane	Australia	102.8
31	Oslo	Norway	102.8
33	Paris	France	102.7
34	Singapore	Singapore	102.5
35	Tokyo	Japan	102.3
36	Boston	USA	101.9
37	Lyon	France	101.6
37	Yokohama	Japan	101.6
39	London	UK	101.2
40	Kobe	Japan	101.0
41	Washington	USA	100.4
41	Chicago	USA	100.4
43	Portland	USA	100.3
44	Barcelona	Spain	100.2
45	Madrid	Spain	100.1
46	New York City	USA	100.0
47	Seattle	USA	99.9
48	Lexington	USA	99.8
49	Winston Salem	USA	99.7
51	Osaka	Japan	99.6
51	Milan	Italy	99.6
51	Milan	Italy	98

Source: <http://citymayors.com>

(New York is the base city with a score of 100 points)

The paper will look at five cases from across the world to get an insight into what makes a well-planned and liveable city.

4.1 Vancouver

Vancouver is one city that regularly features amongst the best cities in the world. Of course in these rankings it is expected that most cities will be from the developed world, which can afford to provide a more comfortable life for their citizens. And the beautiful environs in which Vancouver is situated as well as its manageable area and population, all contribute to its attractiveness.⁸ Vancouver had a Town planning Commission established in 1926, and the city has followed a grid based zoning pattern (though it tended to ignore its natural topography at times). Till the 1970s the city followed a top down planning approach with a big role allocated to the central town planning agency. But from the 70s onwards there was greater emphasis on neighbourhood planning with the creation of citizen's planning committees. There was a rejection of the extensive freeways system and instead 8 bustling town centres as focal points for higher density residential neighbourhoods were developed. Apart from this, other policies followed by the authorities in developing the city have also had an important role to play in this. There are many instances of the use of New Urbanism principles in use in Vancouver. The city has excellent infrastructure and public transport system. It has a transit mall, elevated sky trains, separate bicycle plans to encourage their usage and pedestrian friendly streets that encourage people to enjoy the beauty of the city at a more leisurely pace. The city has a bustling downtown with high rises and condominiums being extremely popular. It was estimated that almost 20, 000 more people moved to downtown Vancouver in 2002 and yet traffic perversely declined as people gave up or reduced their usage of cars. Interestingly the civic authorities of the city worked in close consultation with private developers and builders to get concessions and their planning objectives. The builders were allowed to gain the downtown land cheap and build the towers high, to maximize the number of units they could sell. (The downtown peninsula was rezoned in several areas to allow this.) But in return, the city gets \$250 million (Canadian) in parks, schools, community centers and other amenities, gets final approval over design, and the towers

⁸ According to the 2001 census in Canada, the population of the Vancouver Metropolitan Area was 2,134,300 (about 22 lakh) with a density of 690.3/sq. km. The total area of the region is 2, 878.52 sq. km.

have to be narrow and spaced far enough apart to preserve light and views. The result has been an investment of more than \$3 billion Canadian to build 9,100 condos and apartments and 2.5 million square feet of office and retail space on formerly unused grounds like empty industrial lots and rail yards. And there are trendy shops dotting the downtown area, attracting people who are earning good money. Vancouver's ability to revitalise its downtown has left most town planners surprised.

4.2 San Francisco

San Francisco is the highest rated city on the American mainland (coming second to Honolulu) in the above-mentioned citywide survey. San Francisco follows the traditional Euclidean zoning regulation pattern. The San Francisco Planning Department gives a detailed list of the zoning regulations in the city and the types of permits that the citizens would have to obtain to build new structure or to modify existing ones. The website of the Planning Department has the following points to make regarding zoning:

Zoning Regulations- What it means⁹

- Zoning regulations govern different kind of uses that can be established in various parts of the city called "zones". If you want to open or expand a shop or conduct business in San Francisco, you should first find out from the Planning Department where such business can be conducted or if expansion is allowed.
- Zoning regulations govern sizes and shapes of buildings. Different parts of the city have different regulations that limit how big a building can be or how much can be added to an existing building. If you plan to build a building or add to an existing one, you should first find out from the Planning Department what the limitations are for your specific property.
- Zoning regulations limit the number of dwelling units or apartments that can exist on a property. If you are planning to add living area or cooking facilities to your house, you should first find out from the Planning Department if this is allowed in your zone and what other requirements accompany this activity.

⁹ Source: http://www.sfgov.org/site/planning_index.asp?id=24735

- Zoning regulations govern a number of activities that you may not have thought about such as requiring the accommodation of car parking off of the street or planting street trees under certain circumstances. Please consult with the Planning Department if you are contemplating any changes to your property or business.

The city also has a comprehensive long term General Plan for future improvement and development of the city. Apart from the works of the Planning Department the city also encouraged good governance and community projects in developing and revitalising inner city areas and encouraging water front development.

4.3 Houston

Houston is the only major American city that has no zoning regulations and as such it stands out for its uniqueness. It is constantly cited as a shining example by anti-zoning advocates who feel that a big city can easily be managed even without zoning. Developers are generally allowed to build without hindrance and housing remains cheap. It is the fourth largest city in the USA and features on the list of the best cities in the world at the 68th position. Recently the city rejected a ballot measure that proposed to introduce a zoning commission and it seems to be doing well enough. But in place of zoning Houston does have certain land use regulations to guide the direction of growth of the city. And in direct contrast to the upcoming New Urbanism ideas, Houston encourages sprawl and the use of automobiles. Every structure in Houston is supposed to supply plenty of parking spaces, and the streets are designed to be wide to allow for easy movement of vehicles.

4.4 Bogota

Bogota is ranked highest among the Latin American cities. In fact it has virtually transformed itself in recent years to become the thriving metropolis that it is today. The city has invested heavily in physical infrastructure and public transport. There have been substantial changes in many areas like pedestrian zones, road infrastructure, especially the implementation of paths reserved exclusively for bicycles, the revitalization of parks and sidewalks, and the implementation of the 'Transmilenio' bus rapid transit system. This new

bus transport system has been made by private contractors on Public money and it has greatly reduced traffic congestions in the city and made the transport more smooth. The city has been able to finance large parts of its investment by increasing its tax revenues and revaluing real estate taxes and gasoline taxes to reflect the benefits brought about by public investments in these areas. Bogota also introduced changes in zoning to keep in line with the rapid developments in urban mobility. Land-use integration was carried out with zoning for high-density land use along structural axes and busy transport routes, lower-density zoning away from access to public transport; making information on land use widely available. Historical building preservation was promoted by allowing potential transfer of rights to other areas. Government purchased land for low-income housing 8 km away from city knowing that corridor would be developed there. The decision making process was also speeded up with the mayor having considerable powers in choosing his councils and formulating policies, but at the same time he was made more accountable to the people.

4.5 Singapore

In Asia, Singapore holds a unique position. It has been ranked 34th among all the cities in the world and among the top cities in the Asian continent. As a city-state and a hub of economic activity, Singapore holds a very important position in the world economy. Although an analysis of urban planning in Singapore becomes more of a unique case study due to the authoritarian regime in the country, yet it is worthwhile to look at how the city transformed itself to a world-class metropolis from the position of a former colony. Urban planning here is under the charge of the Urban Redevelopment Authority, which focuses in constructing partially self-sufficient towns and districts and served by their respective regional centres. The emphasis is on high density and high-rise building development due to the limited area and growing population pressure. Land reclamation has been an important activity to aid the growth of the city. The city is divided into 55 urban planning areas and separate plans are drawn up for each one of them. Singapore has very strict zoning laws and land use policies. The reason why these seem to work well is that planning, decision making and implementation are quite quick and smooth in a small area

like the city and the government is strict in enforcing the letter of the law. The master plans for Singapore show a strong concern for nature conservation within the country and the protection of water-catchments areas.

Section V

Conclusion

The new Master Plan for Delhi should ideally have been ready by the time the 2001 MPD expired. Yet it's mid 2006 now and the MPD 2021 is far from finished. Till last year the city was still operating under the provisions of the MPD 2001 and its zoning regulations. According to these, almost 60-70% of the residential units and buildings were in violation of permissible use. Over 55% of the city's residents are living in areas other than regularised colonies.¹⁰ The figures are rather surprising and yet true, and it is in them that the sheer out-datedness of the plan provisions is reflected. It seems that the city has moved ahead even as the policies have failed to do so. Any regulations that declare the vast majority of people to be offenders indicate that it is the regulations themselves that need review. The report of Tejinder Khanna Committee, set up by the Government of India to look into various aspects of unauthorised constructions and misuse of premises in Delhi, is to serve as the basis for further changes and policy decisions. The committee feels that DDA has failed to cater to the needs of residential, commercial and institutional space of the city. It also feels that the multiplicity of decision-making bodies in the city leads to more delays and confusions.

The report has come out with many suggestions on how to handle the problem of unauthorised construction in the city. It has recommended the division of residential areas into three tiers.

Tier 1 is to have flexible land use policies and no or minimal restrictions on mixed land usage. Areas with a large footfall could be declared completely pedestrian zones also.

Tier 2 colonies shall face slightly stricter regulations and can choose from a given 'positive list' of activities, which are permitted in these areas.

¹⁰ Source: Tejinder Khanna Committee Report 2006.

Tier 3 colonies shall limit any non-residential activity to only professional services like doctors, lawyers etc. (these would be the so called 'posh localities' of the city).

The committee also envisages a reduction in the powers of the DDA as the sole planning body in the city. It calls for a 5 yearly review of the plan rather than a static 20 year plan. And it recommends the formation of resident action groups, 'urban panchayats' and other community participation measures to bring the voice of the people to the fore. At this stage, a committed and honest self-appraisal by the DDA and a clear and inclusive development plan are the need of the hour for the capital city.

References

1. About New Urbanism. Accessed on 8 June at <http://www.nationmaster.com/encyclopedia/New-Urban>
2. Chakravarty, P.G.D. 2001. Delhi's Ongoing Debate on Informal Settlements and Work Places- Issue of Environmental Jurisprudence.[paper online]. Accessed 29 May at <http://www.naerus.net/sat/workshops/2001/papers/chakrabarti.pdf>
3. Dietrich, W. 2003. A Tale of 3 Cities. *Pacific Northwest*, Feb 2, 2003
4. Fedako, J. 2006. Zoning is theft. Accessed on 30 May at <http://www.mises.org/story/2077>
5. Gattis, T. 2005. How zoning regulations inflate the housing bubble. Accessed on 14 July at <http://houstonstrategies.blogspot.com/2005/08/how-zoning-regulations-inflate-housing.html>
6. Gilroy, L. 2 May 2006. What Jane Jacobs Really Saw. Accessed on 30 May at <http://www.opinionjournal.com/la/?id=110008319>
7. Government of India. 2005. *Eighth Report of Standing Committee on Urban Development*. Ministry of Urban Development. Accessed on 13 June at <http://164.100.24.208/ls/CommitteeR/urban/8rep.pdf>
8. Government of India. 2006. *Report of the Tejinder Khanna Committee of Experts*, Ministry of Urban Development.

9. Government of National Capital Territory of Delhi. 2004. *Economic Survey of Delhi*. Planning Department, GNCTD. Accessed on 25 May at www.delhiplanning.nic.in
10. Krichel, T., Levine, P. 1997. The Welfare Economics of Rural to Urban Migration: The Hariss-Todaro Model Revisited [paper online]. Accessed on 22 May at http://www.econ.surrey.ac.uk/discussion_papers/RePEc/sur/surrec/surrec9702.pdf
11. Lewn, M. 2003. Zoning without zoning. Accessed on 13 July at <http://www.planetizen.com/node/109>
12. Malpezzi, S. 1996. Housing Prices, Externalities and Regulations in U.S. Metropolitan Areas [paper online]. *Journal of Housing Research*, Volume 7, Number 2, 209-241. Accessed on 6 June at http://www.fanniemaefoundation.org/programs/jhr/pdf/jhr_0702_malpezzi.pdf
13. Mercer Consulting. 10 April 2006. Zurich Named Again Best City In The World To Live In. Accessed on 10 June at http://www.citymayors.com/features/quality_survey.html
14. Miller, S. The Cities We Deserve Sam. Accessed on 22 May 2006 at <http://www.india-seminar.com/2005/545/545%20sam%20miller1.htm>,
15. Mohan, M. 2003. GIS Based Integrated Approach for Monitoring and Modeling of Hyper-Urbanization for Sustainable Environmental Development in Delhi [paper online]. Accessed on 29 May at http://www.fig.net/pub/morocco/proceedings/TS18/TS18_2_mohan.pdf
16. Montezuma, R. 2005. The Transformation of Bogota, Colombia, 1995-2000: Investing in Citizenship and Urban Mobility. [paper online]. *Global Urban Development Magazine*. Volume 1, Issue 1. Accessed on 12 July at <http://www.globalurban.org/Issue1PIMag05/Montezuma%20article.htm>
17. New York Department of City Planning. 1990. *NYC Zoning Handbook: A Guide to New York City's Zoning Resolution*. Accessed on 26 May at http://www.tenant.net/Other_Laws/zoning/zontoc.html
18. Oberlander, J. 1996. *The Greater Vancouver Book*. Edited by Chuck Davis, Linkman Press. Accessed on 12 July at <http://www.discovervancouver.com/GVB/vancouver-history-planning.asp#top>
19. Payne, G. 2000. Best Practices for Spatial control and Development Control in Developing Countries. [paper online]. Accessed on 30 May at http://www.ucl.ac.uk/dpuprojects/drivers_urb_change/urb_infrastructure/pdf_city_planning/Payne2000_BestPractices_Spatial_Planning.pdf

20. Pittsburgh City Planning. 2006. Zoning Code. Accessed on 8 June at http://www.city.pittsburgh.pa.us/cp/html/land_use_control_and_zoning.html
21. Quigley, J.M., Rosenthal, L. A. 2005. The effects of Land Use Regulation on the Price of Housing: What do we know? What can we learn? [paper online]. *Cityscape: A Journal of Policy Development and Research*. Volume 8, Number 1, 69-137. Accessed on 6 June at <http://urbanpolicy.berkeley.edu/pdf/QR2005.pdf>
22. Q & A with Jonathan Levine, Author of Zoned Out http://www.rff.org/rff/RFF_Press/CustomBookPages/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=20320 Accessed 5 June
23. Rajan, C., Mobility: At what cost. Accessed on 13 July at http://www.infochangeindia.org/agenda5_05.jsp
24. Sauvik. 14 march 2006. Judicial Tyranny. Accessed on 30 May at <http://www.yazadjal.com/2006/03/14/judicial-tyranny/>,.
25. Shepstone, T. J. Planning In a Free Society Accessed 5 June at <http://www.shepstone.net/PlanningInFreeSociety.pdf>
26. Schill, M.H. 2005. Regulations and Housing Development: What We Know. [paper online]. *Cityscape: A Journal of Policy Development and Research*. Volume 8, Number 1, 5-19. Accessed on 6 June at <http://www.huduser.org/Periodicals/cityscape/vol8num1/ch1.html>
27. Urban Land Management Plans: Master Plan for Disaster. Ch. 4. In *Law, Liberty and Livelihood: Making A Living On The Streets*, edited by Parth J. Shah and N. Mandava. 2005. New Delhi: Academic Foundation.
28. Urban Planning in Singapore. 2006. Accessed on 13 July at http://www.nationmaster.com/encyclopedia/Urban-planning-in-Singapore#Current_policy
29. Verma, G.D. 10 February 2003. Delhi Master Plan / Revision. Accessed on 22 May at <http://www.architexturez.net/+subject-listing/000118.shtml#list-cont>,
30. What does the Planning Department do, The San Francisco Planning Department, Accessed on 14 July at http://www.sfgov.org/site/planning_index.asp?id=24735
31. Zoning Laws. 2003. Accessed on 6 June at http://www.importanceofphilosophy.com/Bloody_ZoningLaws.html

ANNEXURE
Development Controls

Table 6: Plotted housing guidelines

S.No.	Area of plot (sq.m.)	Ground Coverage %	FAR	No. of DUs
1.	Below 32	75	225	1
2.	Above 32 to 50	75	225	2
3.	Above 50 to 100	75	225	3
4.	Above 100 to 250	66.66	200	3
5.	Above 250 to 500	50	150	3(4)
6.	Above 500 to 1000	40	120	6(8)
7.	Above 1000 to 1500	33.33	100	9(12)
8.	Above 1500 to 2250	33.33	100	12(16)
9.	Above 2250 to 3000	33.33	100	15(20)
10.	Above 3000 to 3750	33.33	100	
11.	Above 3750	33.33	100	18(24)

Source: Draft MPD 2021

Group Housing

1. Minimum size of plot- 3000 sq. m.
2. Maximum Ground Coverage - 33.3%
3. Maximum FAR- 167
4. Height- 33 m
5. Parking- 2.0 ECS/100 sq.m. floor area
6. The density may vary (10% variation permissible in all categories) for specific categories as given below:
 - a. Category I (25- 40 sq.m) – 500 dwelling units (DUs)/Ha
 - b. Category II (50- 65 sq.m) – 250 DUs/Ha
 - c. Category III (85sq.m and above)-175 DUs/Ha
7. Plots for group housing should be located on roads facing a minimum width of 18 m right of way (ROW).

8. Additional FAR upto a maximum of 400 sq.m shall be allowed to cater to community needs such as community / recreational hall, crèche, library, reading room and society office.
9. Any group-housing scheme for DUs of 1000 sq.ft. (92 sq. m.) or more shall contribute towards the housing fund for EWS.
 - a. a) The Private developer shall ensure that minimum of 20% of the DUs constructed are for EWS and lower category. Such flats should have a carpet area between 25 sq.m. and 40 sq.m.
 - b. b) Ground coverage upto 40% may be allowed to achieve low-rise high-density housing without lifts.
10. Stilts: If the building is constructed with stilt area of non- habitable height and is proposed to be used for parking, landscaping etc. the stilt floor need not be included in FAR.
11. In case of Bungalow area (Part zone D) and Civil Lines area (Part zone C), any residential density in group housing pockets shall be prescribed on the basis of detailed scheme.

Cluster Court Housing

1. Minimum size of plot- 3000 sq.m.
2. Maximum FAR- 167
3. Maximum height for plots upto 45 sq.m.- 11.0 m with maximum coverage 100% subject to light and ventilation condition
4. For plots above 45 sq.m.- 12.5 m with maximum coverage 100% subject to light and ventilation condition
5. The net housing density permissible 225 DUs per ha. with a 15% variation on either side and could be averaged for more than one pocket.
6. Minimum street in front of pocket:12 m.
7. No projection outside the building envelope.
8. Each cluster court house is for one dwelling for a single family.
9. Basement:
 - a. Basement in case of plotted development if constructed shall not be included in FAR calculations.
 - b. Basement shall be below the ground floor. Basement area may, however, be extended below the internal courtyard and shaft.
10. Stilts:
 - a. If a building on a residential plot is constructed on stilts, the same shall be counted in the permissible FAR, irrespective or whether it is used for parking, landscaping or as play area etc.
 - b. In case of group housing, if the building is constructed with the stilt area of nonhabitable height and is proposed to be used for parking, landscaping etc., the stilt floor need not be included in the FAR.
11. Parking:
 - a. In respect of individual plot, the calculation for parking space shall be based on the total permissible FAR of plot size above 100 sq.m. @2.0 ECS for 100 sq.m. of total floor area.

- b. Parking provision is to be made, in the layout plan partly by way of pool parking and partly in the individual plots. For plots of 60 sq.m. and above, parking is to be provided within the plot.
12. Density: For the purpose of density calculations, the dwelling unit shall be considered to accommodate 4.5 persons and the servant quarter to accommodate 2.25 persons.
13. Servant quarter: No separate servant quarter block or servant quarter as part of main building shall be allowed if the garage block space is merged with the main building. Provision for a servant's room as part of the dwelling unit within the permissible coverage and FAR shall be allowed with maximum size of servant quarter as 20 sqm.

Table 7: Commercial Development

USE/ USE PREMISES	MAXIMUM			PARKING STANDARD ECS/100 SQM.	OTHER CONTROLS
	GC (%)	FAR	HEIGHT (mts)		
a) Commercial					
i. Convenience Shopping Centre / Local Shopping Centre	40	100	15	2	
ii. Service Market	40	100	15	2	
iii. Organised Informal					-
iv. Community Centre	25	125	NR*	3	Maximum 5% additional ground coverage shall be allowed for
v. District Centre/ Sub Central Business District / Sub-City Level Commercial areas	25	150	NR*	3	Maximum 5% additional ground coverage shall be allowed for
b) Metropolitan City Centre / Central					

i. Commercial Plot: Retail & Commerce Metropolitan City Centre i.e. Connaught Place & its Extension	25	150	NR*	3	i. The size of plot shall be as in the layout of commercial area and any subdivision of the plot in Connaught Place and its extension should not be permitted ii. The development controls shall be in accordance with the comprehensive plan of the area
ii. Commercial Complex at Fire Brigade Lane and Janpath Lane	25	150	NR*	3	i. Ground coverage and FAR shall be calculated on the area of presently available plots. ii. The area shall be developed on
ii. Asaf Ali Road (the area shown as commercial strip in	80	200	20	3	Setbacks are not mandatory
c) Hotel	30	150	NR*	3	i. Maximum 5% additional ground coverage shall be allowed for providing atrium. ii. Maximum 20 % of the FAR can be used for the Commercial
d) Any other Commercial Centre (including Commercial component along with Railway/ MRTS Stations	25	100	NR*	3	Development controls can vary subject to approved scheme.

Source: Draft MPD 2021

Table 8: Norms for Land Distribution in Industrial Areas

No	USE PREMISES	%
1.	Industrial Plots (Net Area)	55-60
2.	Recreational: Buffer Zone, Parks, Water Bodies, Green under HT lines, etc.	10-12
3.	Commercial: Shopping Centre, Petrol Pumps, Guest House/ Budget hotels, Lodging and Boarding, Service and Repair shops, Communication/ Telephone Exchange, etc.	2-3
4.	Facilities <ul style="list-style-type: none"> • Public and Semi-Public: Fire Station, police Station, Hospitals, Dispensary, Dharamshala, Night Shelter, Day Care Centre, etc. • Utilities: Electric Sub-Station, CETPs, Pumping Stations, Underground Reservoirs/ Fire Fighting Tanks and other utilities, etc. 	8-10
5.	Transportation: Circulation, Loading/Unloading Area, Parking, ideal truck Parking, Goods Vehicle Parking etc.	18-20
	Total	100

Source: draft MPD 2021

Table 9: Development Controls: Industry

Use Premises	Maximum			Parking ECS/ 100 sqm. Of floor area	Activities Permitted	Definition
	GC (%)	FAR	Ht (mts)			
Industrial Plot i) 50 sqm. and below ii) 51 sqm. to 400 sqm.	100	200	8	2	Industrial units: unit retail Sales outlet and administrative office upto maximum 10% of floor area on ground floor only; residential flat upto the maximum	A premise for industrial activity having upto 50 workers with nonhazardo
	60	180	15	2		

iii) 401 sqm. and above	50	150	15	2	extent of 5% of the floor space or 50 sqm. whichever is less for watch & ward and supervision, incidental storage and administrative office related to the industrial activity.	us, non-polluting performance.
Flatted group Industry (Minimum plotsize – 400 sqm.)	30	150	26	2	Industrial units; administrative office, watch and ward, maximum upto 5% of floor area or 20 sqm. whichever is less, storage related to the manufacturing activity.	A premise having a group of small industrial units having upto 20 workers with common services and facilities with nonhazardous, non-polluting performance.

Source: Draft MPD 2021