

MASTER PLAN for DELHI

MASTER PLAN FOR DELHI

**PREPARED BY THE DELHI DEVELOPMENT AUTHORITY AND APPROVED
BY THE CENTRAL GOVT. UNDER THE DELHI DEVELOPMENT ACT, 1957**

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MASTER PLAN FOR DELHI

TABLE OF CONTENTS

	PAGE		PAGE
Introduction	(i) to (iv)		
CHAPTER I		CHAPTER II	
The Land Use Plan		Zoning & Sub-division Regulations	
1. Land Use Plans for Delhi Metropolitan Area	1	A. Zoning Regulations	44
2. Land Use Plan for Urban Delhi	5	B. Sub-division Regulations	64
(a) Major policy decisions	6	APPENDICES	
(b) Planning synthesis	7	I. Policy note on Industries	74
3. Government Offices	9	II. Summary of Recommendations.	87
4. Commercial Areas	12	M A P S	
5. Industry & Manufacturing	17	1. Land Use Plan.	
6. Residential Areas	22	2. Urban Delhi-Existing Land Use.	
7. Development Zones	26	3. Zonal Map	
8. Traffic & Transportation	28	4. Proposed Circulation Pattern—Walled City	
9. Community Facilities and Services	32	Glossary	
10. Need of Review and Revision	38		94
11. Proposed rights of way in Old City	40	I N D E X	
12. Staging of Development	42	Alphabetical Index	95

MASTER PLAN FOR DELHI

INTRODUCTION

To check the haphazard and unplanned growth of Delhi, following the partition of the country and the phenomenal growth of the city's population, with its sprawling residential colonies, without proper layouts and without the conveniences of life and to guide the growth of the city, the Central Government in November, 1955 set up the Delhi Development (Provisional) Authority. In December, 1955, the Town Planning Organisation was set up by the Government of India, Ministry of Health, and was placed under the administrative control of the Chairman, Delhi Improvement Trust to advise the Authority on all matters relating to planning in the National Capital.

2. The Town Planning Organisation, in September, 1956, produced the Interim General Plan, which was intended to provide an outline for planned development during a period of two to three years, *i.e.* until a comprehensive long range plan was prepared.

3. On the 30th December, 1957, the Delhi Development Authority—an 11-member body with the Administrator of the Union Territory of Delhi as the *ex-officio* chairman, was constituted by an Act of Parliament, called the Delhi Development Act, 1957, to promote and secure the development of Delhi according to plan. The Act required the Authority to carry out a civic survey of, and prepare a Master Plan, for Delhi.

Accordingly, the Authority, with the help of the Town Planning Organisation, and after having had such surveys con-

ducted as were necessary, drew up a draft Master Plan, consisting of numerous maps and plans embodying the studies and proposals and an explanatory text, for an estimated population of about fifty lakhs in 1981, and after seeking the advice of the Advisory Council of the Authority, released it to the public on the 8th July, 1960, for the purpose of inviting objections and suggestions. An outline of the draft plan, in three languages, namely, English, Hindi and Urdu, explaining the broad features of the plan, for the benefit of the public, was also prepared. A period of three months was allowed for filing objections etc., and during this period, adequate publicity was given to the draft plan by displaying the maps and charts to the Press, Members of Parliament and to the general public.

4. Nearly 600 objections and suggestions were received from the public, co-operative house-building societies, associations of industrialists, local bodies, Delhi Administration and various Ministries and Departments of the Government of India. The Authority appointed an *ad-hoc* Board consisting of Kumari Shanta Vashist, M.P., Shri C. K. Nair, M.P., the Commissioner, Municipal Corporation of Delhi and Sarvshri Sikandar Lal, Councillor, Municipal Corporation of Delhi and Balbir Singh Saigal, Engineer-Member and this Board co-opted Shri Brij Kishan Chandiwala and Dr. R. K. Bhardwaj, Members of the Advisory Council of the Authority, to go into these objections. The Board granted a personal hearing to all objectors etc. and also carried out local inspections and made its report to the Authority on the 17th March, 1961.

5. The Authority obtained the advice of the Advisory Council on this report and examined all the proposals in great detail in the course of several meetings. As a result of this scrutiny some of the proposals have been modified and some new ones incorporated.

6. Given below are a few of the important recommendations made in the Master Plan.

It was felt that the redevelopment of the Old City by way of large scale clearance and reconstruction was not immediately practicable, and it has, therefore, been suggested that after assessing the requirements of schools, dispensaries, parks etc., sites of dilapidated houses or of those demolished by the Municipal Corporation of Delhi might be acquired at suitable places for the location of the community facilities. Similarly, as it was not practicable to widen all the roads in the Old City, only the major roads should be widened in the first stage to the minimum extent considered necessary. It has been proposed that the Mata Sundari area should be partly reserved for housing the evictees from the Delhi Ajmere Gate Extension Scheme and also to take the overspill of population from the Old City. To meet the problem of settlement of low income group people—about 70,000 in number, who migrate to Delhi from rural areas every year, the Authority has proposed to earmark suitable sites in several zones where these very low income group people may be able to put up cheap houses but the layouts would have to be according to standards. The squatters in bustis are to be relocated in various parts of the urban area so that they are integrated into the neighbourhood community. It is of the utmost importance that physical plans should avoid stratification on income or occupation basis. The residential density patterns have been functionally related to the work centres, recreation areas and community facilities. Hence, a more rational distribution of densities is proposed by a gradual thinning of the density in the Old City and by increasing the density in New

Delhi and in Civil Lines. An integral part of the plan is the "Sub-division Regulations" which, by laying down standards for streets and community facilities, will guide new development and the "Zoning Regulations" which indicate the land use permissible in the various zones and the density, coverage, floor area ratio and set-backs for various types of development. They also define the period by which incompatible land uses like obnoxious industries are to be relocated.

To meet the increasing need of commercial space in central areas, it is recommended that the Connaught Place commercial area be extended upto Keeling Road and the proposed over-bridge over the railway. It is also proposed to have 15 district shopping centres to decentralise commercial activity and to make each Division of the City self-contained. New sites for location of Government offices have also been proposed in the various Planning Divisions into which the City has been divided. Several new areas are proposed for industrial development and the total area of the land earmarked for this purpose is about 5800 acres. This would include flatted factories, which are multi-storeyed structures located near residential areas, for the use of small-scale non-nuisance industries.

In addition to Subzimandi, two wholesale fruit and vegetable markets have been recommended, one near the Okhla Railway Station and the other near the Daya Basti Railway Station near Sarai Rohilla. Godowns for the storage of foodgrains will be located in areas marked for the purpose, and only the offices of whole salers and retail foodgrain shops would be allowed in the two congested areas of Naya Bazar and G.B. Road. Similarly, godowns for timber will be located in ware-housing areas and the presently congested areas of Teliwara and Deshbandhu Gupta Road will deal only in retail timber trade. A 15 acre site on the Mehrauli Road near the intersection of this road with the railway line has been proposed for a general market. Additional land for oil storage depots, which are at present located on

Rohtak Road, and will continue there, has been earmarked near Nangloi Railway Station and also near Palam Railway Station, and in Shahdara.

A university centre in the south near the junction of Kitchner Road and Ring Road has been proposed. Twenty-two new colleges, each covering an area of about 15 acres and 5 additional university centres of about 30 to 40 acres each to serve a group of 4 or 5 colleges, have been earmarked in the Plan. Twenty additional 500-bed hospitals each 15 to 25 acres have also been proposed. An area of about 600 acres has been reserved south-west of the new engineering college, for a new university and for social and cultural institutions. A 45 acre site in the neighbourhood of Siri village area has been earmarked for an all-India cultural centre. This is in addition to the areas earmarked on the Central Vista east of Janpath, near Sapru House and in the proposed Civic Centre which will serve as social and cultural institutions for Delhi. District parks for recreation, local open spaces for play-grounds and community centres and local shopping areas to serve each neighbourhood have been recommended in the plan.

In view of the large scale development proposed for Shahdara, which is expected to have a population of about 7½ lakhs in 1981, the plan provides a large commercial area and four road bridges in addition to the existing road-cum-railway bridge. Two more major road links between Old Delhi and New Delhi have been recommended as over passes over the railway line—one connecting Circular Road to Parliament Street and the other connecting Mathura Road to College Road and Ferozeshah Road. An Inner Ring Road and a Ring Railway have been recommended to avoid traffic congestion and facilitate quick flow of traffic in the urban core in addition to the Ring Road which has already been constructed. Reservations for new railway stations on the Ring Railway, expansion of the existing railway stations, widening of major arterial roads, improvement

of road intersections and grade separations, arterial cycle tracks separate from the carriageway are some of the recommendations to make a good traffic circulation system. Bus stations are proposed to be located in different parts of the city. The central bus station which is at present located at the Delhi Main Railway Station would be shifted to a 10 acre site near Kashmeri Gate. An idle parking area of about 20 acres is earmarked east of Bela Road and north of the sanitary drain, for inter-state buses and trucks. Parking and servicing stations are proposed to be located near Id Gah on Id Gah Road and in Shahdara with several idle parking and servicing areas for trucks.

The plan recommends an inviolable green belt approximately one mile in depth around the 1981 urbanisable limits and has proposed the setting up of "urban villages" to strengthen the rural economy.

The plan has also assessed the needs of the Capital in power, water supply and sewerage and has made provisions for location of water works, power houses and sewage treatment plants.

7. The Authority takes this opportunity of acknowledging the very valuable help rendered by the Town Planning Organisation which conducted comprehensive surveys to collect the factual data and also prepared a draft of the Master Plan for submission to the Authority. They assisted both the Screening Board and the Delhi Development Authority with their technical advice and have given a final shape to the plan in accordance with the decisions of the Authority.

The Authority also gratefully acknowledges the help and guidance received from the team of consultants made available by the Ford Foundation in conducting the surveys, tabulation of data and in the preparation of the draft Master Plan.

8. The thanks of the Authority are also due to the Government of India Press, particularly Shri C. Biswas, Manager

Photo Litho Wing, for their help and ready co-operation in printing the various maps and the text of the Draft Plan.

9. The Authority also gratefully acknowledges the contribution made by the former chairman of the Authority Shri A. D. Pandit.

10. The plan has been prepared finally today by the Delhi Development Authority *vide* their Resolution No. 387 for submission to the Government of India, and in token thereof we, the members of the Authority do hereby affix our signatures hereunder:—

Chairman

1. Bhagwan Sahay

Vice-Chairman.

2. G. Mukharji

Members

3. Kumari Shanta Vashisht
4. C. Krishnan Nair
5. Sikandar Lal
6. Shiv Charan
7. R. R. Bahl
8. A. R. Malhotra
9. B. S. Srikantiah
10. Bishan Chand
11. Balbir Singh Saigal

Delhi Development Authority,

Regal Buildings,

New Delhi, 30th November 1961.

This Master Plan has been approved by the Central Government under section 9 (2) of the Delhi Development Act, 1957, and was published on the 1st September, 1962.

CHAPTER I

THE LAND USE PLAN

1. LAND USE PLANS FOR DELHI METROPOLITAN AREA

The Delhi Metropolitan Area of about 800 sq. miles, which has been defined after careful study, comprises the Union Territory of Delhi and the Ring Towns of Loni and Ghaziabad in U.P., Faridabad, Ballabgarh, Bahadurgarh and Gurgaon in Punjab and Narela in Delhi territory. To achieve a rational growth of Delhi which has been expanding in a most haphazard way, it is necessary to plan this whole area as a composite unit and have an integrated and balanced overall programme of development. The metropolitan area has a good deal of homogeneity and physical, socio-economic and cultural unity. This factor makes planning less difficult in spite of political and administrative hurdles. The Ring Towns must be developed not only to deflect some of the population that would otherwise come into Delhi and jeopardize the planned growth of Delhi but also to help these towns to grow in a planned way. What is visualized is a compact orderly growth of urban Delhi, with six Ring Towns, self-contained in matters of work and residential places but with strong economic, social and cultural ties with the central city. This is the only way to prevent the increasing urban sprawl which is threatening to grow into

one giant urban mass with its long and senseless commuting to work, substandard services and lack of social cohesion.

The development of the ring towns can be ensured by strengthening their economic base. This has to be done by planning industrial development and locating governmental offices in these towns. Besides these positive measures of development, there will also have to be the same degree of control of development as there would be in Delhi, so that uniform standards are obtained throughout the area.

The proposals made in the work studies for the Ring Towns are summarised in Table No. 1 and the land requirements have been indicated. In 1951 the total population of these six Ring Towns was 1,25,000 and the projected population for 1981 is 8,42,000. The total requirement of land is 21,300 acres. The projected industrial employment for 1981 is 1,14,000 and the land requirement for industries is estimated at 4,430 acres. Similarly, the employment in government offices for 1981 is 50,000 for which 230 acres are required. However, the precise quantities will be determined by the State Governments concerned when they work out detailed plans for the areas within their jurisdiction.

TABLE 1 : Land Requirements in Ring Towns 1981

Ring Towns	Population in 1000's		Manufacturing Employment and land—1981			Government Employment and land—1981			Total land requirements 1981	
	1951	1981	Total workers	Employment density per acre	Land acres	Total workers	Employment density per acre	Land acres	Gross	Land acres
1. Ghaziabad .	44	357	50,000	25	2000	20,000	200	100	45	8,000
2. Faridabad } .	31	285	40,000	30	1330	15,000	250	60	40	7,150
Ballabgarh } .	6	29	3,000	20	150	..	..	..	40	750
3. Gurgaon .	19	48	5,000	20	250	5,000	250	20	30	1,600
4. Bahadurgarh .	11	29	4,000	20	200	..	..	..	30	1,000
5. Loni .	4	23	2,000	20	100	..	..	..	30	800
6. Narela .	10	71	10,000	25	400	10,000	200	50	35	2,000
TOTAL .	125	842	114,000	..	4430	50,000	..	230	..	21,300

NOTE : Sonepat in the Punjab and Baghpat in U.P. will also require to be developed adequately in relation to the Delhi Metropolitan Area.

Ghaziabad:

The U.P. Government has published a draft plan for Ghaziabad as well as for areas in U.P. contiguous to Delhi-Shahdara. The latter has been incorporated in the Land Use Plan for Delhi Urban Area. The plan for Ghaziabad prepared by the U.P. Government is in general agreement with proposals for the Delhi Metropolitan Area indicated here.

Ghaziabad is envisaged as an industrial town with 50,000 workers engaged in manufacturing out of a total population of

about 3,57,000 in 1981. It is also proposed to diversify the economic base with an employment of 20,000 in government offices. The land allocations are 2,000 acres and 200 acres respectively. The total area to be urbanized with adequate land for residential, commercial, parks and other public and semi-public use is about 8,000 acres.

Faridabad—Ballabgarh:

Ballabgarh is only 3 miles from the new town of Faridabad. Nearby is also the old town of Faridabad. All the three are in

the Punjab; and the Government of Punjab will have to draw up a master plan for this area. On either side of the Mathura Road which runs through the area, industries are springing up like mushrooms. A master plan to regulate and guide development is long overdue. The Town Planning Organisation had drawn up a tentative plan for the area which can form a guide for the Punjab to follow and prepare a master plan. It is suggested that Faridabad and Ballabgarh should have an integrated plan. Like Ghaziabad, Faridabad too will have a strong industrial base with about 43,000 workers engaged in manufacturing, out of a total population of 3,14,000 in 1981. It is also recommended that enough government offices be established here for some 15,000 employees. The total land requirement will be about 7,900 acres while the allocation for manufacturing will be about 1,500 acres and for Government offices about 60 acres. The town can be served by tube wells since it has good underground water potential.

Gurgaon:

This District town in Punjab is handicapped for want of good water sources and only a modest growth is contemplated. It is proposed to have 5,000 industrial workers out of a total population of 48,000 in 1981. A small industrial estate of 250 acres and another 20 acres to locate Government offices with 5,000 workers would suffice. The total area required for the township is 1,600 acres. No plan has been prepared for this town. The Punjab Government should undertake this work.

Bahadurgarh:

This town also has no source of good water supply. It is expected to have a population of 29,000 in 1981 with a land area of about 1,000 acres. About 200 acres would be required for industrial employment for about 4,000 workers. For this town too, the Punjab Government should prepare a master plan.

Loni:

This small town of just over 4,000 in U.P. is proposed to be developed for a population of 23,000 in 1981. Water can be made available from tube wells. An industrial estate of 100 acres with 2,000 workers will provide the economic base. The U.P. Government has already published a master plan, which is in general agreement with the proposals given here.

Narela:

The proposal to develop Narela as one of the Ring Towns around Delhi forms a part of the recommendations of the Master Plan for the Delhi Metropolitan Area. It is within the Union Territory of Delhi, near the northern border.

This township is proposed to be developed to absorb 60,000 people by 1981 in addition to its existing 11,000. The development proposals provide for Government offices and industry to make the town a self-contained unit.

The existing settlement of Narela lies about 18 miles north of Delhi and is situated on the Delhi-Ambala Railway, off the Grand Trunk Road. It has good underground water potential.

Important Features:

Narela has the following important features:

1. It has an established wholesale mandi dealing in grains, sugar, chilli, jaggery, cotton and oil-seeds.

This mandi requires remodelling to cope with the business activities of the growing town.

2. It has a flourishing manufacturing industry of Persian wheels and agricultural implements which find a market in U.P. and Punjab.

3. It has large oil crushing mills and the products thereof are sold all over India.

4. It has a medium-size vegetable and fruit market.

Area and Population:

The Municipal town of Narela together with the adjacent village of Mamur Pur has an area of 3,372 acres approximately. The settled area of Narela town has an area of 83 acres. There is also a refugee colony some four furlongs to the south of the main town which has been planned by the Ministry of Rehabilitation. The Ministry has acquired an area of 40 acres for the colony. The town extends from north to south to about 3/8 mile and from east to west to a distance of about 1/2 mile. The existing town had a population of 9,597 persons according to the 1951 census. The present population is estimated to be more than 11,000 persons.

Proposals:

The proposed land use plan for Narela takes into consideration the topographical features, existing road pattern, the built-up area and the existing land uses. The natural features of the low lying belt have been used to form a recreational track through the neighbourhood pattern. The green space to the east of the existing settlement will accommodate active community recreation and the social activities of the town. High Schools on the basis of one per 15,000 population have been allocated. Local shopping has been placed within easy access of each sector.

The industrial sector is proposed to be linked by a spur connection to the main railway line. The highway pattern has been planned to provide easy ingress and egress for the materials and products from the industrial area. Additional land has been reserved to allow for future expansion of industry. Sectors adjoining industry will house the industrial workers.

The density pattern for the residential areas would meet the varying needs of the immigrant population. The seven sectors provide a gross residential density of 50 to 60 persons per acre.

The sector for Government offices is placed centrally to reduce commutation to the minimum. A peripheral network of roads around this sector will permit free flow of traffic.

Besides the wholesale business in the mandi, Narela will have a central business district where all the commodities could be purchased.

Proposed Land use Plan: NARELA

Broadly the proposed land use plan for Narela includes the following :

	Acres
1. Gross residential area	1167
(existing residential area)	83
2. Large open areas	268
3. Industrial areas	225
4. Reservation (future industrial)	150
5. Government Offices	50
6. Commercial and Business	35
<hr/>	
Population in 1981	71,000 persons.

When the urbanisation of Delhi reaches its optimum limit in 1981, Narela township will be an ideal place for suburban living.

The proposals on pages 3 and 4 in respect of Narela are indicative only and not mandatory.

2. LAND USE PLAN FOR URBAN DELHI.

Characteristics of the Plan:

While the portion of the Master Plan relating to the Metropolitan area will ensure the success of the urban plan by positive development in the Ring Towns and regulatory measures in the intermediate areas, the Land Use Plan for urban Delhi has been conceived to find solutions for the entire complex of inter-related urban problems viz. social, economic and governmental. It may rightly be called a comprehensive plan. Since it aims at balanced and integrated development to take care of present and future growth upto 1981, it is also a long range plan. It has been kept in scale with the economic needs of its citizens and the financial resources of the nation whose capital it is. By means of public hearings and participation of the people in the making of the plan, it has been drawn up in keeping with community sentiments. It gives an integrated picture of the future city by combining the future land use pattern with a long range programme of community facilities and services, having kept in view the objective of making these functionally related, economically sound and socially desirable.

The Land Use Plan is general. But by the nature of the legislation under which it has been prepared it carries legal sanction and has a certain amount of rigidity, though it can be amended according to law from time to time. There is provision to revise the plan when considered necessary after publication and public hearing. The Zoning Regulations are also embodied in the plan. These should be strictly enforced in regard to each kind of development and the proposals in this report are subject to these stipulations. Space standards for community facilities and services stipulated in the Master Plan will govern zonal and sub-division plans. Since the land requirement for the next ten years or so has been notified for acquisition by the Delhi Administration, all future land use can be regulated by the Master Plan and land sub-division controlled by zonal development plans.

Present Reality Basis of Plan :

The Land Use Plan, is in essence, the translation into physical form of the planning policies and principles. The policies have been based on the realities of the present dynamic but rather unregulated and chaotic conditions obtaining in the Metropolis.

To sum up the present situation, haphazard and sub-standard development in the metropolitan area is going on at a rapid rate, especially on the highways leading to the capital and to a lesser extent in the Ring Towns. In Delhi, itself, there is great disparity in residential density in the various areas (ranging from 1,000 persons to as low as 15 to the acre) with social, economic and physical barriers between Old and New Delhi. The city has grown rapidly to the south and west making it functionally unbalanced. This has stretched the lines of communication and also made the provision of municipal services and other facilities, which are so essential for urban living, difficult. There is an acute shortage of housing resulting in extreme overcrowding, congestion and insanitary conditions. This is particularly bad in the Old City where there is almost an absence of community facilities and only sub-standard services are available. There are an estimated 50,000 dwelling units in bustis scattered all over the city. Even the new rehabilitation colonies are fast deteriorating. There is concentration of government employment centres and shopping areas which has resulted in traffic bottlenecks. At present housing is not related to employment centres and people have to travel long distances to their places of work. The position is aggravated by the absence of an adequate and cheap transportation system. Industry is dotted all over the crowded Old City where it is a source of nuisance. There are also large noxious industries like the slaughter house, and fire hazard trades, like the timber depots, in congested residential areas. There is an undesirable mixing of land uses almost everywhere in the city; residential with shopping and industry; wholesale with retail; business with service industry. Delhi, as a whole, is acutely defi-

cient in parks, schools, other community facilities and municipal services.

(a) Major Policy Decisions:

One of the major policy decisions, *viz.* of considering urban Delhi as the core of the larger Metropolitan complex has been stated and the necessity of planning and developing the Ring Towns with a sound industrial base and employment in Government offices, with regulatory measures in the intermediate rural areas, has been explained.

The other major policies are stated here. Delhi will continue to be a major government centre. The present central secretariat complex has little room for expansion. Therefore, new sites of adequate size within Urban Delhi must be found to locate the Government offices which have to be essentially in Delhi in order to be in close touch with the ministries. Adequate housing must be made available related to these offices within reasonable distances.

It would be undesirable to increase the proportion of Government employment in the occupational structure of the city. What is required is a balanced economic base for which purpose it would be necessary to encourage the development of permissible industries. It would, however, be unwise to locate large and heavy industries in Delhi, which would, besides posing problems of air pollution, waste disposal, traffic congestion etc., also give an industrial bias to the city which would be undesirable in a national capital. Moreover, Delhi does not have enough water supply and power to sustain large scale industries.

Because of its location, Delhi will continue to be a major financial, business, commercial and distribution centre and with the growth of population there would be a proportionate increase in the people employed in trade and commerce which would provide the necessary diversity to the economy. The land

requirements for this increasing growth must be provided for in the plan.

There is heavy concentration of population in the Old City which is also closely built up. Since large scale clearance and reconstruction is ruled out as an immediate possibility because of the lack of resources and the low capacity of the people to pay rent, at least the minimum community facilities and services and reasonable means of communication will have to be provided here, which will in a way remove congestion from the area. Employment centres like flatted (multi-storeyed) factories will be set up in selected areas to house such small industries as will not cause nuisance to the residential areas, but noxious industries and village like occupations like dairies, potteries etc. will have to be removed from here. Certain areas like the Mata Sundari area which is near the Old City will have to be partly reserved for housing the population from the redevelopment projects to decongest the Old City. Similarly, the very low density areas of New Delhi like Gole Market areas, York Place area etc. must be replanned at higher density to make more intensive use of valuable land in the core of the city. Due care must be taken to preserve the most pleasant and unique residential character of these areas.

To meet the large deficit in housing, a programme of development has to be launched in a big way. The present busti dwellers will be provided for in tenements. There will be an increasing number of houses built for government employees and developed land will be made available for both low income and higher income people. To counteract against squatting in bustis, it is proposed to earmark reasonable areas in several zones for the low income group people who migrate to Delhi throughout the year from rural areas. Considering their economic condition, they should be permitted to construct very cheap houses on a proper layout with all the necessary reservations of sites, and the minimum of municipal services provided by public agencies.

Planned growth in the past has been very much hampered by lack of developed land and speculation in land. The stock of land built up by Government when New Delhi was planned proved to be a great stand-by, particularly in settling the large number of displaced people. Very little of that is left now. As a result the prices of developed land have soared up in recent years and the low and middle income groups have resorted to unauthorized house construction in the absence of developed land within their means. Recognising this and also as a matter of major policy, the Government of India has notified for acquisition about 35,000 acres of land all around the present built up area, which will be sufficient for the growth of Delhi according to plan for the next 10 years or so. Steps are also being taken to develop land for industry, commerce, residential uses and community facilities. All this land will remain under public ownership and developed plots or undeveloped land will be leased out to individuals and co-operative societies on an equitable basis, so that the benefit of planned growth accrues to the common man and the Government can also have a share of the future rise in the price of such land. The ownership of land by Government makes planning and the implementation of plans easier and is imperative if slum clearance, redevelopment and subsidised housing and provision of community facilities according to accepted standards have to be undertaken, as, indeed, they must be in Delhi, in a determined way.

These are the planning policies on which the Plan is based. These decisions have been arrived at by the planning authority as a result of the physical and socio-economic studies conducted in preparing the plan. In translating these broad policies into physical form, certain desirable planning principles have been adopted, which would be workable in the Delhi situation. Applying certain space standards for allocation to the various land uses, a land use-pattern was evolved, which is a synthesis of the plan-

ning principles, to arrive at a comprehensive plan best suited for present needs and the future growth of the capital.

(b) Planning Synthesis:

One of the major principles is that in order to secure balanced development and minimize frictions, decentralization of places of employment and their right relationship with residential areas is necessary.

With this objective, the city has been divided into eight planning divisions which are self-contained in the matter of employment, residential places, recreational areas, shopping and other requirements. These are functional units reflecting their own pattern of development and land use, having certain individual physical characteristics, and social and cultural values. While the Old City is at present a chaotic mix up of incompatible land uses, New Delhi is lacking in compactness and social cohesion. The plan has allocated land for industry, commerce, living, play and other major types of urban land use in the most appropriate location for each use and inter-related to each other so as to produce orderliness and smooth functioning.

A city is a living organism. To create conditions conducive to healthy social living, the hierarchy of city structure is built from the bottom upwards. The housing cluster is built round the nursery school and the tot-lot. The primary school, the high school, the Community centre and the District centre are the order of the functional tiers around which the community structure is built up. The Central Business District, major educational, recreational, cultural and civic centres, will provide the integrating and unifying common interests. Only in a healthy environment life for the common man can become varied, rich and satisfying in the future Metropolis.

While guiding development in new areas along desirable lines, those areas that already have a healthy, organic pattern must be

conserved by protecting them from encroachment of undesirable and conflicting land uses. There are certain other areas which must be rehabilitated by improved environmental hygiene and by reconstructing certain deteriorated pockets which will open up areas for providing open spaces and community facilities. Demolition of unusable buildings and making a new and improved layout may be resorted to in the redevelopment areas. The identification of the areas as "conservation", "rehabilitation" and "redevelopment", is to be done as a result of physical and socio-economic surveys. These steps are necessary to preserve and enlarge the total capacity of existing housing. Concentrating on new housing without taking these steps to improve the existing ones and protecting new developments, is like missing the wood for the trees.

Residential densities in the heart of the city have to be rationalized by eliminating disparities. In developing areas the layout pattern should be efficient to provide for adequate internal circulation and municipal services. Through-traffic should not be permitted to penetrate into residential areas. Adequate areas must be earmarked within close proximity for community facilities like schools, parks, playgrounds, health centres, shopping and other services. The residential areas should be protected from the invasion of non-residential uses and should be free from smoke, noise, odour and other nuisances.

The new sites to house Government offices are so located that they have adequate housing nearby, directly accessible from the major traffic arteries, and must be well served by the public transport system.

To secure further decentralization of employment, planned industrial districts are located in right relationship with residential areas. These industries are provided with enough water and power and well served with means of communication like major highways and railroads for efficient movement of goods and workers. Just as residential areas are protected from the

harmful effects of industries, they, in their turn, should be free from non-industrial and other conflicting land uses and should have enough space for future expansion. The industrial areas should have high design and desirable performance standards.

The existing Central Business Districts of Connaught Place and Chandni Chowk—Khari Baoli—Sadar Bazar must be made more functional with adequate off-street parking and loading and unloading facilities and by traffic regulations. To avoid a ribbon pattern of commercial development and to serve the large increasing population, several district shopping centres have been proposed so as to be within easy reach of each district. These have composite retail and commercial areas with service industries, flats factories and Government offices to provide employment centres. As already stated, there would be other shopping at lower levels to cater for the day to day needs of the people.

Self-contained divisions and decentralization of employment centres are necessary if traffic is not to increase to such an extent at the urban core that in the years to come, it would completely paralyse city life necessitating large investment on costly new transportation lines. Thus, the more rational and functional land use pattern proposed, together with a coordinated approach to the traffic problem will result in an improvement of the circulation system. Off-street parking and terminal facilities, grade separation at rail level crossings, improvements of intersections and enlargement of railway stations, widening some of the existing roads, express cycle tracks and a system of highways linking up Delhi more effectively with the metropolitan area and the region are necessary to handle the increasing traffic.

A system of linked open spaces and district parks has been worked out for the entire urban area of Delhi related to the proposed pattern of residential densities. These district parks are for the higher secondary school age group and for adults. The local parks are for primary school age children and should

be within walking distance. Places of historical interest, natural beauty spots, existing orchard and fruit gardens have to be developed and interconnected by green linkages and smaller local parks penetrating through residential and work areas. Certain natural features like the river front and the ridge will have to be developed, together with other regional parks to provide active recreation to the people of the whole area.

Similarly, other community facilities like schools, colleges, hospitals etc. should be provided and rationally distributed in the urban area according to the proposed pattern of residential densities.

It is essential to provide an inviolable green belt of agricultural land around the urbanizable land of 1981 to limit the physical growth and to prevent the overspilling of Delhi and its merging with the nearby cities to form one huge conurbation. This will also preserve land under intensive agriculture, unspoilt by undesirable or premature urban growth.

Harmonious growth and orderly functioning are the first steps in evolving an attractive city. But what will stamp it as a beautiful city is its pleasing architecture. This should not be confined to monumental civic and cultural centres but should pervade the design of all public and private buildings. Modern industrial buildings in attractively landscaped grounds, pleasing shopping centres, simple and beautifully designed schools and homes and well laid parks can go a long way to raise the city above the humdrum of brick and mortar put together. Well-designed and clean streets and street furniture, with minimum of poles, wires and signs will add to the general sense of attractiveness and spaciousness. If these things are kept in mind, then the appearance of Delhi, as the plan progresses, may well symbolize the life and aspiration of the people who will live there in the coming decades.

PROPOSED WORK CENTRES.

The principle of decentralization of work centres and its location in functional relationship with housing has been kept in mind in making the Land Use Plan. The allocation of land for the employment centres has been made on the basis of the percentage of the working force that would be in the various occupational groups in the projected population of 1981, and the standards for providing working space, parking etc. for the people engaged in industry, commerce, government offices etc.

3. GOVERNMENT OFFICES

It is estimated that there would be 2,62,500 persons working in government offices by 1981 in Urban Delhi, and about 50,000 in the Ring Towns of the Delhi Metropolitan Area. The estimated requirement for land for the latter has been indicated earlier in the chapter. In Urban Delhi at present the Central Secretariat Complex and Parliament Street is the main centre of Government Offices. Indraprastha Estate on Mathura Road and Old Secretariat in Civil Lines are subsidiary centres. Many other Government offices are located mostly in barracks on Shahjahan Road and other scattered areas. The total area under this use in 1981 will be 912 acres, including 60 acres in District Centres.

Unit Space Standards.

The standard for the development of Government offices* has been worked out on a floor area ratio of 150 i.e., for every 100 sq. ft. of land, 150 sq. ft. of floor space will be available. At present most new Government offices are 6 storeys high. The maximum coverage should be 20% including 5% of covered parking. Another 5% of additional coverage may be allowed

*The F.A.R. is 200 for the Central Secretariat Complex and maximum coverage 30% including 5% covered parking.

if the total space for covered parking is kept at 10% of the plot area. Out of the remaining 75% of land area, about 50% will be utilized for off-street parking, leaving the rest of the 50% to be devoted to land-scaping, lawns and the necessary set backs from the roads and the adjoining lot lines.

The standard of 50 sq. ft. of carpet area per person followed by the Central Public Works Department has been adopted. Carpet area includes conference room and canteen etc. In most Government office buildings, the carpet area is half of the total floor area since efficiency is only 50 per cent, the other 50 per cent being in corridors, bathrooms, stores etc. Hence the gross floor area per person is 100 sq. ft. This means that in one acre of land, with a floor area ratio of 150 and at 100 sq. ft. of floor space per person, about 650 persons can be accommodated. But as discussed in the chapter on Government in the work studies there is likelihood of higher standards of space utilization when work becomes more mechanized and productivity of government employees increases. This may be only partially offset by more efficient building design. Considering these factors, it is proposed that the employment density be assumed at 450 to 300 persons per acre depending on central or suburban location.

Parking Standards.

Parking standards are based on the present situation and may require modification when the pattern of the modes of travel changes. Now 8% of the total number of employees come by car, 2% by motor cycles and scooters, 60% by cycles and remaining 30% by public vehicles. Space for parking*, is based on this break up, which means that a building with a carpet area of 1,00,000 sq. ft. accommodating 2,000 persons at 50 sq. ft./

*Semi-basement will be allowed for parking, servicing and storage and 10% of the plot may be allotted for covered parking. Under Zoning Regulations F.A.R., coverage, parking, set-back etc. are fully given.

person will require 1.25 acres of parking space to hold 160 cars, 40 motor cycles and 1,560 bicycles. Thus the ratio of carpet area to parking area works out to 100 : 54.

Land Allocation.

The following sites which have Government offices will be developed to their optimum capacity.

Location	Acres
1. Central Secretariat Complex	201
2. Parliament Street	36
3. U.P.S.C. on Shahjahan Road	10
4. Indraprastha Estate	61
5. Old Secretariat Site	87
6. Delhi Administration Offices and New Courts.	36
7. Supreme Court and Circuit High Court	26
8. N.D.M.C. Offices	5
9. Railway Offices near New Delhi Railway Station	4
10. Corporation Offices in Chandni Chowk	8
TOTAL	474

The following new locations are proposed for Government offices and should be developed early to cope with the relocation and expansion of offices.

Location	Acres
1. Lodi Road (two sites)	141
2. West of Medical Enclave near Safdarjang Hospital	34
3. Ring Road District Centre (1100 acre project)	10
4. Kalkaji District Centre	10
5. North Shahdara	26

Location	Acres
6. South Shahdara	96
7. West Delhi District Centre (Ring Road/Najafgarh Road)	15
8. North-West Delhi District Centre (Ring Road)	25
9. New Civic Centre on Circular Road	15
10. State Government Offices in Chanakyapuri	8
11. Site near Shalimar Gardens	58
TOTAL	438

Proposals.

Central Secretariat Complex will ultimately have about 200 acres under Government Offices. After meeting the requirements of an office building for the Ministry of External Affairs, the remaining area in Block 32, south of South Block, should cater for the loading and unloading of passengers and parking of vehicles.

Very little area is now available for new Government offices on Parliament Street.

Indraprastha Estate too has been built up almost to its maximum capacity.

Old Secretariat site must be redeveloped to its optimum capacity. At present it has single storeyed office accommodation.

It is proposed to expand the Delhi Administration Offices in Civil Lines to a total of 10 acres. The New Courts at Tis Hazari are almost fully developed.

Land has been allocated for a Circuit bench of the High Court near the Supreme Court which is already functioning near Hardinge Bridge.

The office of the New Delhi Municipal Committee will continue at its present site on Parliament Street, where additional area has been earmarked to provide land for its expanding activities.

The headquarters of the Municipal Corporation will be housed in a 15 acre site forming the new Civic Centre. This is opposite the Ram Lila Grounds on Circular Road and Minto Road. The zonal offices of the Corporation will be in the District Centres.

A large number of Government offices located in barracks, chiefly on Shahjahan Road, have to be relocated in the new sites listed above, which will also have new offices. The areas where they stand at present have to be redeveloped for housing since they are basically good residential areas. These measures will bring more employees to live nearer the Central Secretariat and take other Government offices near the place of residence of the employees.

The Union Public Service Commission office will continue on Shahjahan Road and some more land has been earmarked for its expansion as shown in plan.

Transit office accommodation will be provided by Government in an area of about 50 acres within the 1,100 acres scheme south of Ring Road in order to replace temporary barrack office accommodation by permanent office buildings.

Foreign Missions are located in Chanakyapuri. Some State Governments have their offices and guest houses in this area.

4. COMMERCIAL AREAS

General Business and Commercial*.

Chandni Chowk—Khari Baoli—Sadar Bazar will continue to be the Central Business District of Delhi. General business and commercial activity will, in fact extend to the whole Complex which includes, Nai Sarak, Chawri Bazar, Kashmeri Gate, Faiz Bazar and Asaf Ali Road. Some of these areas will undergo gradual redevelopment in order to be able to retain their present supreme position in the commercial activity of the Delhi Metropolitan Area. This redevelopment, which will also involve at least temporary displacement of many families living in these areas, should form part of the overall redevelopment proposals of the Old City. The precise location of commercial areas in the Old City will be shown when detailed re-development plans are made.

Connaught Place is the other Central Business District of the Capital. Commercial development has taken place along Parliament Street in recent years. It has been found that the commercial area available is not sufficient to meet the growing need for central location of offices and retail trade. Hence, it is recommended to extend the commercial area upto Keeling Road and the proposed overbridge over the railway. No piecemeal commercial development should be allowed in this area but it should be part of an overall detailed plan, to ensure adequate traffic circulation, parking requirements, water, drainage, power and other facilities.

Commercial land is also reserved on Minto Road and Ranjit Singh Road, so as to form a link with the commercial area on Asaf Ali Road and the Old City. Due to the unfavourable loca-

tion of Kamla Market (it is also poorly planned), it is suggested that the commercial establishments be shifted to the proposed commercial area on Minto Road and the site should ultimately be converted into a recreational area. The Ram Lila Grounds will then stretch from Delhi Gate to Ajmere Gate and will be a major lung for the Old City.

A Sub-Central Business District is already functioning along Ajmal Khan Road and Ghaffar Market in Karol Bagh. It is proposed to extend this commercial area to have altogether 42 acres, as shown in the Plan. East of Ajmal Khan Road the existing retail trade will be retained.

Another Sub-Central Business District that needs developing is in Shahdara which in 1981 will have more than 7,00,000 population. Hence it is recommended that a 157 acre site south of Old Shahdara town be provided. This should have a separate wholesale area, transport terminals and other facilities which should be carefully worked out in a detailed plan.

District Centres.

In order to decentralize commercial activity, it is proposed to develop 15 District Centres in the outlying Planning Divisions. These will provide within easy travelling distance all the facilities for every 1.5 to 2.5 lakhs of population. They are composite centres and will have retail shopping, general business, commercial and professional offices, forwarding and booking and local Government offices, cinemas, restaurants and other places of entertainment. They will have work-cum-industrial centres (flatted) with small scale and light manufacturing, repair shops and service industries. Some of the District Centres will also have Central Government offices. All of these will have to be part of a phased development according to detailed plans which will also take care of all kinds of transport facilities.

*Floor area ratio, coverage, set-back etc. for different locations are indicated under the Zoning Regulations.

Hospitals, colleges and parks are also planned in proximity to these District Centres so that each district is self-contained for most facilities and amenities.

In addition to District Centres, 13 Sub-District Centres are shown. Some of them are existing at present like Gole Market, Khan Market etc., which are mostly retail in character and serve the day to day needs of the people. In outlying areas these are located near railway stations and road crossings which are natural sites for the growth of such activity.

The land allocation for Central and Sub-Central Business Districts, District and Sub-District Centres is given below:—

Central Business Districts

Location	Acres
In Old City	114
Asaf Ali Road, Minto Road and Ranjit Singh Road	4
Connaught Place and extension including Janpath	198
Parliament Street	16
Inderprastha Estate	12
TOTAL	381

Sub-Central Business Districts

Location	Acres
Karol Bagh	42
*Shahdara	157
TOTAL	199

*Includes wholesale and transport facilities.

District Centres

Location	†Com- mercial including service industries (acres)	Work- cum-In- dustrial centres (flatted) (acres)	Govt. offices (acres)	Total (acres)
1. Pusa Road	23	..	..	23
2. Khyber Pass	16	5	..	21
3. Shahdara (North Bund area)	16	..	..	16
4. Loni Road (North Shahdara)	32	..	..	32
††5. Dilshad (Shahdara)	14	..	..	14
6. South Shahdara	32	..	..	32
7. Kalkaji	57	15	10	82
8. Malviya Nagar	48	..	..	48
9. 1100 acres scheme (South of Ring Road)	38	10	10	58
10. West Delhi, Ring Road, Najafgarh Road	31	10	15	56
11. New Jail area (Najafgarh Road)	37	..	..	37
12. Nangloi area (South of Roh-tak Road)	32	..	..	32
13. Shakurbasti area	40	..	..	40
14. Wazirpur area (Ring Road)	50	..	25	75
15. Shalimar Garden area	25	..	..	25
TOTAL	491	40	60	591

†Area required for repair shops and service garages is included in the commercial area.

††The entire District Centre will, naturally, be considerably more than 14 acres, the rest being in U.P.

Sub-District Centres

Location	Acres
1. Gole Market	10
2. Khan Market	13
3. Vinay Nagar	16
4. Gokhle Market	10
5. Kashmere Gate (two sites)	14
6. Lajpat Rai Market (two sites)	18
7. Malka Ganj (two sites)	12
8. Azadpur/G.T. Road	6
9. Jhilmila Area	13
10. Tehar	10
11. Fruit, vegetable and general market near I.N.A. Colony	16
12. Jhandewalan	36
13. Tilak Nagar area	6
TOTAL	180
<i>Commercial near Railway Stations and other areas.</i>	
New Jail Road	10
Rohtak Road	10
Azadpur/Ring Road	8
New Delhi Station	6
Panchkuin Road	5
TOTAL	39
<i>Other Commercial areas.</i>	
Ashoka Hotel	40
Hotel (near Golf Course)	6
TOTAL	46

Wholesale Markets.

There is a need to relocate some of the wholesale markets and generally to separate wholesaling from retailing activity. The wholesale markets must be well planned to avoid the chaotic traffic conditions now prevailing in these markets.

1. Fruit and Vegetable Markets.

The market for wholesaling of fruits and vegetables may be reconstructed in due course at the present Subzimandi site and the retail trade removed to retail markets all over the city. Another site for wholesale business in fruits and vegetables should be located near the Daya Basti Railway Station in Sarai Rohilla. A third is recommended near Okhla railway station.

	Acres
Subzimandi	10
Sarai Rohilla	6
Okhla	19
TOTAL	35

2. Food Grain Market.

Offices of wholesale dealers in food grains may continue on the G.B. Road and in Naya Bazar. But some of these may also be located in the Teliwara area when it is properly re-developed. However, storage of food grains should take place only in areas earmarked for the purpose in the Plan. Retail traders in food grains may continue in Naya Bazar and G.B. Road.

3. Fodder Market.

This is retained near Daya Basti on Najafgarh Road.

4. Cloth Market.

Wholesaling of this commodity, must be rehoused in a modernized market in about a 10 acre site, west of Church Mission Road. Then, some of the trade now housed in Katras elsewhere in and around Chandni Chowk can also be accommodated here.

5. Bicycle Market.

Wholesaling in this commodity now located in the Jama Masjid area should be relocated in the Jhandewalan commercial area. The present site should be cleared of this trade and the road access between Chandni Chowk and Jama Masjid improved.

6. Dry Fruit Market.

This will continue in its present location off Church Mission Road and may be adequately enlarged.

7. Hosiery and General Market.

This will continue in Sadar Bazar—Old Bahadurgarh Road. It needs improvement and floor space has to be substantially increased for the expansion of the wholesale trade. Land allocation for wholesale markets is as follows:

Whole sale Markets*	Acres
Fruit and vegetable	35
Food grain	15
Cloth	10
Dry fruit	2
Hosiery and general	61
Fodder Market	6
TOTAL	129

*The bicycle wholesale market has not been shown separately as a wholesale commercial market in the Plan but forms part of the commercial area in Jhandewalan.

Timber, cement, iron and building material and oil wholesaling and storage.

The timber trade now located on either side of Desh Bandhu Gupta Road (Original Road) and in Teliwara should be removed as it constitutes a fire hazard and causes traffic bottlenecks. Timber yards and depots should be relocated in West Delhi adjacent to the railway line to Rewari, in about a 50 acre site. However, retail trade in bamboos, wooden scantlings for charpoys etc. required for daily use may be allowed in Teliwara and Desh Bandhu Gupta Road subject to limited stocks.

Further, in order to decentralize the trade dealing with iron and steel, suitable sites may be earmarked in each of the large industrial zones. Some of the junk and scrap metal dealers using a large amount of space should be relocated in one of the iron and steel trade areas in the industrial zone stated above. Only about 15 acres of land should be allotted in the Motia Khan area for reorganizing some of the small scrap metal and junk dealers now spread out in this area.

Similarly, four sites of about 50 acres each may be allotted for the building material trade and storage in the industrial zones. This is in addition to that reserved for the iron and steel trade.

Some area along Mathura Road has been earmarked for small warehouses.

Oil Storage depots.

These are located on Rohtak Road and will continue there. Additional land has been earmarked near Nangloi railway station. Sites have also been indicated near Palam railway station and in Shahdara.

Grain Storage.

Storage of grain will take place in the storage areas shown in the Plan.

Mineral Siding.

Sites for mineral sidings of the railways have been shown in the storage areas near the Tughlakabad Marshalling Yard, near Azadpur and on the Railway Line to Rewari. One large mineral siding has been proposed in U.P., contiguous to Shahdara to serve the whole of the urban area to the east of the Yamuna. The proposed sites are so located that they will conveniently serve all parts of the urban area.

Total Commercial Land Allocation.

Type	Acres
1. Central Business Districts	381
2. Sub Central Business Districts	199
3. District Centres	491
4. Sub-District Centres	180
5. Other commercial areas	85
6. Wholesale markets	129
*7. Storage & warehousing	681
8. Mineral sidings (railway)	313
TOTAL	2,459

Local Shopping:

Only District Centres and Sub-District Centres are shown in the Land Use Plan. Shopping facilities would also have to be provided at various tiers of the residential area. These should be shown in the local development plans. The standard of one shop for 150 persons has been adopted for the entire urban popu-

*This does not include sites required for iron and steel trade and building materials trade, which will take in all 400 acres in industrial zones. Also not included is the 15 acre site in Motia Khan reserved for a Junk market.

lation and then distributed at various levels as shown below. In doing so, an estimate has been made of the amount of money the community will spend in the purchase of commodities in the different classes of business centres. Roughly speaking, about 20% will be spent in the District Centres, 30% in Community Centres, 18 % in the Residential Planning Area Centres and about 15% in the "Convenience Shopping" in the Residential Units. The balance, it is estimated, will be spent in the Central and Sub-Central Business Districts. The latter will, naturally, also cater for areas outside Delhi.

Location	Population and sales	No. of shops
Central Business Districts Sub-Central Business Districts.	Entire urban popu- lation	Not estimated
1. District Centres	1.5 to 2.5 lakh popu- lation.	One centre of 200 to 350 shops each.
2. Community Centres	40,000 to 50,000 popu- lation.	80 to 100 shops each
3. Residential Planning Area Centres.	12,000 to 15,000 popu- lation.	15 to 20 shops each
4. Residential units (conveni- ence shopping)	3,500 to 5,000 popu- lation.	4 to 6 shops each.

Land Allocation for Commercial Use.

The quantity of land allocated for commercial centres at local level for various densities is given in the Sub-Division Regulations.

On an average 1% of the residential land is required for retail and commercial establishments at the local level, which means less than 0.5% of the total area since residential use is only 40% of the total. The major commercial areas, excluding ware-housing and mineral sidings, occupy 1.4% of the total area,

giving a total of 1.9% of the total area under all commercial activities.

5. INDUSTRY AND MANUFACTURING

The component of the working force that will be engaged in industry and manufacturing in 1981 is estimated at 4,40,300 in Urban Delhi and 1,14,700 in the Ring Towns of the Delhi Metropolitan Area. Land allocation for the latter has been made as stated in the first part of this chapter. Here proposals for industry in the urban area are made.*

There are only two existing planned industrial districts in Delhi. One is along the Najafgarh road developed by the erstwhile Delhi Improvement Trust. This has both extensive type of manufacturing units like D.C.M. Chemicals and intensive industries like the Hindustan Breakfast Food factory. The other is a small scale industrial estate near Okhla developed by the Government of India. The rest of the existing industries are scattered all over the city as described in the Chapter on Land Use Survey and Analysis in the work studies. Most of these industries require relocation.

A—Flatted Factories:

In order to provide work centres within walking distance of the existing concentration of population in the central areas, it is proposed to have "flatted factories". These are multi-storeyed buildings with high density employment ratio which can house many of the small industries that at present operate in commercial areas, as in Kamla Market.

Unit Space Standards:

The standard for the development of flatted factories has been worked out on the basis of 200 to 300 workers per acre. The

*Floor area ratio, coverage, set-back etc. for various types of Industries are given in detail under the Zoning Regulations.

floor space per worker has been taken on an average of 150 sq. ft. per employee. It is recommended that a floor area ratio of 150, building efficiency of 65%, and a maximum coverage of 40% of the plot area should be adopted. The rest of the area is available for parking, loading, unloading and for landscaping the site. The structures should not exceed six storeys. Basements will be permitted for parking, servicing and storage only.

Proposals.

Areas are suggested below for the location of flatted factories in the central area of Delhi, the number depending upon local factories in each area. No site should be less than one acre in area.

Areas	Acres
*Ajmere Gate	10
Thompson Road	16
Motia Khan	43
D.C.M. Site	27
Roshanara Road	13
Birla Mill Site on G.T. Road	40
*G.B. Road	10
Mori Gate	2
Connaught Place near Shankar Market	10
Sarai Rohilla	11
Near Gulabi Bagh	10
TOTAL	192

*These sites have not been shown in the Land Use Plan but they should be carefully selected and located while working out the detailed plans for these areas.

Thompson Road Site.

First priority should be given here for the small industries located at present in Kamla Market.

Motia Khan Site.

First priority will have to be given to the industries now located haphazardly in this area.

D.C.M. Site.

The Delhi Cloth Mills have to move out of this congested area to the extensive industrial districts according to the time schedules given for non-conforming uses. The present site should be developed for flatted factories in gradual stages to relocate the industries now located in Ahata Kidara and other areas.

Roshanara Road Area.

The area should be developed over a period of years. A beginning can be made with one or two sites.

Birla Mill Site.

Birla Mills will have to move out according to time schedule for non-conforming uses. This site too should be developed for flatted factories in stages.

Mori Gate Site:

This site should be developed to relocate the small industries now near Kashmere Gate and Mori Gate.

Site near Shankar Market.

Part of this is now residential. First priority may be given to the industries in Shankar Market and Connaught Place where they are at present causing nuisance.

Sarai Rohilla.

This may be developed to house the scattered industries in the residential areas.

Site near Gulabi Bagh:

First priority may be given to the industries in Rana Pratap Bagh and Shakti Nagar.

In all sites, first priority must also be given to those small industries which have to be relocated from the Old City where the problem of nuisance and congestion is most acute.

B—Industrial-cum-work Centres : (In District Centres and in outlying areas listed below).

While the flatted factories will be located in central areas, the work centres will be in outlying residential areas. These will be mostly in community centres and district centres. No nuisance industries will be allowed and the intensity of use will be less than in flatted factories. The idea is to provide for household manufacturing units which otherwise would spoil the residential character of the neighbourhood. The concept of flatted factories as well as of work centres is fully discussed in the chapter on "INDUSTRY & MANUFACTURING" in the Work Studies.

Unit Space Standards:

A standard of 200 workers per acre with about 200 sq. ft. of floor space per worker, maximum number of storeys limited to ten, with a floor area ratio of 120 and a maximum coverage of 33-1/3% should be attempted. Suitable areas must be reserved for parking, loading and unloading.

Proposals :

The following land allocation has been made for the work-cum-industrial centres.

Location	Acres
*Eleven hundred acre housing scheme District centre	10
*Kalkaji District Centre	15
*West Delhi District Centre (North of Rajouri Gardens)	10
*Khyber pass District Centre	5
**Ranjit Nagar Scheme	10
Ring Road—Mathura Road and Railway line triangle	16
**Kotla Mubarakpur	4
*Shahdara Central Business District	15
Shahdara between G.T. Road and Railway line	18
Okhla	45
**Jhilmila	5
North of Tehar Jail	15
TOTAL	168

The site comprising the triangle formed by Ring Road-Mathura Road and Railway line is at present occupied by sub-standard residences. This is a very good site for an industrial centre and should be developed at a convenient date.

C. Special Industries:

An area of 103 acres has been shown south of the Engineering College for such industries which will assemble precision instruments without causing any nuisance (like smoke, noise, foul odour, etc.). Research and training facilities should also be permitted.

*These sites are an integral part of the District Centres and have not been shown separately as industrial centres in the Land Use Plan.

**These sites are part of the residential neighbourhood and should be located in community centres while making zonal plans of the area.

The other sites are shown in the Land Use Plan.

D—Light Industries and Service Industries.

These are generally small scale, non-nuisance industries that can operate near built-up areas with rigid enforcement of factory regulations. Their location is such that if proper performance standards are not enforced, the dust and smoke emitting from the industries are likely to cause nuisance to the residential areas because of the prevailing wind direction. Land is allotted for these industries also in the north and west because of the need of providing work places and service industries in all the planning divisions even though the prevailing wind direction is unfavourable. This makes it necessary to have only such industries for which it is possible to enforce a high performance standard. An illustrative list of the industries is given in this report.

While areas have been earmarked for various kinds of industrial uses, it appears necessary that in some of these areas some public authority should develop land itself and construct industrial estates where work space can be rented out to the smaller units who may otherwise find it beyond their means to take out on lease even the minimum size plot in the various industrial areas and put up constructions of their own there. This is the only way in which those small industries which are unsuitable for operation in flatted factories can be suitably re-located in the process of elimination of non-conforming uses in the city and new small industries helped to establish themselves. It is obvious that if assistance to the needy ones has to be effective in this matter, these estates should be built up in comparatively central areas.

The existing Hindustan Housing Factory with the necessary extension together with any new line of manufacture of building materials and the existing Hume Pipe Factory may continue in the present industrial area without limitation on the size of the area and the number of workers. There should also be no objection to establishing any other Housing factory under similar conditions in the appropriate industrial zones in other

parts of Delhi. Other factories which may be established for the manufacture of building components required for development of land or for building construction or for seasoning of timber may also be allowed to be established in Delhi.

Unit Space Standards :

The optimum use of the space will be possible if an employment density of 30 to 50 per gross acre and a building efficiency of 80% is achieved and not more than 25 per cent of the area is kept under streets and 10% is kept in common facilities.

The plot area should not be less than 400 sq. yds. with a maximum of 2 acres. In special cases, larger plots upto 7 acres may be allowed. The floor area ratio and coverage is given in the Zoning Regulations.

Proposals:

The following allocation is made for light industry and service industry :

Location	Acres
Hindustan Housing Factory	54
Okhla Industrial area (two sites)	164
Kalkaji (two sites)	8
On Mathura Road (three sites)	169
*West of Pusa Institute	279
Delhi Milk Supply	20
Site near Anand Parbat	60
*Roshanara Road	11
Sarai Rohilla	32
*North-West of Wazirpur	27

*Service industries.

Location	Acres
Lawrence Road—Nangal Sub-Station area	279
Area south of Ring Road and G.T. Road in north-west	333
Shahdara between G.T. Road and Railway	113
*Near Moti Nagar	13
*Near Tilak Nagar	5
Najafgarh Road	16
TOTAL	1,583

The area to be developed near Anand Parbat, off New Rohtak Road, should be reserved for the industries to be re-located from the area to be cleared on New Rohtak Road. If this area is insufficient, some of the industries may be accommodated in the industrial areas in Sarai Rohilla and on Lawrence Road.

Industries which have to be re-located, either because they are non-conforming in their present sites or for some other reason, should be allowed to establish themselves in any area meant for "light" and "extensive" industries, provided they are not obnoxious. The latter will have to be located in areas specifically designated for the purpose.

E—Extensive Industries:

As a matter of general policy, large scale and heavy industries should not be encouraged in urban Delhi. This matter has been fully discussed in the Chapter on Industry and Manufacturing in the work studies. All the noxious industries which are now located in the residential areas should be re-located in areas meant for extensive industries.

It has already been recommended that the trades ancillary to the slaughter house now located in the Old City should be shifted to a new site on Rohtak Road beyond the oil store depot, adjacent to Multan Nagar. The alternatives of either

modernising the slaughter house at the present spot or relocating it in an industrial area would have to be studied further.

Unit Space Standards:

The number of workers proposed is 25 to 30 workers per gross acre. An attempt should be made to ensure that twenty-five per cent of the project area is in streets and common facilities, and a building efficiency of 80% is achieved. Development will be mostly in single storey and coverage and floor area ratio are given in the Zoning Regulations.

Industries using less than one acre can by no means be termed extensive. But certain noxious industries even if they are small scale, will have to go into areas for extensive industries because they should not be located near residential areas.

Proposals.

The following sites should be used for extensive industries:—

Location	Acres
1. South of Okhla near Marshalling Yard	908
2. Najafgarh Road area	369
3. Between Rly. line to Rewari and new Industrial road	331
4. Between Rohtak Road and Rly. line to Rohtak	194
5. North of Rly. line to Rohtak	469
6. Azadpur north of Ring Road	410
7. Shahdara between new Rly. line and new highway	919
TOTAL	3,600

All the major industrial areas have been located keeping in view rail and road facilities. They are mostly separated from residential areas and have scope for some expansion, if required, after the plan period.

F—Extractive and Allied Industries:

Mining and Pottery Area

The area near Mehpalpur is rich in pottery clay and a site of 357 acres has been earmarked for mining. It is also recommended that pottery factories utilizing local raw material may be allowed to be set up in the special area marked in the Land Use Plan. Sanction to layout etc. will have to be taken from the Delhi Municipal Corporation which in according the sanction may impose such conditions as might be considered necessary in the interest of the proper development of the area. This will be of the extensive type and is about 106 acres.

Lime and brick kilns

It is not desirable to have these within the areas to be urbanised in the future. Hence it is recommended that these be located half a mile away from the urbanisable limits of 1981. Also the removal of clay should be controlled. There should be no excavation at all for this purpose within half a mile of the green belt from the urbanisable limit but beyond it, excavations might be allowed upto a depth of 8 feet.

The shifting of lime and brick kilns outside the urbanisable limits of Delhi should be arranged according to a phased programme of utilising the existing kiln sites for progressive urbanisation.

Stone quarries and crushing

These should be beyond a distance of one mile from the urbanisable limits of 1981.

The removal of rock from selected places within the urbanisable area will be permitted under controlled conditions.

Stone quarrying in the Anand Parbat area may continue till May 1964, under controlled conditions as a non-conforming use. This is to give time for the authorities to provide cheap housing

for the labour (that would be displaced as a result of discontinuing their operation) in residential areas not very far removed from the quarrying sites in south and north Delhi. The crushers should be removed from the Anand Parbat area as they cause a great deal of nuisance.

Warehousing and Storage for industry.

The proposal regarding commercial warehousing is given fully under "Commercial". Suffice it to mention here that in every large industrial zone, approximately 50 acres of land should be reserved for the storage and fabrication of iron and steel and another 50 acres for the storage of building materials, in order to decentralize these activities.

Case of Industries outside the urbanizable limits.

It is recommended to spot zone two industries located outside the urbanizable limits of 1981. One is the Hindustan Wagon Factory near Nangloi of about 12.5 acres. The other on Mathura Road on the Delhi—Punjab border is the Hindustan Pipe Corporation of 2.3 acres. These may continue but should not be allowed to extend beyond existing area.

Total Land Allocation for Industries and Manufacturing.

Type	Acres
1. Flatted factories	192
2. Work-cum-industrial centres	169
3. Special industries	103
4. Light manufacturing & service industries	1,583
5. Extensive industries	3,600
6. Pottery industry	106
TOTAL	5,753

The land under existing industries of all kinds is less than 1,000 acres at present, whereas in the Plan, a total area of about 5,800 acres has been provided. There will, of course, be an additional area of about 2,800 acres under industries in U.P. to the east of Shahdara. In addition to all this, land for industries, altogether about 1,000 acres, has also been provided in Narela and other rural areas of Delhi Territory.

Thus about 5% of the total developed area of urban Delhi in 1981 is allocated for industrial use. This is in recognition of the place of industry in the balanced economy of Delhi. At present only about 1.6% of the total area is under industries and it is scattered all over the city, besides in one or two organized industrial districts. The quantity of industrial land available has been totally inadequate and the manner of their location highly objectionable. The new areas must be efficiently developed and the non-conforming units in densely populated areas speedily relocated in these planned industrial zones. In this way working conditions which are hopelessly acute will greatly improve.

6. RESIDENTIAL AREAS

One of the main objectives of the plan is to relate residential areas to the centres of employment in Government offices, industrial and commercial areas, so that the journey to work and back is kept to the minimum within the bounds of healthy living. With this in view, a rational pattern of residential densities* is proposed which will correct the present disparities and imbalances. Higher densities are proposed nearer to the work areas so as to have the maximum number of people living around them. Lower densities are suggested as the city extends towards its outer limits. Development during the last two decades has apparently been on the opposite principle resulting in traffic problems, inconvenience to the low income groups and congestion in presently central areas.

*Zoning Regulations and Sub-Division Regulations in chapter II will secure these densities in a desirable manner.

The old city of Shahjahanabad has at present a gross density of about 350 persons per acre with narrow streets and hardly any community facilities. This has led to unhealthy living conditions and functional obsolescence. While for various reasons, large scale clearance and reconstruction may not be possible in the immediate future, the widening of some of the more crucial roads has been proposed so as to facilitate easier flow of traffic. This will require demolition of buildings and the displaced families will have to be rehoused elsewhere but not too far away from the present location. Vacant plots as well as dilapidated structures will have to be acquired and the minimum of community facilities like schools, parks, health centres, etc., will have to be built for a gross residential density of 250 persons per acre. Persons displaced as a result of this also have to be relocated. Village-like trades and industries (viz. keeping milch cattle, pottery, tannery etc.) will also be moved out of the city to urban villages.

New Darya Ganj which has been developed at a density of 200 persons per acre needs conservation measures to preserve its good residential character. The other parts of the Old City require rehabilitation and redevelopment in order to preserve and improve the present housing at a gross residential density of 250 persons per acre. The same measures are in fact required for areas like Malkaganj, Aryapura, Sadar Bazar, Manak Pura, Motia Khan, Qadam Sharif and Pahar Ganj which will have a gross residential density of 200—250 persons per acre as shown in the Plan.

In order to achieve this density in the above mentioned areas, it becomes essential to earmark certain other areas, which are at present ripe for redevelopment, for the relocation of persons displaced from their present homes. One such area is the Mata Sundri area, which is between the congested Old City and the important commercial area of Connaught Place and its proposed future extension. It has at present a density of about

40 persons per acre. This area should be comprehensively redeveloped with the necessary services to serve a density of 200 persons per acre for two purposes, namely, for housing Government servants working in the neighbourhood and for housing persons displaced from neighbouring congested areas. Sarai Rohilla and Shadipur—Khampur are at present under sub-standard development. These two areas should also be redeveloped at 200 persons per acre for similar reasons.

If as a result of actual preparation of composite layout plans consisting of two-storeyed one or two-roomed tenements and double or multi-storeyed larger sized units for areas like Mata Sundari, Sarai Rohilla, etc. it is found that it is not at all possible to achieve the density figure of 200 persons per acre (with the permissible variation of 15 per cent), Government would make the necessary relaxation. The Government of India Press should ultimately be relocated from its present position.

Some of the other low density areas in the core of the city are Curzon Road, Parliament Street, and Gole Market Planning Area, where the present density ranges from 50 to 75 persons per acre. This is one of the most valuable residential areas located in proximity to the important and major employment centres of Central Secretariat, Parliament Street, Connaught Place and Indraprastha Estate. Population pressure, traffic and transportation considerations, land value etc. point to the fact that these areas should be put to more intensive use. The Gole Market Area is ripe for redevelopment. Hence it is strongly recommended that these areas be comprehensively redeveloped to an optimum desirable residential density of 150 persons per acre.

South of the Central Vista, in the Akbar Road area, the density is at present 20 to 25 persons per acre with large bungalow plots. This is a most pleasant area but uneconomical to maintain. It is recommended that without in any way spoiling the most desirable features of this area, the density should be

raised to 75 persons per acre. This can be done by judicious planning of some high-rise apartment houses and the provision of sites for schools, health centres etc.

In the area bounded by Pandara Road and Shahjahan Road the density proposed is also 75 persons per acre since this is the present pattern of development on Pandara Road. It is recommended that the temporary hutments along Shahjahan Road be demolished, thus making available additional area for residential development near the work centre of the Central Secretariat. Care should be taken to meet the entire requirements of community facilities for the neighbourhood. (All offices in this area except those of the Union Public Service Commission are to be shifted as detailed under the Section on "Government"). In the Ratendone Road, Lodi Estate, Golf Links, Kaka Nagar and Sundar Nagar areas, the existing densities of 50 to 60 persons per acre are retained and so indicated in the Plan.

Between the Inner Ring Road and the Ring Road the existing densities are about 75 to 100 persons per acre and should be so maintained. South of the Ring Road also the same pattern of 75 to 100 persons is recommended; however, north of Badarpur Road which is the southern boundary of the urban limits of 1981, a lower density of 60 persons per acre is suggested. Near Kalkaji, however, higher densities of 100 to 150 persons per acre have been proposed since it is nearest to the Okhla Industrial Area. It is proposed to keep the 25 persons per acre density west of Mathura Road in Friend's Colony, whereas for the areas east of Mathura Road a density of 50 persons per acre is proposed. No residential development should take place south of Okhla Sewage Farm since it is undesirable to have a residential area there.

Another low density residential area is the Teen Murti Area near the Prime Minister's house, where the existing pattern of 25 persons per acre should be maintained. Chanakyapuri, Kitchner Road, Moti Bagh I (north of Ring Road) are already

being developed at 50 persons per acre though Moti Bagh II (South of Ring Road) has been developed at 100 persons per acre. The Government is developing the 1,100 Acres Scheme south of Ring Road on densities of 75 to 100 persons per acre. The area south of it, which is at the southern end of the urban limit of 1981, should be developed at a lower density—50 to 75 persons per acre.

In Civil Lines, it is essential to preserve the pleasant character of Rajpur Road and Alipur Road areas. Hence by judicious planning, the densities may be raised from 25 persons to 50-75 persons per acre as shown in the Plan, with adequate areas earmarked for community facilities. There should be an overall plan for this area and piecemeal sub-division should not be allowed. The recently developed areas of Shakti Nagar, Roop Nagar, Kamla Nagar, Jawahar Nagar etc. have an average density of 150 persons per acre and the same may be maintained. Similarly, for Rana Pratap Bagh, Vijay Nagar and Model Town the existing pattern of 100 persons per acre is to be maintained and extended to the nearby new areas. Kingsway Camp area has been proposed to be redeveloped at a density of 125 persons per acre. All other areas north of Mall Road and east of G.T. Road are proposed to be developed at a graded density of 75 to 50 persons per acre as the National Highway Bypass is approached. The northern portion of this is subject to water-logging and should be developed only after adequate drainage arrangements have been carried out.

In the north-west, at present almost the entire area is rural in character with some good orchards. It is proposed to have intensive development for areas that are nearest to the city as they are not more than 4 miles from the densely populated Old City and should help in relieving some of the congestion there. The densities proposed are 150 persons near Andha Mughal, and 125 to 100 persons on both sides of the Ring Road. More open development with densities ranging from 75 to 50 persons

is proposed in the outer periphery. However, areas nearer the railway lines to Rohtak and Ambala will have higher densities, so that the maximum number of people will travel minimum distances to get to work. Many of the large existing orchards have been retained as District Parks and may be preserved and maintained as orchards by public agencies or leased to cooperatives and individuals. Also in making detailed layout plans care should be taken to include as much as possible of the existing orchards for local parks. Since it takes many years to landscape a park with trees, it is essential to make the best use of these trees.

In the west, Karol Bagh has reached the limits of its development and has 200 persons per acre. Dev Nagar and Rajinder Nagar have been developed at 150 persons per acre. In East and West Patel Nagar and New Rajinder Nagar the existing densities of 100 to 150 persons per acre are to be maintained.

The density is between 100 to 150 persons per acre west of Delhi—Jaipur railway line and near the industrial areas. It is proposed to have lower densities of 100 to 75 persons per acre along the Najafgarh Road as the development extends further from the major employment centre. This density is 60 on the periphery of the urban limits. Again, along Rohtak Road proportionately higher densities of 100 to 75 persons per acre are proposed since it is closer to the proposed Rohtak Road Industrial Area, but further out this density is gradually reduced to 50 persons per acre.

Across the Yamuna, Shahdara is proposed to be developed as a complete new city of over 7,00,000 population. At present Shahdara has very bad drainage and though only 2 or 3 miles from both the crowded Old City and New Delhi, has only the Railway-cum-Road bridge as a connecting link. This is a terrific bottleneck. Taking advantage of the Wazirabad barrage in the north over which a road is being constructed, and the

proposed highway bridge opposite Humayun's Tomb and the proposed Railway bridge opposite Purana Qila, it is proposed to have a more or less self contained development in Shahdara with industries, commercial and Government office areas and the component of residential areas. The marginal bunds both in the north and south along the Yamuna should be considerably strengthened so that there is no danger of floods from the river. Also it cannot be over emphasized that an overall drainage system should be worked out before any large scale development is attempted, to avoid the danger of water-logging that any piecemeal development will entail. Adequate drainage arrangements must be made while building the proposed railway line and the national highways in Shahdara.

High densities of 125 to 150 persons are proposed in south Shahdara in proximity to the proposed industrial and commercial areas. In other areas 100 to 75 densities are proposed. North of G.T. Road, 100 persons per acre is recommended for areas adjoining the road. As the development reaches the Delhi—U.P. border and the northern highway bypass, the densities proposed are 75 to 60 persons per acre.

All the densities are indicated in the Land Use Plan. All new developments will take place according to the densities shown. But as a general rule where developments have taken place completely or partially, the existing pattern of densities is to be maintained except where redevelopment and increase in densities have been specifically recommended above.

Planning Divisions.

In the Chapter "Land Use Survey and Analysis" of the work studies it has been fully discussed why for Planning purposes Urban Delhi upto its proposed 1981 limits, has been divided into eight Planning Divisions. These are envisaged, more or less, as self-contained areas as regards work places, residential accommodation, recreation, shopping etc. The population and

residential areas for each Division by 1981 are proposed to be as follows:

Planning Divisions	Proposed 1981 population	Residential area (acres)
A. Old City	3,22,600	1,370
B. City Extension	3,98,200	2,590
C. Civil Lines	3,55,200	3,480
D. New Delhi	6,34,100	6,930
E. Shahdara	7,44,100	7,890
F. South Delhi	7,81,100	9,400
G. West Delhi*	7,44,300	8,240
H. West Yamuna Canal or North West	6,06,200	7,460
TOTAL**	45,85,800	47,360

7. DEVELOPMENT ZONES.

For purposes of collection and analysis of socio-economic and physical data for the built up area, the urban area was further sub-divided into Planning Areas and Planning Units. These were tested to find out the size of a workable unit. As a result of this study, it was found that whereas in the Old City due to the intensive development and the enormous nature of the planning problems, such as conservation, rehabilitation and redevelopment, it is necessary to take similar workable areas for planning purposes; in other areas like New Delhi, South Delhi etc. large areas could be taken. In virgin land still larger areas

*The figures against West Delhi do not include the Cantonment Area; it is estimated that the population of the Cantonment Area would be around 1,00,000 in 1981.

**It is estimated that a population of about 50,000 will be living in commercial areas also.

have to be taken. Many considerations have gone into the delimitation of the boundaries of these units. The result has been the drawing up of 136 Development Zones for the whole of urban Delhi as shown in the map Development Zones. The manner of their development for newly developing areas is laid down in Chapter II under "Sub-Division Regulations" and all new developments shall take place according to Zonal Development Plans.

Zonal Development Plans for the Old City.

While the problem of preparation of Zonal Development Plans for new areas is comparatively easy, much study and data collection will be required in the case of plans for the old and built up areas of the city. Development plans for these areas should form part of a comprehensive urban renewal and redevelopment programme as outlined in a separate chapter in the work studies. This will take some time to prepare. In the meantime, for the Old City it has been decided that community facilities may be provided on an ad hoc basis (which will be incorporated in the Development Plans to be prepared) for a gross residential density of 250 persons per acre. Since most of these areas presently have higher gross densities, it is recommended that vacant plots and plots on which dangerous structures are being demolished each year, must be acquired by the Municipal Corporation. These together with such other plots that may be acquired, must be utilised for locating community facilities. These will have to be on a lower standard than what has been indicated under the Sub-Division Regulations.

Realising that in the immediate future, there cannot be large scale demolition, due to the financial burden involved on public bodies, the low rent paying capacity of the slum dwellers and the need for keeping them nearer the work places, it is recommended that a major effort be made in the immediate future only to improve the slums rather than demolition and redevelopment.

One of the major recommendations is to improve the circulation in the Old City by a system of streets that will involve minimum widening but will at the same time ensure smooth flow of traffic. Through traffic is kept to the periphery of the Old City and the traffic generated inside the city is channelled to flow in and out. Some of the existing alleys will be used for cycle paths and pedestrian ways whereas vehicular traffic will skirt the residential pockets. There will be enough parking areas so that these pockets are accessible to vehicles but these will not go through them. These are shown in the Traffic Circulation Plan for the Old City and Table 4 indicates the proposed right of way of the roads.

Another measure intended to relieve the inhuman conditions in the slum areas is the recommendation that basic amenities like water, drainage and electricity etc. may be immediately made available even though certain areas are earmarked for redevelopment.

Under the zoning regulations it has been recommended that uses which do not conform to the land use shown in the Land Use Plan may be shifted to their respective use zones according to a time schedule. Among the first to be shifted are the noxious and nuisance industries and fire-hazard trades which abound in the Old City at present, causing congestion and injurious health conditions. It is also recommended that village-like trades viz. keeping of milch cattle, be removed to urban villages. This will not only strengthen the rural economy but also cheap milk collected through milk chilling centres will become available to the urban areas. Since the success of the removal of the dairies from the city depends on the speed with which the Delhi Milk Supply Scheme is able to meet the major demand of the city for milk, it is strongly recommended that the capacity of the milk scheme be increased for the purpose and a determined effort made to relocate the dairies as a matter of major health measures.

Zonal Development Plans for New Areas.

The Municipal Corporation has drawn up a scheme for the relocation of the busti squatters in suitable areas not too far away from major work centres. It is recommended that while the structures and facilities may be below standard in order to keep down the cost and rents, the space standards for schools, parks, streets etc. should be as for any other area given in the Sub-Division Regulations. Moreover, these should be integrated with a larger neighbourhood where there is a mixture of different social and income groups, as well as housing types. In addition, it is also recommended that reasonable areas should be earmarked in several zones for the low income group who migrate to Delhi on account of the relentless "push" from the rural areas. As in the relocation of the busti squatters, sub-standard development and construction may be permitted but the space standards for the facilities should be those given for the density on which the layout is planned. It is recommended that building by-laws should be considerably relaxed in such cases not only to permit sub-standard development but also to enable the construction of low cost cheap houses or huts. This will keep down the cost for the present and will enable public authorities to bring this development upto standard in the not too distant future. Otherwise these will develop into slums.

It is also recommended that any village or abadi which is overtaken by urban development should not be left as such, as otherwise, the city will be pock marked with the type of slums such as Kotla Mubarakpur but should be redeveloped and integrated into the neighbourhood. New development will follow the Zonal Development Plans and the sanctioning authority should ensure that all developments take place with proper layout and adequate community facilities and in accordance with the desirable and optimum densities prescribed in the Master Plan. It is equally necessary to set up a firm administrative machinery for effective enforcement of planning standards and

community wide inspection of services and prevention of squatting and encroachment. It is also necessary to adopt a comprehensive system of building, sanitary and other codes which prescribe adequate minimum standards of health, sanitation and safety. These can be enforced only if the maximum amount of citizen participation is secured as fully discussed in the chapter on "Urban Renewal and Redevelopment" in the work studies.

8. TRAFFIC AND TRANSPORTATION

The rational and functional land use pattern envisaged in this Plan, which has taken into consideration the physical inter-relationship of the various land uses on the principle of relative self-containment of each Planning Division, will obviate the necessity of costly new transportation lines. But with increasing traffic even at the present time, certain basic requirements for smooth and efficient flow of traffic will have to be implemented and long term measures planned to keep traffic within the bounds of the proposed transportation system. These are fully discussed in the Chapter on "Traffic and Transportation" in the work studies. The major recommendations are given here and are shown in detail in the Land Use Plan.

Railways:

In order to bypass Delhi Main Railway Station for through traffic, the Railways are planning a goods avoiding line which must be made to serve as a Ring Railway for local suburban traffic movement. Hence it will be necessary to have new railway stations at suitable places; and improve and expand the existing railway stations with more platform and passenger facilities, together with the provision for parking vehicles, for which land provision is made.

In order to reduce intracity traffic load, it is also essential to effect substantial improvements to some of the smaller railway stations both for passenger and goods. Improvements to Sahibabad goods station facilities are in progress. Okhla, Nizamuddin,

Subzimandi, Azadpur, Badli, Shahdara, Shakurbasti and Nangloi Railway Stations require substantial improvement and extension.

The Marshalling Yard at the New Delhi Railway Station will be shifted to Tughlakabad on the Agra Line. Also, mineral and goods sidings are proposed near the Marshalling Yard at Tughlakabad, on the Ambala line near Azadpur, and in U.P. contiguous to Shahdara. There is a railway siding already in Shakurbasti for oil etc. Suitable goods sidings should be made available to all the large industrial zones.

The meter gauge railway should be extended upto New Delhi Station which will be connected to the main Lucknow line at Sahibabad by a new bridge over the Yamuna opposite Purana Qila. Because of these and the moving out of the Marshalling Yard, a redesigning of the New Delhi Railway Station will be necessary. Some land reservation is made outside the station for parking etc.

The redesigning and modernization of the Delhi Main Railway Station is in progress. The planning should not only take into consideration the growing railway traffic but also the requirements of parking facilities which are at present wholly inadequate. The railway authorities should acquire more land for this purpose in accordance with the proposals in the Plan.

The jurisdiction of the Northern Railway should be extended upto Mathura junction so that the development of railways in the National Capital Region will get a Co-ordinated approach and will facilitate the growth of the Ring Town of Faridabad which at present is in the Central Railway Line.

There is also the task of Co-ordinating passenger transport operation within this Region, with bus and truck transport systems. Joint team work is necessary to eliminate uneconomic duplication and improvement of services. It is recommended that the frequency of railway services in the Region should be increased.

Serious consideration should be given to the future electrification of the Delhi Terminal Area as far as Ghaziabad, Meerut, Faridabad and Sonapat. Until this becomes feasible, quick turning and relatively smokeless diesel rail-cars must be brought into operation.

Roads:

In order to avoid congestion in the urban core, certain bypass routes are recommended. The Ring Road which has been constructed in most parts must be quickly completed. The right-of-way should be 210 feet.

The Inner Ring Road requires links at some places and the widening of the right-of-way upto 150 feet. Grade separation should be provided where it crosses main arterial roads. Both the Inner Ring Road and the Main Ring Road should have access at not less than approximately $\frac{1}{4}$ to $\frac{1}{2}$ mile intervals.

The National Highway Bypass as shown in the Plan from Badarpur village in the south along the Yamuna River upto Wazirabad pumping station (except the portion skirting Metcalfe House) and then to meet the Grand Trunk Road has to be completed. The alignment of the National Highway Bypass east of Metcalfe House will have to be re-studied. The bypass has already been constructed from the Ring Road in the south upto Metcalfe House. The right-of-way should be 300 feet.

Two more major road links between Old and New Delhi are recommended. These will be overpasses over the railway line. One connects Circular Road to Parliament Street, following the alignment of existing Ranjit Singh Road, School Lane and Keeling Road; the other connects Mathura Road to College Road and Ferozeshah Road. In case an over-bridge near the College Road is not possible for engineering reasons, the possibility of constructing an under-pass should be examined.

It is recommended that Rohtak Road should be diverted along the south side of the Western Yamuna Canal (north of the existing alignment) to join the proposed Inner Ring Road.

With large scale development proposed for Shahdara, four bridge links are proposed in addition to the improvement that should be made to the existing road-cum-railway bridge, north of Red Fort. In the north, the Wazirabad Barrage will have a road, with a cantilever adequate in width for pedestrian movement and cycle tracks. This road proposed over the barrage will connect the National Bypass near Wazirabad pumping station to Grand Trunk Road near Sahibabad. This will be an arterial road. Another road across the Yamuna near Humayun's Tomb in the south will connect Delhi to Ghaziabad across the River Hindon. Both these roads will have a right-of-way of 300 ft. In between these two major links, are proposed two road bridges across the Yamuna (subject to engineering feasibility) as shown in the Plan. The right-of-way of the Badarpur-Mehrauli Road will be 250 feet and that of the Boulevard Road connecting Subzimandi with the National Highway will be 200 feet.

All the five National Highways which converge on Delhi will have a 300 feet right-of-way outside the urban limits and will be designed according to highway standards. The arterial and sub-arterial roads shown in the Plan should have a right-of-way of 200 feet and 150 feet respectively and major roads of 100 feet.

Many of the existing important roads require widening of the right-of-way as shown in the Plan. Notable among them are Lothian Road, Elgin Road, Mathura Road, Patel Road, Shankar Road, Park Street, Talkatora Road, Queen Victoria Road, Chelmsford Road, Qutab Road, Panchkuin Road, Rohtak Road and Church Mission Road in Old Delhi. A system of "minimum" streets for the Old City has already been recommended earlier in this Chapter and a detailed list and a map has been provided.

Roads with less than 100 ft. right-of-way will be shown in Zonal Development Plans and other detailed plans.

Arterial Cycle Tracks:

In addition to improvements of the existing road-marginal cycle tracks, the following arterial cycle tracks entirely separate from the carriageway, as shown in the Plan, are essential to avoid traffic bottlenecks.

Two cycle tracks going south from the Central Secretariat with 25 feet right-of-way, one to Vinay Nagar and another through Lodi Colony to Sewa Nagar are recommended.

The route in the westerly direction runs parallel to Patel Road, Shankar Road, thence through an underpass across the Upper Ridge Road to Talkatora Road and the Secretariat. Another runs north along Queen Mary's Avenue, Market Road, Ramakrishna Ashram Marg, Chitragupta Road and Mundhewalan Road.

A cantilever pedestrian-cum-cycle track on the existing Yamuna Bridge has been proposed, which will link with the proposed cycle track to Chandni Chowk and the other to the Secretariat and to Connaught Place.

Parking for cycles at Government and other offices is assured by the floor area ratio and maximum coverage prescribed in the Zoning Regulations.

Road Grade Separation with Railways:

The hold-up of road traffic at railway level crossings calls for under or overpasses at Rohtak Road, Patel Road, Link Road between New and Old Rohtak Roads and the approach Road to the Okhla Industrial Estate. The proposal for two new link roads between Minto and Hardinge bridges as overpasses has already been stated. So, too, Queen Victoria Road joining the

National Bypass requires a grade separation with the railway line. When Safdarjang airport is shifted, Mehrauli Road must have grade separation with the railway line.

Road Intersection Improvements:

At every major intersection at grade, channelisation of traffic by the use of pavement markings, raised islands or other suitable means are necessary. The ones at Minto Road and Connaught Place, Queen's Road and Kauriya Pul Road, Ajmere Gate, and Mathura Road—Wellesley Road crossing are the most pressing. Also many of the roundabouts with insufficient turning radius should be gradually replaced by intersections with traffic lights.

Road Transport Terminals:

Interstate passenger bus terminal and parking.

Three suitable sites of about 10 acres each, depending upon requirements, for loading and discharge of passengers, luggage and parcels, idle parking of buses when not engaged in active operations, are recommended at the following locations.

1. South of Idgah near Jhandewalan.
2. North of Central Road Research Institute on Mathura Road.
3. Near Shahdara Railway Station between the railway line and G.T. Road.

One more terminal of 10 acres is proposed outside Kashmere Gate. This will have in addition a separate site of 21 acres for idle parking east of the sanitary drain between the National Bypass and the Western Bund of the Yamuna River. This idle parking site will also provide for truck parking and servicing of buses and trucks.

Goods parcel terminal and parking.

A site of suitable dimension, as a well planned terminal in the Motia Khan area, south of Idgah Road, with offices and godowns of the booking and forwarding agencies is recommended. Another truck terminal site of 50 acres is proposed in the Shahdara area, west of the proposed airport road and north of the proposed National Highway. This will also have idle parking for trucks between trips.

Three suitable sites of adequate size of about 10 acres each are proposed for truck idle parking, servicing and all the incidental facilities that may be required with it. These sites are as follows:

1. Near Azadpur Police Station on Grand Trunk Road to Ambala.
2. Between Ring Road and Lawrence Road and North of Rohtak Road in the vicinity of Nangal Power Station.
3. Near Okhla Industrial Estate on Mathura Road.

D.T.U. Bus Terminal.

It is proposed to develop two terminals, one in the Connaught Place extension and the other near the Minto Bridge area as loading points for passengers and also to serve as places for accumulating, extra rush hour bus requirements. These terminals in order to be self-supporting should be developed for multi-purpose use including shopping and office space etc.

To handle peak hour loads at Central Secretariat, Old Delhi Main Railway Station, Red Fort and Kashmere Gate, similar off-street loading stations and bus accumulation areas are recommended. Also, in all the proposed District Centres and in the Central Business District of Shahdara, bus terminals may

be developed as an integral part of these schemes. High density residential areas such as Vinay Nagar in the south and Karol Bagh in the west should be provided with off-street loading points for handling morning peak hour traffic. The bus service should be speeded up by establishing fewer, but better curb spaces in heavy loading areas and by strict enforcement measures to keep these stations clear of interference. A number of bus depots distributed over the urban area are shown in the Plan.

Future Mass Transit.

The proposal to have an electrified sub-way should be explored for the future when a substantial increase in traffic will justify an expenditure of Rs. 4 crore per mile; but it is obviously not a short range project. For the present, the Ring Railway recommended, with the local bus service, should furnish the mass transit.

Department of Traffic.

The traffic problems of urban Delhi require continuous attention to a large number of miscellaneous items like intersection, traffic control, law enforcement, traffic education, pedestrian control, traffic signs and signals, street lighting and other matters. There are also capital works like planning of terminals, budgeting and financing of capital improvements. To deal with all these matters in a comprehensive manner it is recommended that a Traffic Department be set up under a trained traffic engineer and the enforcement of traffic may continue to be the responsibility of the police, with proper liaison between the two.

Staggering of Work Hours.

An important measure recommended for improving peak hour traffic conditions, is the staggering of work hours so as to distribute peak hour traffic load over a longer period.

Regional Highway Proposals:

It is recommended that in order to relieve the pressure on the Yamuna Bridge and the congested Delhi area, peripheral all weather communications should be provided by converting the existing boat bridges into concrete structures. A bridge at Baghpat will give a connection to Sonapat—Mehrauli, while the bridge at Jewar will link Palwal to Khurja and Aligarh.

Similarly, in order to encourage peripheral movement of traffic between the towns lying within the Delhi Metropolitan Area, a perimeter road connecting Ghaziabad, Faridabad, Gurgaon, Bahadurgarh and Narela should be developed. The proposed bridge opposite Humayun's Tomb will connect Ghaziabad with Faridabad and the barrage-cum-road at Wazirabad will connect Ghaziabad to the north.

The Ring Towns of the Delhi Metropolitan Area lie on the National Highways. With their proposed rapid growth, bypass roads are essential. For this purpose the right-of-way should be earmarked for the bypass immediately, instead of resorting to costly land acquisition later when urban development has taken place. Ribbon development along National Highways must be prevented by Zoning Regulations.

Airport.

It is recommended that the International Civil Airport be continued at Palam with suitable runways and terminal facilities for increased jet traffic. For this purpose the existing airport acreage has been doubled. If, however, for security reasons, the Air Force Station cannot be removed from Palam, the International Civil Airport can be located at Pasaunda in U.P. It is a good site and within easy reach of Delhi. The site has, therefore, been marked on the Plan. What is of the utmost importance is an early decision on this matter as it may not be possible to keep the Pasaunda site vacant indefinitely. Palam is

undoubtedly best suited for a civil airport and should be given up only for over-riding defence reasons.

The airport at Safdarjang is in the midst of heavily built-up residential areas. It cannot, therefore, be extended to meet the requirements of modern aircraft in regard to line of flight and length of runway. The airport continues to be a source of hazard and nuisance to the areas surrounding it. It is, therefore, recommended that it should ultimately be removed—possibly to join the ultimate International Civil Airport for Delhi. The Flying Club which is functioning at the same site these days should also be shifted at that time. The present site, when vacated, should be used for recreational purposes and the Plan has, therefore, shown it for ultimate recreational use.

9. COMMUNITY FACILITIES AND SERVICES:

A—Recreation.

A system of District Parks has been worked out for the entire urban area of Delhi related to the proposed pattern of residential densities. The proposals will enable every one of all age groups to enjoy active and passive recreation. In selecting the locations, due cognizance was given to the existing physical features, special spots of beauty or interest, places of historical or architectural value, existing orchards etc.

(i) Local parks and playgrounds.

These are to be shown in zonal development plans and detailed plans and must cater for all age groups. These range from 2.00 to 0.81 acres per thousand population for residential densities varying from 25 to 200 persons per acre as detailed under Sub-Division Regulations. However, for the Old City where a density of 200 to 250 has been proposed, the standard proposed is 0.30 acres per thousand population for the simple reason that space is just not available. The area proposed will

provide tot-lots, playground space for primary and secondary school age children and local neighbourhood parks within walking distance of the neighbourhood which they cater for.

(ii) District Parks:

These are proposed on an overall basis of about 3 acres per thousand population and distributed all over the urban area. Each District Centre has a district park nearby. Most of the parks are inter-connected by a system of green ways which penetrate through and between residential and work areas to provide an efficient system of direct pedestrian and cycle tracks for circulation between different residential neighbourhoods safe from vehicular traffic. In the first stage financial limitations will limit the development of organised parks to only a small portion of the area allocated in the Plan and the rest would remain in a natural state, so that a disproportionate amount of the municipal budget will not be spent for such amenities. But within 20 to 25 years from now, all the park area should be developed to serve the increased demand. The total area earmarked for District Parks is about 17,940 acres including semi-public recreational areas of about 890 acres.

The Old City Division :

The existing parks are the Parade Grounds in front of Red Fort and Jama Masjid, Rajghat and Queen's Gardens. The proposed parks are: the river front south of Yamuna Bridge, Qadam Sharif around the graveyard area and the Idgah. It is proposed that all areas receive major improvements in the Third Five Year Plan. It is in this area of the Old City that the greatest population is concentrated and the greatest need for parks exists.

Karol Bagh Division :

The existing parks are Ajmal Khan Park and in Anand Parbat. The former is fully developed and the latter partially

and should be developed as a district park. The ridge area east of Pusa Road (on which sites for a college and schools have also been earmarked) should be immediately developed as a park, since the entire congested area is without adequate park facilities. The other park proposed is near Naraina Village.

Civil Lines Division :

The University ridge is in a semi-developed stage, as also the area around the Coronation Pillar. It is proposed that parts of these areas be taken up for immediate development. The other existing parks are Roshanara Gardens and the one outside Kashmere Gate. It is proposed to develop parks at the junction of Mall Road and G.T. Road, Magazine Road in Timarpur, north of Kingsway Camp and north of Model Town, and north of Rana Pratap Bagh.

New Delhi Division :

The existing parks and open spaces are the Central Vista, the Hexagon near India Gate, Lodi Gardens, Ramlila Grounds, Talkatora Grounds, Vijay Chowk, Feroze Shah Kotla Grounds, area around Safdarjang Tomb, Connaught Place, Gurdwara Park and Lady Hardinge Ground. Also the Zoological gardens and the Buddha Memorial Park have been partially developed. Area in the Diplomatic Enclave, area west of Lodi Colony, the Safdarjang Airport area and the River Front (for Olympic Grounds) are some of the proposed parks. Beyond expanding the Zoological gardens and the Buddha Memorial Park and the Olympic grounds, it may not be desirable to develop other areas until the Old City, West Delhi, South Delhi and Shahdara have adequate recreational areas.

Shahdara Division:

This has hardly any park. Here the largest park proposed is along the river Yamuna. Parks are proposed also near the proposed Central Business District and District Centres.

South-Delhi Division:

Hauz Khas which is partially developed, Siri and area near the industrial zone east and north of Kalkaji, Tughlakabad and the rocky out-crop to its north-west are the proposed parks. Only small portions of these may be developed until the residential areas are more fully developed.

North-West Division:

This division is at present mostly under agricultural use. There are, besides, a number of orchards, some of them quite old and not in a good state of preservation. Park areas have been shown in the Plan at several places in this division, one particularly large one has been suggested north of Sarai Rohilla across the canal. It has also been proposed that some of the orchards should be retained and properly developed and maintained. They will also provide quite a considerable amount of greenery and open space to the area.

West Delhi Division:

The proposed parks are located mainly along the Najafgarh Nala and near District Centres.

(iii) Picnic Spots:

The existing picnic spots in Delhi are inadequate to meet the increasing demand of the population for this facility. The proposed spots are named in the chapter on Recreation in the work studies and some of these should be developed immediately. So, too, some of the hunting, fishing and sailing areas, like Najafgarh Jhil and Okhla, should be developed for these sports.

(iv) Regional Parks:

The most important of these is the Upper Ridge which should be reserved for a regional park. It should not be allowed to be dissipated by small undesirable uses but should be gra-

dually developed as a central public park in Delhi, comparable to Hyde Park in London, Bois-de-Boulogne in Paris or Central Park in New York. For the present, small portions of it may be developed like the Buddha Memorial Park and the rest may remain in a natural state with the under growth cleared to facilitate hiking.

The other area is near the Qutab Minar which should be enlarged and part of it developed as a Botanical Garden.

The Southern Ridge is also a potential Regional Park and must be properly developed, in the course of years.

The existing use of the Malcha Rifle Range on the southern portion of the Ridge will remain undisturbed.

The total area shown under Regional Parks is 8,220 acres.

Some of the other potential regional parks are outside the Union Territory of Delhi and are indicated in the chapter on Recreation in the work studies.

(v) Agricultural Green Belt :

This is mostly a one mile depth inviolable green belt of agricultural land around the 1981 urbanizable limits, which will be kept in intensive agricultural uses by Zoning Regulations, which allow only farm houses and agricultural uses. This will prevent premature urban growth and the overspilling of development during the plan period.

(B) Education :

Standards for pre-primary, basic primary and higher secondary schools for various residential densities are given in the Sub-Division Regulations and locations will be shown in Zonal Development Plans and detailed plans. The sizes for higher secondary schools vary from 5 to 10 acres; for basic primary from 1.5 to 2.5 acres and for pre-primary from 0.2 to 0.75 acres, for residential densities varying from 200 to 50 persons per acre.

There is a huge back-log in all the three stages of schools, which is fully dealt with in the chapter on Education in the work studies. Urgent steps will have to be taken to build schools at an adequate pace so as to be able to meet all the requirements.

University and College Education.

There are at present 26 colleges affiliated to the Delhi University (of which 10 are in and around the University Campus), with over 14,000 students in 1960. All the colleges are overcrowded and are unable to cope with the increasing demand for college education. Moreover, the students have to travel long distances from far-flung colonies.

It is proposed to expand the existing university campus to have a total of 385 acres. A university centre in the south is proposed near the junction of Kitchner Road and Ring Road. This centre will have several colleges.

It is also proposed to have a number of colleges within easy reach of the residential areas each to serve a population of about 1,50,000. Land measuring 15 acres has been proposed for each college, which will suffice for the teaching buildings, staff quarters and playgrounds, with land left over for future expansion. It is proposed that only a few of these colleges would have hostel and dormitory facilities, as most of the students served by the colleges would come from the surrounding residential areas. In addition to the existing (1960) 26 colleges, sites for 22 new colleges have been earmarked in the Plan. Out of these, there are 4 existing professional colleges and an Engineering College has been located south of Hauz Khas.

It is further proposed that for every four or five colleges, a University Centre should also be provided. Such a Centre would contain comprehensive library facilities and research laboratories; and in addition serve as a general campus for evening cultural activities for the entire Planning Division. The Plan provides for 6 such centres with as much as 30 to 40 acres

each. The total area earmarked in the Plan is about 1,400 acres for colleges and University Campus and centres.

TABLE 2.

Distribution of Colleges and University Centres by Planning Divisions.

Planning Division	Colleges			University Campus & Centres		
	Existing	Proposed	Total	Existing	Proposed	Total
Old Delhi	2	—	2	—	—	—
Karol Bagh	2	3	5	—	—	—
Civil Lines	12	1	13	1	—	1
New Delhi	9	2	11	—	1	1
Shahdara	—	4	4	—	2	2
South Delhi	1	4	5	—	1	1
West Delhi	—	5	5	—	1	1
North Western	—	3	3	—	1	1
Total	26	22	48	1	6	7

Research Institutions:

Land has been allotted for the expansion of the Jamia Millia educational centre near Okhla and for the Pusa Agriculture Research Institute near Patel Nagar. Reservation of land has also been made for institutional use north of Badarpur Road. The All India Institute of Medical Sciences on Mehrauli Road and the Central Road Research Institute on Mathura Road and the National Physical Laboratory near the Pusa Institute are being developed to their optimum capacity.

Other Educational Institutes:

An area of about 600 acres has been earmarked for Educational and Cultural purposes south-west of the new Engineering

College. Out of this a suitable amount of land may be allotted for a new University and other educational institutes which subserve the needs of the urban area and provide for research, higher education and train educational personnel at an advanced level. Total land allocated in the Plan for Research and institutional uses is about 2,900 acres.

(C) Hospitals :

There are at present 7 general hospitals and a number of private hospitals and maternity hospitals. These are inadequate even for the needs of the present population. There are also two T.B. hospitals, one Infectious Diseases Hospital and one Mental Hospital. It is proposed to have 20 additional hospitals as shown in the Plan, calculated on the basis of one hospital of 500 beds to serve 1,25,000 people. The area proposed is about 15 acres each. It is also proposed that in each Planning Division at least one hospital will have about 25 acres, so that it can offer specialised services not available in other hospitals. Land has been reserved in the Plan for the expansion of some of the existing hospitals.

TABLE 3

Planning Division	General Hospitals		Total
	Existing	Proposed	
Old City	1	Nil	1
Karol Bagh	Nil	1	1
Civil Lines	1	1	2
New Delhi	3	1	4
Shahdara	Nil	6	6
South Delhi	2	2	4
West Delhi	Nil	5	5
North West Delhi	Nil	4	4
Total	7	20	27

It is proposed to locate three more Infectious Diseases Hospitals one each in the south, west and north,

The total area under Hospitals in the Plan is 953 acres.

(D) Other Community Facilities :

Police Stations :

Police Lines and a few large police stations, both existing and proposed, are shown in the Plan. These are distributed all over urban Delhi. Others will be shown in Zonal Development Plans.

Health Centres, Fire Stations, Electricity Sub-stations, Post and Telegraph Offices, Telephone Exchanges, Community Halls, community and neighbourhood shopping centres etc. will have to be shown in Zonal Development Plans and detailed plans. Standards for these are given in the Sub-Division Regulations.

(E) Public Utilities and Services :

In the chapter on Utilities and Services in the work studies, the total quantum of water and power required for the future growth of Delhi and measures for augmenting the present supply have been pointed out. Active steps have to be taken well in advance to secure the sources of water and power which are so essential for the healthy growth of the city. Gas supply to supplement power has also been suggested for consideration.

Water:

Additional land to the extent of about 20 acres has been earmarked for the expansion of the Chandrawal Purification Plant. Also, 40 acres of additional land has been reserved for the Wazirabad Headworks. The other waterworks is in Okhla which has sufficient land. Water supply to Shahdara will be from tube-wells and only a pumping station will be required. Additional land for pumping stations and reservoirs may be met from residential areas and the extensive park areas of the ridge.

Power:

The existing power house, being too near Rajghat, will continue till such time as the machinery becomes obsolete, so that the Rajghat site will be completely open to the river. A new site has been earmarked for the location of a big thermal plant south of the present site, as it will need constant and large supplies of water from the river and also a railway siding for coal. Land for housing the essential staff and for the future expansion of the plant has also been provided at the new site. Shahdara may require a thermal station to meet the increasing demand of power and a site near the river will have to be selected in due course.

Sewerage:

Proposals to discontinue sewage overflows into the Yamuna will have to be executed soon. Adequate land has been reserved for the treatment plants, at Okhla in the south, Coronation Pillar in the north, and near Keshopur in the west. A site for a new treatment plant has been reserved in South Shahdara to serve the whole of the proposed urban area across the Yamuna.

Wireless and radio transmitting stations:

Sites for the essential wireless and radio transmitting stations have been earmarked. It has also been recommended that some of the additional sites required for such stations that have to be in urban Delhi may be located in the park areas of Siri and Anand Parbat. Others must be located in the Rural Zone, as they take up a lot of valuable urban land.

Cremation and burial grounds:

The existing Nigambodh Ghat has to be redeveloped with more bathing ghats and parks. Two and three storeyed houses should be built for the dwelling of those connected with the cremation rites and bathing ghats should be properly developed. Shops should be provided for the stacking of fire-wood etc. near

the ghats. The rest of the Jamuna Bazaar squatters should be relocated in the area to be developed across the bund on the G.T. Road to Shahdara and elsewhere according to Plan.

A site near the Yamuna bridge has been recommended for an electric crematorium which is so essential for a big city like Delhi. Thirteen other sites for cremation grounds have been earmarked in the plan so that they are within two or three mile radius of the residential areas. These should be properly developed with trees all around the cremation ground in order not to spoil the amenity of the surrounding areas. The existing cremation grounds like the one on Panchkuin Road which is in the midst of the urban area should be speedily relocated.

The Muslim burial grounds at Kotla are almost full. Two new sites have been proposed. One between the National Bypass and the railway line from Mathura, south of the proposed railway bridge and the other across the Yamuna.

A Christian burial ground and a Parsi Cemetery already exist in the city.

Dumping grounds and sanitary fills:

The main dumping grounds for night soil are at Badli beyond the urbanizable limits. In the chapter on Utilities in the work studies it has been strongly recommended that presently cut up and low lying land may be reclaimed by hygienically conducted sanitary earth fills of garbage. This will not only reduce the mileage for trucks carrying garbage long distances away from urban areas, but in the long run, will make available valuable lands (which are now water-logged) for essential urban purposes like parks etc.

(F) Social and Cultural Institutes :

Delhi has been sometimes described as a city without much social and cultural life. While this may be partly true of New Delhi and the new colonies, which had to grow up under stress

when much thought was not given to providing these facilities compared to providing shelter. But the Old City of Delhi has a rich tradition of social and cultural life, which too may die a slow death if the necessary impetus is not forthcoming. Recognising this, it has been strongly recommended that multi-purpose community centres be provided so that a framework may be built up within which the whole fabric of social activities can be inter-woven in such a way that the anonymity of city life does not stifle the cultural life of the citizens. This is fully discussed in the chapter on "Education, Health and Recreation" in the work studies.

The plan has also provided land reservations for charitable, social and educational institutions for the handicapped and under-privileged. These are in the south-west near Tehar Jail and in the north-west near Azadpur. As already stated, a 600 acre land reservation has been made in the south for educational, social and cultural institutions.

Another major centre to meet the long standing aspiration for a richer cultural life, is the site stretching on either side of the Central Vista starting from Janpath and ending at the National Stadium and the Purana Qila beyond. This will be the new heart of the Metropolis with the four major national buildings; viz. the National Archives, the National Theatre, the National Library and the National Museum. Vigyan Bhavan, an assembly and conference hall, is already functioning on Maulana Azad Road. New social and cultural buildings of national importance like conference and assembly halls, art galleries, convention halls, public auditoria, theatres and state guest houses should be built by Government in this area.

Another cultural, social and institutional centre proposed is near Sapru House as shown in the Plan. A large area is earmarked for the purpose where the Tagore Memorial Theatre has already come up.

A third cultural area proposed will be the new Civic Centre, planned around the proposed Municipal Corporation buildings opposite Ram Lila Grounds. This Centre, it is hoped, will bring about the social and cultural integration of Old Delhi and New Delhi by providing common facilities and new centres of interest.

Yet a fourth cultural centre is proposed in about 45 acres of land in the Siri area in the south. This will have an integrated plan for the social and cultural activities of the various states that constitute the Indian Union. The idea is to give a fillip to such activities in the National Capital so that the people of different States can enrich themselves through the medium of song, drama, dance and other fine arts. This, it is hoped, will help in the emotional and cultural integration of the Indian people.

The total area under social and cultural use in the Plan is about 380 acres.

To sum up, the urbanizable area upto 1981 covers about 1,10,500 acres. The detailed distribution of land uses in the Plan is given in the chapter on "Land Use Survey and Analysis" in the work studies.

10. NEED OF REVIEW AND REVISION :

It will be seen that land allocations for various uses emerge from an assessment of the needs of the estimated population in 1981 in various directions—housing, employment, education, health, recreation, transport, community facilities and public utilities. While a reasonably long-range plan is necessary in order to give a proper perspective, it has to be within the realm of possibility. The outlines of growth during a period of two decades or so can be drawn with a fair amount of accuracy; the passage of time cannot cause any overwhelming aberrations if constant review enables timely re-assessment and modification. On the other hand, these proposals are not intended to provide a rigid delineation of the pattern of growth until 1981. The year 1981 is no *annus mirabilis* in the history of Delhi. That year gives only a working range and no more. The city and

the region will continue to grow after that—grow not merely in the narrow sense of population but in the range and variety of its activities. Many things are bound to happen during this period. Such is the dynamic quality of an urban concentration and Delhi, more than many cities, displays a vitality that gives it a character of its own. Not only, therefore, will the plan require constant review so as to keep pace with the rapidly changing pattern of growth, investigation and research must go on all along the line so that the chances of a hiatus being created are avoided.

The periodical revisions of the plan in the intervening period should anticipate and fulfil, on the basis of a rational scientific study, the needs of the community for the period after 1981. The process of planning is as continuous as the growth of towns; it is not a "fitful fever".

One thing is certain, whether plans are made or not, and that is that many new demands shall be made by the growing city in the years to come. The strengthening of the economic base of the country through the determined efforts of the national five year plans and the numerous social welfare activities undertaken by Government will produce an impact on the physical aspects of living and these will have to be catered for. If plans are prepared in anticipation of such situations, many frictions can be avoided, growth regulated along pre-determined lines and over-heads caused by belated action avoided. Indeed, if the imperatives had been realized earlier, the enormous backlogs and formidable problems which face the city today would not have existed in their present form. The labour involved in making the initial comprehensive plan is undoubtedly great but it facilitates the whole process of development thereafter. That is a rich enough reward but one cannot rest on one's laurels.

11. Proposed rights of way in the Old City.

TABLE 4 : List indicating Proposed Rights of Way of Roads in the Old City.

Sl. No.	Name of Road	From	To	Approximate length in feet	R/W in ft. recommended	Remarks
1	2	3	4	5	6	7
1	Machli Bazar Road . . .	Junction of Faiz Bazar Road.	Jama Masjid	2,000	80	
2	Esplanade Road . . .	Chandni Chowk	Jama Masjid	1,700	80	
3	Matia Mahal Road . . .	Jama Masjid	Chitli Kabar Road	800	36	
4	Chitli Kabar, Delhi Gate . . .	Delhi Gate	Jama Masjid	3,000	36	
5	Bazar Sita Ram . . .	Hauz Kazi	Turkman Gate	3,100	(i) Chaurasi Ghanta to Turkman Gate.....36 ft. (ii) Hauz Kazi to Chaurasi Ghanta.....45 ft.	
6	Bazar Ajmere Gate . . .	Hauz Kazi	Ajmere Gate	1,250	60	
7	Chawri Bazar . . .	Hauz Kazi	Jama Masjid	1,800	60	
8	Lal Kuan . . .	Hauz Kazi	Chowk Naya Bans & Katra Bariyan	2,600	60	
9	Katra Bariyan . . .	Fateh Puri	Chowk Naya Bans & Katra Bariyan .	750	50	Enforcement of one way traffic on this road is recommended.
10	Khari Baoli . . .	Fateh Puri	Lahori Gate	1,300	100	
11	Nai Sarak . . .	Chandni Chowk	Bar Shabula	2,300	50	In this connection the widening of the link between Queens Road and Chandni Chowk Road is recommended.
12	Church Mission Road . . .	Khari Baoli	Queens Road	1,150	60	
13	G.B. Road . . .	Ajmere Gate	Lahori Gate	3,400	(i) for built up portion 80 (ii) for unbuilt portion 100	If the Rly. Authorities agree to give another 20 feet of land then the width of the road in the built up portion also might be 100 ft.

Table 4—contd.

Sl. No.	Name of Road	From	To	Approximate length in feet	R /W in ft. recommended	Remarks
1	2	3	4	5	6	7
14	Naya Bazar	Kabli Gate (Queens Road Junction)	Lahori Gate	1,800	100	
15	Chandni Chowk	Old Clock Tower Chowk	Elgin Road	2,800	110	The Corporation's chabootras may also be taken for widening of the road.
16	Do.	Old Clock Tower Chowk	Fatehpuri Masjid	1,200	110	
17	Queens Road	T.B. Clinic	Elgin Road	6,300	120	
<i>Outside the City Wall</i>						
1	New Rohtak Road	Faiz Road	Junction of Najafgarh Road	13,200 Rft. (2.5 miles)	120	
2	G.T. Road (Karnal)	Fruit & Vegetable Market	Gur-Ki-Mandi	8,000 Rft. (1.5 miles)	100	From the Fruit and Vegetable Market to the Clock Tower the proposed widening should be done to the left of the Road in view of the existing service lane behind Road (South side).
3	Rani Jhansi Road	Junction of Link Road.	Pul Bangash	9,500 Rft. (1.83 miles)	100	
4	Roshanara Road	Clock Tower Subzimandi	Pul Bangash	5,400 Rft. (1.1 miles)	100	

1. As regards other roads in the Old City not included in this statement, it is recommended that in the built up area the existing road width should remain except where there is scope for widening.

2. It is also recommended that the construction of colonnades and projections on all roads be prohibited.

12. STAGING OF DEVELOPMENT

Section 7(2) (a) of the Delhi Development Act of 1957, enjoins that the Authority shall not only prepare the Master Plan, but also indicate the stages by which any such development shall be carried out.

It will be appreciated that any attempt at "staging" of the development programme can possibly be done only after duly considering and assessing various factors among which the most important ones are the financial and administrative resources of the plan implementing authorities. Obviously, it is not quite possible to assess such and many other imponderable factors over a long period, which extends upto 1981, so as to relate precisely the physical targets with the resources that may be available in future from time to time.

The two broad stages worked out in the accompanying statement put together in the first or the second stage, as the case may be, items of contemporaneous development indicating an

ordered sequence in developmental activity, *i.e.*, the work in the first stage to be taken up first and only thereafter the work in the second stage to be tackled. In putting the various items in the first or the second stage, as good an assessment as possible has been made of the needs of the community and the priority that each need deserves. For instance, it will be unrealistic to expect full recreational facilities to be available immediately and therefore, the bulk of the programme under this item finds a place only in the second stage. On the other hand, certain programmes like augmentation of water and power supply figure more prominently in the first stage itself. This is so because by its very nature the bulk provision of services has to be somewhat ahead of the needs. As regards the provision of community facilities, internal distribution system, roads, re-housing and re-development, these are parts of the programme of residential and industrial development and will follow the standards laid down in the Plan. As the developmental programme goes on getting implemented, the staging itself will have to be subjected to review and revision.

Table 5 : Staging of Development for Delhi Master Plan

Serial No.	Description	Area in acres			REMARKS
		I Stage	II Stage	Total	
1. Acquisition of Land & Development :					
(a)	Residential	17,000	13,000	30,000	As regards provision of major roads, community facilities, rehousing and redevelopment these will form a part of the land development programme.
(b)	Commercial	1,160	740	1,900	
(c)	Industrial†	3,360	1,440	4,800	
(d)	Government	300	200	500	
(e)	District & Regional Parks††	6,250	18,750	25,000	
	TOTAL	28,070	34,130	62,200†††	
2. Public Utilities :					
(a)	Water supply				Provision of Trunk Sewers only to cover the acreages given.
	Bulk supply and distribution	100 M.G.D.	60 M.G.D.	160 M.G.D.	
(b)	Sewerage	26,040 acres	11,160 acres	37,200 acres	
(c)	Sewage Disposal	90 M.G.D.	52 M.G.D.	142 M.G.D.	
(d)	Electricity	2,74,800 Kw.	1,83,200 Kw.	4,58,000 Kw.	

†This does not include land covered by "Institutional Use", University and Colleges, Hospitals, Cultural centres and Major Roads.

††The exact area which will be under commercial use in the heavily built up areas like the Old City, Subzimandi, Karol Bagh, etc. will be known when detailed redevelopment plans are made for these areas.

†††This includes the Ridge which has an area of about 8,000 acres and also the River Front on either side of the Yamuna from Wazirabad to Okhla.

CHAPTER II
ZONING AND SUB-DIVISION REGULATIONS

A. ZONING REGULATIONS

1. NATURE OF REGULATIONS

In order to promote public health, safety, and the general moral and social welfare of the community, it is necessary to apply reasonable limitations on the use of land and buildings. This is to ensure that the most appropriate, economical and healthy development of the city takes place in accordance with the land use plan and its continued maintenance over the years. For this purpose the city has been divided into a number of "use zones" such as Residential, Commercial, Industrial, Recreational etc. Each use zone has its special regulations because a single set of regulations cannot be applied to the entire city, as the different use zones vary in their character and function. In this respect, zoning regulations differ from building codes or sanitary codes which in general apply uniformly to all land or buildings of like use and character wherever they may be located in the community. Zoning regulations are not to be used for nuisance control nor can they be used to accomplish any kind of human segregation like excluding certain communities, or income groups from certain areas.

Zoning protects residential areas from the harmful invasions of commercial and industrial uses while it also promotes business and industry by the very nature of the planned and orderly development that it ensures. By requiring the spacing of buildings it provides adequate light, air, protection from fire etc. It prevents over-crowding in buildings and land and thus facilitates the provision and continued adequacy of water, sewerage, transportation, schools, parks and other facilities.

It should also be understood that zoning is not ordinarily a retroactive measure—that is, it does not prohibit uses of lands and buildings that were lawfully established prior to the coming into effect of the zoning regulations. If these uses are contrary to the regulations in a particular use zone, and would not be allowed as new uses, they are designated as "non-conforming uses". The provision under this head will gradually eliminate non-conforming uses without inflicting unreasonable hardships upon the property owner.

Thus zoning regulations and their administration are a major tool in carrying out the land use part of the Master Plan of which it is an integral part.

2. ESTABLISHMENT OF "USE ZONES".

For the purposes of these Regulations, the Union Territory of Delhi has been divided into 24 use zones designated as follows :

- | | | |
|----------|-----------|-------------------------|
| 1. R-25 | | Residential |
| 2. R-50 | | Residential |
| 3. R-60 | | Residential |
| 4. R-75 | | Residential |
| 5. R-100 | | Residential |
| 6. R-125 | | Residential |
| 7. R-150 | | Residential |
| 8. R-200 | | Residential |
| 9. R-250 | | Residential |
| 10. A-1 | | Agricultural Green Belt |

11. A-2	. . . .	Rural.
12. C-1	. . . .	Retail shopping.
13. C-2	. . . .	General Business and Commercial (Central and Sub-Central business districts, District Centres).
14. C-3	. . . .	Wholesale.
15. M-1	. . . .	Flatted factory.
16. M-2	. . . .	Work-cum-Industrial Centre.
17. M-3	. . . .	Special industry.
18. M-4	. . . .	Light industry and Service industry.
19. M-5	. . . .	Extensive manufacturing.
20. M-6	. . . .	Extractive industry, mining, brick kilns, stone quarrying etc.
21. W	. . . .	Warehousing, storage and depots.
22. G	. . . .	Government and semi-government offices.
23. P	. . . .	Recreation.
24. F	. . . .	Public and semi-public facilities.

The land use plan shows the various use zones. In the case of District Centres where no separate areas have been marked for retail shopping, work centre or flatted factory and government office but are indicated in the text of the Land Use Plan, such demarcations will be shown in detailed plans. The land use plan does not show local shopping, local parks, schools etc. Hence, in built up areas, the local municipal authorities may allow such uses, based on quick surveys and on an *ad hoc* basis, until zonal development plans are prepared. The latter, when prepared, will incorporate the land use proposals prepared by the local authorities. In new areas development shall take place only on the basis of the zonal development plans.

3. NON-CONFORMING USES :

The provision regarding these will come into effect with respect to industrial non-conforming uses and such other uses specifically mentioned below. For the rest of the non-conforming uses the provisions will come into effect only after the preparation of the zonal development plans since only these will determine the siting of local facilities like shops etc. mentioned above. All existing places of worship, temples, gurdwaras, mosques, churches, Jain temples, Parsi fire-temples, etc., and burial grounds shall not be considered as non-conforming uses.

DISCONTINUANCE OF NON-CONFORMING USES.

A. Industrial Non-Conforming Uses :

Such industrial uses that do not conform to the land use shown in the Master Plan, will have to be shifted in gradual stages to industrial areas earmarked in the Plan. In allocating new industrial sites, the demands of the non-conforming uses will have to be given priority by the authorities and if possible other inducements may have to be given for expediting the shifting. This can be in the shape of providing extra land needed for expansion by the industry at the new site. allowing the present owners to develop land from which they are shifting in accordance with the land use shown in the Plan, providing a loan etc. It should also be noted that the shifting of industry according to plan will be possible only if suitable land for the purpose is available.

While it is agreed that the non-conforming industries should be given suitable time to shift from their present site, it is necessary to have a uniform policy on which to lay down a time schedule for their shifting. It is recognised that this process

must be largely governed by the fact that there should be the minimum amount of dislocation of production and the industries and workers should not be put to undue hardship.

Time-Schedule.

(1) Noxious industries must be the first to go from their present location. A three year period may be stipulated within which they have to be shifted with additional time if the capital value exceeds one lakh rupees.

(2) Industries which are not noxious but are causing nuisance should be given up to four years for shifting.

However, additional time limit, as per table, upto a maximum of 10 years may be given to nuisance industries on a sliding scale on the following criteria :

- (a) The capital value of land, structure and machinery allowing for depreciation; more time is given to industry with higher capital value.
- (b) The registered employment of industry. More time given to industries employing more workers.
- (c) The production floor space per worker. More time if the industry has more floor space per worker which is computed by dividing the total production floor space in square feet by the total registered industrial employment.

(3) Non-nuisance industries will get more time on each of the counts upto a maximum of 20 years.

(4) A non-conforming use tax will be levied if the industry wants to stay after the moratorium period has lapsed and it is considered by the Competent Authority that such permission should be given. In such cases, the extension, should not exceed ten years.

Time-Schedule for Non-conforming uses.

Industrial Uses

Condition for Moratorium	Noxious industries	Nuisance Industries	Non-nuisance Industries
	No. of years	No. of years	No. of years
1	2	3	4
Industries with No. of registered employees 1 to 19, with production floor space per worker 50 sq. ft. and below and capital value less than one lakh	3	4	6
No. of registered employees between 20 to 99 (additional years)	..	1	2
No. of registered employees 100 and above (additional years)	..	1	2
Production floor space per worker between 51 to 100 sq. ft. (additional years)	..	1	2
Production floor space per worker of over 100 sq. ft. (additional years)	..	1	2
Capital value between one and five lakhs (additional years)	1	1	2
Capital value above five lakhs (additional years)	1	1	4
Maximum No. of years	5	10	20

NOTE : 1. Time is given on each count listed in the table and is cumulative in the order given in Table.

2. Noxious and hazardous industry is that "which is or may be dangerous to life or injurious to health or property" *caused by fumes, effluent, or smoke or by producing or storing inflammable materials.

3. Nuisance industry is that "which causes or is likely to cause injury, danger, annoyance or offence to the sense of sight, smell or hearing or disturbance to rest or sleep"*
4. Capital value is cost of land, structure and machinery allowing for depreciation on the date of sanctioned Master Plan.
5. The employment noted in table is for industry using power. For industry not using power the employment is to be taken as double.

*As defined in 2(33) of Chapter I of the Delhi Municipal Corporation Act, 1957.

B. Residential Non-Conforming-Uses.

Time Schedule

Land Use	No. of years	Remarks
Residential use in Industrial areas.	10	May be converted to industrial use provided layout plan and structure are approved.
Residential use in commercial areas.	10	May be converted to commercial use if layout plan and structure are approved. Residential use can continue on first and higher floors.
Residential use in public recreational areas.	10	Except in the case of existing villages.

C. Commercial Non-Conforming-Uses.

Time Schedule

Land Use	No. of years	Remarks
Commercial use in Industrial area.	10	May be converted to industrial use provided layout plan and structure are approved.
Commercial use in residential area.	10	Local commercial areas will have to be shown in zonal plans.
Commercial use in public and semi-public use areas including recreational areas.	10	"

IMPROVEMENTS AND ALTERATIONS PERMISSIBLE IN NON-CONFORMING USES.

If an undertaking is given by such non-conforming uses that no compensation will be claimed, then improvements to buildings, or machinery as stated below may be allowed :

1. Repairs, replacement, modernisation or reform in any manner to improve productivity, efficiency and economy of the existing power plant and workshops and other auxiliary departments connected with the carrying on of the activities of the existing equipment.
2. Any re-organisation, alteration, or repairs of buildings that house such plant and equipment.
3. Alteration, reorganisation, extensions and addition to the existing office buildings, residential houses, amenities, gates, tanks, platforms, wells, roads, drains and other structures in order to maintain and improve the efficiency, productivity and economy of the existing manufacturing activities.
4. Repairs, alteration, or rebuilding of godowns on an industrial plot stocking raw materials, machinery parts and spares, finished products, building materials etc.

Non-conforming non-industrial uses will not be allowed to make additions to buildings in any case.

In the case of industrial non-conforming use, additions either to building or machinery in extension of existing work-space should not be allowed.

The setting up of new machinery for a new line of manufacture on existing site should not be permitted. But the use of existing machinery and buildings with requisite alterations, if

necessary, for a different line of manufacture may be permitted, provided it is not noxious.

The period of moratorium will be reckoned from the date of legalisation of the Master Plan and not from the date of the new use.

RESUMING AFTER DISCONTINUANCE OF A NON-CONFORMING USE.

If a non-conforming use is discontinued for more than one year, any further use of the buildings and premises shall be in conformity with the Master Plan.

REBUILDING AFTER DAMAGE OR DESTRUCTION OF A NON-CONFORMING USE.

Any non-conforming building or structure which is damaged to an extent exceeding fifty per cent of its reproduction value, exclusive of foundations, by fire, floods, explosion, earth-quake, war, riot or an act of God, may not be restored, reconstructed and used for any other than a purpose permitted in the Master Plan for the area in which the building or structure is located

TEMPORARY PERMITS.

Competent Authority may allow for temporary use with a time limit, a use other than the use stipulated in the Master Plan, like tents for workers to live while constructing an industrial estate or where an area is undeveloped and the property owner wishes to continue agriculture or in undeveloped areas to make temporary use of the land in some other way than shown in the Master Plan with definite time limit and on a specific permit.

4. PROVISIONS REGARDING USES IN "USE ZONES"

Residential.

1 to 3. Use zones—R25, R50 and R60.

Uses permitted.

Residences, hostels and boarding houses with density limitations; nurseries, kindergartens and schools; clinics, social and cultural institutions with adequate parking facilities; public utilities and buildings except service and storage yards; non-commercial farms, agricultural gardens, nurseries and green houses; any neighbourhood recreational uses including clubs and other semi-public recreational uses; accessory uses clearly incidental to residential use (except retail shops and service uses) which will not create a nuisance or hazard.

Uses permissible if allowed by competent authority after special appeal.

Temples, mosques, churches and other places of worship; professional office or home occupations when situated in the same dwelling as the one occupied by the professional man or woman or when located in local shopping centre; commercial offices, service uses and retail shops of a neighbourhood character when located in local shopping centres or in concentrated locations or as shown in the zonal plan when prepared; hotels, motels, hospitals and sanatoria not treating contagious diseases or mental patients, provided the set back and coverage of plots are such as not to constitute nuisance to the residential area; colleges and research institutions not to be operated for the production of goods or other materials for sale provided there is no nuisance created and no part of the building is located less than 50 feet from any plot line; municipal, state and central Government offices; raising of poultry or cattle for non-commercial uses provided that no bird or animal is housed closer than 50 feet of a dwelling or a property line; removal of gravel, clay, sand or stone for development of site which will not result in the stagnation of water or cause other nuisance; bus depots, railway passenger and freight stations; petrol filling stations on roads of 100 feet right of way and above; service and storage yard, taxi and scooter stands.

Uses prohibited :

All uses not specifically permitted herein.

Residential.

4 to 6. Use zones R75, R100 and R125.

Uses permitted.

All uses permitted in R25 to R60 use zones.

Uses permissible if allowed by competent authority after special appeal.

All uses permissible in R25 to R60 use zones.

Uses prohibited.

All uses not specifically permitted herein.

Residential.

7 and 8. Use zones—R150 and R200.

Uses permitted.

All uses permitted in R75 to R125 use zones.

Uses permissible if allowed by competent authority after special appeal.

All uses permissible in R75 to R125 use zones.

Uses prohibited.

All uses not specifically permitted herein.

Residential.

9. Use zone—R 250.

Uses permitted :

All uses permitted in R200 use zone.

Uses permissible if allowed by competent authority after special appeal.

All uses permissible in R200 use zone.

Uses prohibited.

All uses not specifically permitted herein.

Agricultural Green Belt.

10. Use Zone A. 1.

Uses permitted.

Agriculture; horticulture; dairy and poultry farming, milk chilling centres, farm houses and their accessory buildings and uses within the plot area limitation of minimum one acre plot; uses specifically shown or stated in the land use plan, like urban villages. Brick kilns and removal of clay upto 8 ft. depth beyond a distance of half a mile from the urbanizable limits of 1981.

Uses permissible if allowed by competent authority after special appeal.

Places of worship etc. schools; libraries, and educational and cultural buildings; parks and other public and semi-public recreational use not conducted for profit; storage, processing and sale of farm products on the property where produced; the servicing and repair of farm machinery and the sale of agricultural supplies; public utility and buildings.

Uses prohibited.

All uses not specifically permitted herein.

Rural.

11. Use Zone A.2.

Uses permitted.

All uses permitted in Agricultural Green Belt use zone.

Uses permissible if allowed by competent authority after special appeal.

Retail shops and service uses to be located in shopping centres; milk chilling stations and pasteurisation plants; cottage industry and such light industry which use agricultural and rural produce and not causing nuisance; rural colleges, boarding houses and hostels; scientific and industrial research laboratories, not to be operated for the production of goods or other materials for sale except as may be produced by a small pilot plant provided there is no nuisance caused and no part of the structure is placed closer than 100 feet from any dwelling or an adjoining premises or from any property line or road; excavation of clay, gravel, top soil and other earths and materials upto 8 feet depth; stone quarrying; bus, or railway passenger and freight stations; landing fields for planes and their necessary appurtenances; utilities and buildings; area needed for Defence purposes, wireless transmitting and weather stations.

Uses prohibited.

Uses not specifically permitted herein.

Retail shopping.

12. Use zone C. 1.

Uses permitted :

Retail shops; business and professional offices; service uses like barbers and tailors; laundry and dry cleaner's shops etc. restaurants and entertainment places; residences, social and welfare institutions provided they are located in first and higher floors; clinics; meat, fish and fruit markets; roofed storage for legitimate retail business; public and semi-public recreational uses; public utilities and buildings. Parking area requirements for all uses must be approved.

Uses permissible if allowed by competent authority after special appeal.

Social and welfare institutions, petrol filling stations, coal, wood or timber yards, service garages; light manufacturing without nuisance or hazard and employing not more than 4 persons with or without power provided the goods manufactured are sold on the premises in retail; taxi and scooter stand, bus terminal. Parking area requirement for all uses must be approved.

Uses prohibited.

All uses not specifically permitted herein.

General Business and Commercial, District Centre, Sub-district centre.

13. Use Zone—C. 2.

Uses permitted.

All uses permitted in C.1 use zone; also hostels and boarding houses; colleges, schools, research institutions; service garages, warehousing and covered storage, local and central government offices. Parking area requirements for all uses must be approved.

Uses permissible if allowed by competent authority after special appeal.

All uses allowed with special appeal in C.1 zone. In addition, newspaper and printing presses. The following may also be allowed in specific areas under detailed plans or zonal plans of the shopping centre: light manufacturing and service industries without nuisance or hazard and not employing more than 10 persons with or without power, junk yards. Parking area requirements for all uses must be provided.

Uses prohibited.

All uses not specifically permitted herein.

Wholesale:

14. Use Zone C. 3.

Uses permitted :

Wholesale and retail shops, storage for wholesale uses except when specifically prohibited, business offices; restaurants and residences provided they are located in first and higher floors; public utilities and buildings, parking, loading and unloading requirements must be approved for all uses.

Uses permissible if allowed by competent authority after special appeal :

Truck terminal and parking; schools, clinics, social and cultural institutions; recreational uses, storage and markets dealing with meat and fish. Parking, loading and unloading area requirements must be provided for all uses.

Uses prohibited :

Storage of petroleum and other inflammable materials; storage of any material causing dust and colour; junk yards. All uses not specifically permitted herein.

***Flatted Factory :**

15. Use Zone M. 1.

Uses permitted :

Industries conforming to performance standards as given in illustrative list, which would not cause excessive, injurious or

*Illustrative list of permissible industries with conditions to be fulfilled is given in Schedule of Industries for each of the use zones.

obnoxious noise, vibration, smoke, gas fumes, odour, dust, effluent or other objectionable conditions and employing not more than 20 workers with power or 40 without power, covered storage for industry. Public utilities and buildings; parking, loading and unloading requirements must be approved for all uses.

Uses permissible if allowed by competent authority after special appeal :

Bus and truck terminals, railway passenger and freight terminals; petrol filling stations, taxi and scooter stands, junk yards. Dwellings for watch and ward staff, canteen and recreation facilities for the employees.

Uses prohibited :

General residences; retail and commercial business unless incidental to and on the same site with an industry. All uses not specifically permitted herein.

Work-cum-industrial centres.

16. Use Zone M. 2.

Uses permitted :

Same as in M. 1 Use Zone.

Uses permissible if allowed by competent authority after special appeal.

Same as in M. 1 use zone except that F.A.R. and coverage etc. are different as given later on.

Uses prohibited :

All uses not specifically permitted herein.

Special Industry.

17. Use Zone M. 3.

Uses permissible if allowed by competent authority after special appeal :

Only such industries as given in the illustrative list that do not create nuisance of any type will be allowed. Canteen, recreation and residences to employees provided the density is not more than 25 persons per acre on the site.

Uses prohibited :

All uses not specifically permitted herein.

Light Industries and Service Industries :

18. Use Zone M. 4.

Uses permitted :

All industries permitted in M. 1, M. 2 and M. 3 use zones and others given in the list of industries and employing not more than 50 workers with power and 100 without power, service industries; warehousing and storage; public utilities and buildings and agricultural use in existing agricultural land until the area is required for development. Parking, loading and unloading area requirements must be approved for all uses.

Uses permissible if allowed by competent authority after special appeal.

All uses allowed with special appeal in M. 1 zone. In addition such light and service industries named in schedule which in the opinion of the competent authority will constitute light industry by performance standards even though it employs more than 50 people; junk yards; petrol filling stations; farm houses in existing agricultural land provided guarantee is given that it would be demolished when the area is required for development. Parking, loading and unloading requirements must be provided.

Uses prohibited :

Same as in M. 1 use zone.

Extensive Manufacturing Use Zone :

19. Use Zone M. 5.

Uses permitted :

All uses permitted in M. 4 use zone.

Uses permissible if allowed by competent authority after special appeal :

All uses allowed with special appeal in M. 4 zone. All industries mentioned in schedule subject to standards stipulated on smoke, odour, fumes and noise produced in the working of the industry.

Uses prohibited :

Same as in M. 4 use zone.

Extractive Industrial Use Zone :

20. Use Zone M. 6.

Uses permitted :

Removal of gravel, earth, sand etc., extraction of minerals, with any conditions imposed by competent authority; agricultural and uses—incidental to agriculture.

Uses permissible if allowed by competent authority after special appeal :

Nil.

Uses prohibited :

All uses not specifically permitted herein.

Warehousing Storage and Depot Use Zone.

21. Use Zone W.

Uses permitted :

Warehousing, storage and depot for non-perishable and non-inflammable commodities and incidental use. Parking, loading and unloading area requirements must be approved for all uses.

Uses permissible if allowed by competent authority after special appeal :

Warehousing of perishable and inflammable commodities. Dwellings for watch and ward staff. Parking, loading and unloading requirements must be provided.

Uses prohibited :

All uses not specifically permitted herein.

Government offices.

22. Use Zone G.

Uses permitted.

Local, state and central government offices and use for Defence purposes; research institutions; social and cultural institutions, bus and railway passenger terminals, public utility and buildings, local municipal facilities, uses incidental to government offices and for their use. Parking requirements must be approved.

Uses permissible if allowed by competent authority after special appeal :

Nil.

Uses prohibited :

All uses not specifically permitted herein.

Recreational.

23. Use Zone P.

Uses permitted :

All public and semi-public recreational uses including parks, playgrounds, park-ways and boulevards; special recreation areas and special educational and recreational areas; bus and railway passenger terminals and car parking area. Parking area requirements must be approved in all cases.

Uses permissible if allowed by competent authority after special appeal :

Outdoor theatres and drive-in-cinemas, restaurants and selling of eatables; public utility and municipal facilities; uses clearly incidental to recreational use which will not create nuisance or hazard. Dwelling for watch and ward staff. Parking area requirements must be provided.

Uses prohibited :

Uses not specifically permitted herein.

Public and Semi-public Facilities.

24. Use Zone F.

Uses permitted :

Local and zonal municipal offices; educational and research institutions, social and cultural institutions; monuments and religious institutions; local municipal and community facilities public utilities and buildings; radio transmitter and wireless stations; cremation grounds and cemeteries. Parking area requirements must be approved for all uses.

Uses permissible if allowed by competent authority after special appeal.

Residences and other uses incidental to main use and in no way causing any nuisance or hazard.

Uses prohibited :

All uses not specifically permitted herein.

5. PROVISION REGARDING REQUIREMENTS IN USE ZONES.

DENSITY, COVERAGE, FLOOR AREA RATIO.

SETBACK AND OTHER REQUIREMENTS OF USE ZONES.

I. Residential Use Zone :

General.—For purpose of calculating density (which is indicated by a suffix like R 50 in the text or as 50 in the Land Use Plan for a density of 50 persons per acre) in the residential zones, one dwelling unit will have 4·5 persons.

The density shown in the Land Use Plan for a particular area shall be followed in considering layout plans for the area, provided that the competent authority concerned may, till such time as the Zonal Development Plans are finalised, approve individual layouts, so as to achieve the overall density prescribed for the area. However, a variation either way upto 15 per cent of the gross densities (shown in the Land Use Plan) may be allowed. The community facilities should be planned on the basis of the actual gross density achieved or that prescribed for the Residential Planning Area, whichever is higher, applying the interpolation method for calculating the various areas. In calculating gross residential density shown in the Land Use Plan, all land meant for community facilities (local shopping, neighbourhood parks, local open spaces, playgrounds and tot-lots; high schools, primary and nursery schools and other community facilities such as those listed in table 5, page 68 of the Sub-division Regulations, Chapter II), and residential streets upto 80 feet right-of-way should be included. The actual determination of the community facilities (including community centres to be shown in Zonal Development Plans) will depend upon the size of the given layout in acres, and the overall population it is to contain.

In cases where the given area is bounded by roads of 80 feet and less only one-half of the right-of-way of the peripheral roads should be taken into density calculations.

In calculating gross residential density, the area of land for the following items should be excluded:—

- (1) major roads of 100 feet and more which are shown in the Land Use Plan;
- (2) open spaces including land under agriculture, semi-public recreation, regional and district parks, large playgrounds, green-linkages and water courses as shown in the Land Use Plan;
- (3) all the non-residential areas (commercial areas, e.g., business districts, district and sub-district centres, warehouses, wholesale markets, offices, industrial areas, public and semi-public facilities, e.g., colleges, research and cultural institutions, hospitals, public utilities and installations) as shown in the Land Use Plan;
- (4) transport terminals and installations, such as, railway stations, marshalling yards, forwarding and booking agencies, local and inter-state bus and truck terminals and their depots, airport and the extensive parking areas as shown in the Land Use Plan; and
- (5) all historical buildings and monuments; burial and cremation grounds and existing places of worship.

Irrespective of the actual number of servants' quarters, for purposes of the density calculations in considering layout plans, the number of servants' quarters in various sizes of plots will be reckoned as under:—

- | | |
|---|--|
| (a) Plots upto 300 square yards : | Nil |
| (b) Plots above 300 square yards and not exceeding 600 square yards : | One servant's quarter per dwelling unit. |

- (c) Plots above 600 square yards and not exceeding 1,200 square yards : Two servants' quarters per dwelling unit.
- (d) Plots above 1,200 square yards : Three servants' quarters per dwelling unit.

Good planning practice for designs of residential areas should include :

- (i) Light and air in the buildings;
- (ii) Protection against noise, dust and local hazards;
- (iii) Open space for various family needs;
- (iv) Easy circulation and access, safety from accidents;
- (v) As far as possible regular shape of plots; and
- (vi) A logical arrangement of residential plots by sizes and shapes.

The translation of these requirements into actual planning practice would vary with design relations and density patterns.

Individual plots :

(Row houses, detached and semi-detached houses).

(a) *Minimum plot size.*—The minimum size of an individual residential plot for a two-storey, two family dwelling, should be 125 square yards.

NOTES :

- (1) Each servant's quarter shall comprise one habitable room of area not more than 120 square feet floor area, exclusive of cooking verandah, bath room and lavatory.
 - (2) The number of persons per servant's quarter mentioned in the above table will be reckoned as 4.5.
 - (3) The number of dwelling units on a plot will be reckoned the same as the number of floors permissible plus the number of servants' quarters as mentioned above.
- These conditions will not apply to 'group housing'.

In the case of low cost housing for low income-groups and slum rehousing the minimum plot size could be 80 square yards but not less.

(b) *Plot coverage.*—The plot coverage shall be as follows:—

	Coverage on each floor
(i) Upto 300 square yards	60%
(ii) Above 300 square yards and not exceeding 600 square yards	50%
(iii) Above 600 square yards and not exceeding 1,200 square yards	40%
(iv) Above 1,200 square yards	33½%

Provided that, in the areas which, prior to the establishment of the Municipal Corporation of Delhi, were included within the jurisdiction of the Delhi Municipal Committee, the permissible plot coverage for plots not exceeding 200 square yards shall be as under :—

- (1) Not exceeding 100 square yards—75% on each floor.
- (2) Above 100 square yards and not exceeding 200 square yards—66 2/3% on each floor.

NOTES :—(1) The area to be covered need in no case be less than the permissible covered area for the largest size plot in the lower category. For example, the area to be covered in a plot of 1,230 square yards will be 40% of 1,200 square yards i.e., 480 square yards and not 1/3rd of 1,230 square yards, which is only 410 square yards.

- (2) The permissible plot coverage for plots exceeding 200 square yards may be increased by one-tenth in the case of houses constructed on stilts, provided that the enclosed area on the ground floor shall not exceed 25% of the permissible covered area on the first floor.

(c) *Floors.*—In individual residential plots, normally only two storeyed buildings may be allowed plus an optional provision of barsati floor at the top. In individual plots exceeding 200 square yards, a two-storeyed building raised on stilts may be permitted, provided the enclosed area on the ground floor does not exceed 25% of the permissible covered area on the first floor. In individual plots of 300 square yards and above, which front on roads with a right-of-way of 80 feet and above, full three-storeyed construction with a barsati on top may be allowed [except that in the already built-up areas (list given below), to prevent the density from rising, construction shall be limited to two storeys with a barsati]. The ground and first floor coverages will be the same as for any other plot and the second floor coverage shall not exceed that of the first floor.

List of built-up residential areas :

1. Darya Ganj.
2. Jama Masjid.
3. Chitli Qabar.
4. Bazar Sita Ram.
5. Ajmere Gate.
6. Chandni Chowk.
7. Fatehpuri.
8. Lajpat Rai Market.
9. Kashmere Gate and Mori Gate.
10. Jamuna Bazar.
11. Roop Nagar.
12. Kamla Nagar.
13. Jawahar Nagar.
14. Shakti Nagar.
15. Prem Nagar.
16. Malka Ganj.

17. Subzimandi.
18. Pratap Nagar.
19. Kishan Ganj.
20. Sarai Rohilla.
21. Bara Hindu Rao.
22. Sadar Bazar.
23. Nabi Karim.
24. Qadam Sharif.
25. Ram Nagar.
26. Pahar Ganj.
27. Model Basti.
28. Manak Pura.
29. Karolbagh (Area bounded by New Rohtak Road on the North, Anand Parbat on the West, Pusa Road on the South and Faiz Road on the East).
30. Rajendra Nagar.
31. New Rajendra Nagar.
32. East Patel Nagar.
33. West Patel Nagar.
34. South Patel Nagar.
35. Gandhi Nagar.
36. Krishan Nagar.
37. Geeta Colony.
38. Shahdara.
39. Rohtas Nagar.
40. Balbir Nagar.
41. Rana Pratap Bagh.
42. Model Town.

43. Timarpur.
44. Shivaji Park.
45. Moti Nagar.
46. Mansarover Bagh.
47. Rajouri Gardens.
48. Ramesh Nagar.
49. Vijay Nagar.
50. Kingsway Camp.
51. Punjabi Bagh.
52. Multan Nagar.
53. Kirti Nagar.
54. Tilak Nagar.
55. Indrapuri.
56. Defence Colony.
57. Kailash and Extension.
58. Nizamuddin.
59. Golf Links.
60. Sundar Nagar.
61. Malviya Nagar.
62. Hauz Khas Enclave and Extension.
63. Lajpat Nagar
64. Jangpura.
65. Jorbagh.
66. Diplomatic Enclave.
67. Kalkaji.
68. Green Park.
69. Shahdara Town.
70. Dilshad Gardens.

71. Also, colonies sanctioned by the Municipal Corporation of Delhi in the past are included in the above list since they have been sanctioned on the basis of having two dwelling units per plot and the maximum height permitted.
72. All the regularised unauthorised colonies should have covered area on the terms and conditions on which they have been regularised, such as, one or two storey structures, one or two families per plot.
73. Certain areas of Civil Lines and New Delhi which are recommended for re-densification should be on the basis of zonal development plans for the density proposed in the Master Plan and number of storeys should not be according to the width of the road on which they front.

Where a barsati is permitted, not more than 25 per cent of the covered area on the ground floor or the floor immediately below the barsati or 500 square feet, whichever is less, should be allowed to be covered including the area covered by a staircase leading to the barsati. The barsati may be enclosed.

(d) *Frontage of plots.*—Each individual plot should provide a minimum frontage of 18 feet on the access road. The ratio of depth to frontage should normally range between 3.0 to 2.0 is to 1.0.

(e) *Set back lines.*—The following set back lines are prescribed depending upon the depth of plot for individual plots.

(f) *Front set back* :

Depth of plot.	Minimum set back required from plot line.
(a) Upto 60 feet	10 feet.
(b) Above 60 feet and not exceeding 90 feet .	15 feet.
(c) Above 90 feet and not exceeding 120 feet .	20 feet.
(d) Above 120 feet and not exceeding 150 feet .	25 feet.
(e) Above 150 feet and not exceeding 200 feet .	30 feet.
(f) Above 200 feet	40 feet.

(ii) *Rear set back line*.—Besides the front set back line, set back should also be provided at the rear of the plots according to municipal by-law subject to height restrictions to allow sufficient light and air circulation.

(iii) *Side set back line*.—Side set backs of at least 10 feet from plot line on each side should be left on detached plots.

In semi-detached plots side set back on one side should be at least 10'-0" from the plot line to the building line.

For row housing, corner plots should be suitably set back from the road right of way, according to traffic requirements.

(f) *Service Lanes*.—The minimum width of the service lane shall be 15 feet but it may be reduced to 10 feet in the case of low cost housing schemes sponsored by Government, semi-Government or other public bodies. It is not necessary to have these in the case of detached, and semi-detached housing. If provided, it should have a minimum of 15 feet right of way.

In the case of row and terraced housing, service lanes may be provided. It should have a minimum right of way of 15 feet. In case the length of the lane is more than 500 feet, the minimum right of way should be 20 feet.

Where garages are to be provided, in order to allow for easy turn of motor vehicles, the garages should be set back 15 feet from the centre line of the service lane.

Group Housing :

Group housing developments (two and multi storey apartments or low cost housing schemes) which will not be sub-divided into the customary streets and plots, will be governed by good design standards to ensure open spaces and community facilities. The intensity of use and the net density in these are intended to be higher than that stipulated in the Plan, provided the average gross residential density of the area under development of which the group housing is a part, is in accordance with the density requirements of the Plan. Also, no limits on the number of floors is stipulated except those that may be imposed in areas near monuments, airports etc. Access to dwellings could be provided by walkways and pedestrian paths and their widths would also be governed by design requirements. Adequate provision has to be made for parking and servicing and the walkways should open on a residential street of at least 45 feet or cul-de-sac or loop street of at least 30 feet.

In case of group housing having more than two storeys, steps must be taken to ensure water in the higher floors. For this purpose booster pumps and overhead tanks must be installed. Lifts and suitable stair-cases should be provided for more than 4 storey high buildings. Also open balconies for open air sleeping or air conditioning must be provided. In order to encourage higher storey development which will provide more open spaces by having lesser coverage, a higher floor area ratio is allowed. The minimum plot size for this sort of development is one acre. Set back and the arrangement of blocks, garages etc. will have to be approved in each case so that a healthy development is ensured. The following coverage and floor area ratio for various densities are proposed (low cost group-

housing schemes sponsored by Government, semi-Government and other public bodies are not covered by this):—

Gross residential density (persons per acre)	Maximum coverage %	Maximum F.A.R.*
25	25	75
50	25	75
60	25	75
75	30	125
100	33½	150
125	33½	150
150	35	150
200	35	175
250	35	175

$$\text{*F.A.R. or floor area ratio} = \frac{\text{floor area} \times 100}{\text{plot area}}$$

Floor area is defined as plinth area on all floors unless specifically excluded.

NOTES : (1) The coverages will be calculated on the basis of the whole area reserved for group housing after deducting :—

- (i) the area of collection streets 80 feet wide and feeder streets 60 feet wide around and within the group housing area. (Residential streets, loop streets, cul-de-sac, service lanes will not be deducted.
- (ii) the area for schools and other community facilities within the group housing area ; and
- (iii) the area for neighbourhood parks within the group housing area as shown in the Zonal Development Plan (local open spaces, playgrounds and tot-lots will not be deducted).

(2) The above basis will apply even in the case of group housing covering an entire neighbourhood, the whole of which will be treated as one scheme.

(3) In density calculation for group housing, each servant's quarter will be reckoned as one family.

(4) The density of a particular neighbourhood in which the group housing area is located, will be as shown in the Zonal Development Plan and the corresponding figures in the above table will be operative.

(5) The areas of barsati and mumti to the extent permissible for houses on individual plots will not be reckoned in the F.A.R.

II. "Agricultural Green Belt" and "Rural" Use Zones :

In order to preserve these zones in agricultural use certain restrictions on the size of the dwelling units should be imposed. They are as follows :—

Size of farm	Maximum coverage of dwelling unit	Maximum height of dwelling unit.
(1) 1 to 3 acres	500 sq. ft.	Single storey maximum height 20 ft.
(2) Above 3 acres	1,500 sq. ft.	Do.

N.B.—(1) Set back for dwelling house should be 50 feet from any boundary line of the property.

(2) Where the property abuts an urban road, the dwelling house building should be set-back from the centre line of that road by 200 ft. Where the property abuts a village road, the building set-back from the centre line of that road should be 100 feet.

(3) No dwelling unit should be built within two furlongs of the right of way of any National highway.

(4) In the case of special farms, for example, horse-breeding farms covering a large area, Government may allow a larger coverage as may be considered necessary for farm houses to be built on these farms.

III. Government Offices :

(a) *The Central Secretariat Complex.*—In order to achieve architectural composition and intensive use, the following provisions are stipulated.

F.A.R.	200
Maximum ground floor coverage including 5% for covered parking	25%

Another 5% may be allowed for covered garages for car and cycle parking. This area for parking on the ground floor will not be taken into consideration for calculating F.A.R., but the office space above it in first and upper floors will be counted. The total ground coverage including covered parking will not exceed 30%.

Semi-basement will be allowed for parking, servicing and storage and will not be taken in for F.A.R. calculation. It shall not exceed the ground floor coverage. Upto 50 per cent of the open area may be utilized for open parking and roads and the rest may be landscaped.

(b) *All other locations including those in District Centres :*

F.A.R.	150
Maximum ground floor coverage including 5% for covered parking	20%
Extra covered parking	5%
Semi-basement and open parking as above.	

IV. Commercial and Retail :

(a) *Connaught Place Extension, Minto Road and Ranjit Singh Road.*—The size of plot will naturally depend on the layout of the commercial area but any further sub-division of plots in the Connaught Place and its proposed extension area is not desirable.

F.A.R.	400
Maximum ground floor coverage	50%

Covered garages for cars & cycles	5%
First floor coverage	50%
Coverage for second floor and above	35%

Semi-basement, covering not more than the ground floor coverage, will be allowed for parking, servicing and storage and will not be taken into F.A.R. calculations. Upto 50% of the open area may be utilised for open parking and roads and the rest may be landscaped.

There is no limit on the number of floors but will be subject to air and light planes.

Minimum set back.

	For plots fronting 150 feet wide road.	For plots fronting 100 feet wide road and less.
Front	50 feet	40 feet
Rear	20 feet	20 feet
Sides	15 feet	15 feet

Service lane, if provided, should have a minimum right of way of 30 feet. In case there is a service lane on the side or rear, then the set back for ground and first floor is optional but should not be less than 20 feet for second floor and above.

(b) *F.A.R., coverages etc. for already built-up Commercial areas in the Walled City like Chandni Chowk, etc. (List given below).*—In such cases, coverages permissible would be as applicable in the existing building bye-laws of the Municipal Corporation of Delhi, e.g., 80 per cent on the ground floor and 70 per cent on the first floor and so on, with 150 F.A.R. for a two-storey construction, 200 F.A.R. for a three-storey construc-

tion, 250 F.A.R. for a four-storey construction and so on, provided that the F.A.R. will not exceed 300.

List of already built-up commercial areas.

1. Jama Masjid.
2. Chitli Qabar.
3. Bazar Sita Ram.
4. Ajmere Gate.
5. Chandni Chowk.
6. Fatehpuri.
7. Lajpat Rai Market.
8. Kashmere Gate and Mori Gate.
9. Malka Ganj.
10. Subzimandi.
11. Bara Hindu Rao.
12. Sadar Bazar.
13. Nabi Karim.
14. Qadam Sharif.
15. Ram Nagar.
16. Paharganj.
17. Model Busti.
18. Manakpura.
19. Shahdara Town.

(c) District Centres and proposed Central Business Districts in Shahdara and Karol Bagh.

The F.A.R. and maximum coverage for flatted factories and Government offices in District Centres have been stated separate-

ly. The provisions below apply to the retail, commercial and service industrial areas which should be worked out as a composite scheme. The coverage is for the whole commercial area and not for plots.

F.A.R.	150
District Centres upto 25 acres.	Maximum coverage on ground floor including covered parking. 30%
District Centres more than 25 acres.	Maximum coverage on ground floor including covered parking. 25%

Semi-basement for parking, servicing and storage may be permitted. This should not exceed ground floor coverage, and should not be taken into consideration in F.A.R. calculation.

(d) Community Centres and retail centres shown in the Plan.

F.A.R.	100
Maximum coverage on ground floor	35%

(e) Neighbourhood shopping centres.

F.A.R.	100
Maximum coverage on ground floor	40%

V. Wholesaling:

F.A.R.	150
Maximum ground floor coverage]	50%

Basement allowed as in commercial and retail areas.

Minimum set back.

Front	25 feet
Rear	15 feet
Sides	15 feet

VI. General Warehousing, Storage etc.

F.A.R.	150
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Maximum ground floor coverage	60%
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Minimum set back.

	For plots below ¼ acre.	For plots ¼ acre to 1 acre.	For plots above 1 acre
Front	15 feet	25 feet	50 feet
Rear	15 feet	15 feet	25 feet
Sides	Optional	15 feet	15 feet.

Basement allowed for parking, servicing and storage should not exceed ground floor coverage. Not counted for F.A.R. calculations.

Special consideration for F.A.R. coverage, set backs, parking etc. will be specified for special trades like grains, oil, timber and other building materials.

VII. Industries and Manufacturing:

(a) Flatted Factory (in central areas).

Minimum plot area	one acre
Maximum No. of floors	6
Maximum coverage	40%
F.A.R.	150

The minimum number of floors allowed is two. A basement, not exceeding ground floor coverage, is allowed for storage and

servicing only and will not be taken into account in floor area ratio calculations.

Minimum set back.

Front	50 feet.
Rear	50 feet
Sides	20 feet.

(b) Industrial-cum-Work Centre

(In District Centres and in outlying areas)

Minimum plot area	two acres
Maximum No. of floors	10
Maximum coverage	33-1/3%
Floor area ratio	120

The minimum number of floors allowed is two. A basement, not exceeding ground floor coverage, is allowed for storage and servicing only and will not be taken into account in floor area ratio calculations.

Minimum set backs as for flatted factory above.

(c) Special Industry.

Minimum plot area	two acres
Maximum coverage	15%
Maximum height	60 feet.
Floor area ratio	25

Basement allowed as in flatted factory.

Minimum set back.

Front	100 feet
Rear	50 feet.
Sides	20 feet.

(d) Light Industries.

Minimum plot area	400 sq. yards
Minimum frontage	40 feet
Maximum plot area	two acres

(May be relaxed in special cases upto 7 acres).

The following sliding scale of coverages and floor area ratios is prescribed. A basement will be allowed as in the case of a flatted factory.

Plot area in acres	Maximum plot coverage	F.A.R.
(1) 400 square yards to 1.00 acre.	50%	60
(2) Above 1.00 acre to 3.00 acres	45%	60
(3) Above 3.00 acres to 7.00 acres	40%	50

Minimum set backs

	For plots below 0.25 acre.	For plots 0.25 acre and above upto 1 acre.	For plots above one acre.
Front	15 feet	20 feet	50 feet.
Rear	15 feet	15 feet	50 feet
Sides	Optional	15 feet on one side and 10 feet on the other.	20 feet

(e) Service Industries:

Same regulations as for light industries.

(f) Extensive Industries.

The following sliding scale of coverages and floor area ratios is prescribed.

Plot area in acres	Maximum plot coverage	F.A.R.
(1) 0.25 to 1.00	50%	50
(2) Above 1.00 to 3.00	45%	45
(3) Above 3.00 to 7.00	40%	40
(4) Above 7.00	30%	30

A basement will be allowed as in the case of a flatted factory.

Minimum set backs :

	For plot size upto one acre	For plot size above one acre
Front	20 feet	50 feet
Rear	15 feet	50 feet
Sides	15 feet on one side and 10 feet on the other.	20 feet

VIII. Institutional Uses*:

	For plot size upto 2 acres	For plot size above 2 acres
Maximum coverage including covered parking	33-1/3%	25%

*F.A.R. will be determined on the merits of each individual case depending upon the location and the nature of use.

B. SUB-DIVISION REGULATIONS

1. NATURE OF REGULATIONS :

The purpose of these regulations is to guide the development of the new areas in accordance with the Land Use Plan. As long as this is done along sound planning principles with adequate space standards, the future of the city is assured. This will obviate the necessity of costly corrective measures which would be necessary if sub-standard growth is allowed to take place. While the requirements regarding water supply, sewerage, grading and surfacing of streets, street lighting etc. will be governed by municipal bye-laws, the sub-division regulations here will be confined to standards for street widths and community facilities which are laid down as a sliding scale according to the density.

2. DEVELOPMENT ZONES :

For planning purposes Delhi has been divided into eight Planning Divisions. These are based on the physical features, historical growth, character of development, intensity of land use and the circulation pattern. The purpose in making these divisions is to have more or less self-contained units for purposes of living, employment and recreation. The Division boundaries overlap municipal boundaries.

These Divisions are too large an area for which to prepare development plans. Portions of it may not be developed for the next 10 to 15 years. Hence to obtain workable units, the planning divisions have been further sub-divided into 136 development zones as shown in the accompanying map. Change in land use, existing physical features, railway lines and major arteries act as boundaries for the zones. Municipal boundaries, election and census wards have also been taken into consideration in drawing up these boundaries though they have not been a decisive factor in their delimitation. The "Development Zones"

are not to be confused with "Use Zones" referred to earlier.

Planning Divisions		No. of Development zones
A	Old City	28
B	City Extension	7
C	Civil Lines	20
D	New Delhi	21
E	Shahdara	16
F	South Delhi	19
G	West Delhi	17
H	West Yamuna Canal or North West Delhi	8
TOTAL		136

3. ZONAL DEVELOPMENT PLANS :

After the Master Plan is sanctioned, all new developments shall take place according to Zonal Development Plans which shall show the following features in broad outlines:—

- (a) Approximate boundaries of Residential Planning Areas or neighbourhoods along with the gross residential density of each neighbourhood.
- (b) Major internal roads and trunk services.
- (c) Community Centre and Residential Planning Area Centre.
- (d) Approximate locations of High Schools and Primary Schools.
- (e) Neighbourhood parks.

This is to insure that the future development is a healthy one, with provision made for community facilities and services. Only by providing these will the community function and grow up in a manner that will help avoid future slums and social imbalances.

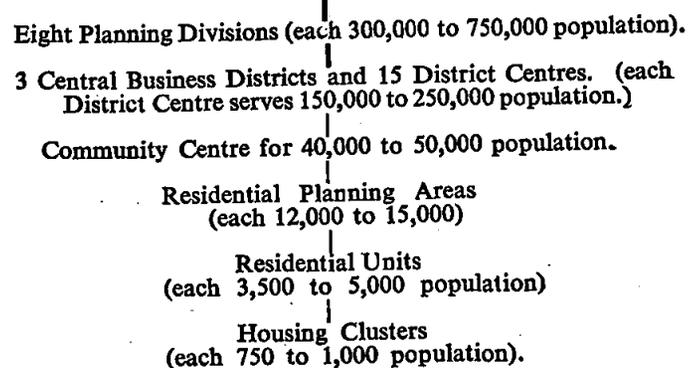
4. COMMUNITY STRUCTURE :

The pattern of self-contained planning divisions has been conceived from the bottom upwards. The lowest tier in the urban complex will be the "housing cluster" containing 750 to 1000 population. These clusters roughly correspond to the traditional "Mohallas" or "kuchas" in the Old City and, in fact, is found in its rudimentary form in almost all of the Indian cities and towns. It will have as its nucleus a nursery school with a tot lot. These housing clusters or "Mohallas" grouped together around a primary school and convenience stores with a small park will form a "residential unit" containing a population of between 3500 to 5000 people.

However, for purposes of a wider range of community activities, the "residential planning area" of 12,000 to 15,000 population (containing roughly 3000 families) is envisaged, which will have for its focal point a high school and a community hall with adequate neighbourhood shopping for the day to day needs. For the provision of additional facilities such as a health centre, library, cinema, better shopping and recreation centres, three residential planning areas have been grouped to form what is called a community with a "Community Centre".

Several of these communities have been grouped to form a District with a "District Centre". This is a composite retail shopping centre with commercial and service uses. In some cases they will have a small area for Government Offices and an industrial work centre to provide employment. This will serve a population ranging from 150,000 to 250,000.

URBAN DELHI



The District Centres have been shown in the Land Use Plan. In the Zonal Development Plans, the community centres will have to be shown, as also the residential planning area centres. Also, high schools, residential planning area parks and primary schools have to be shown. The other facilities listed in the standards will have to be shown in detailed layout plans.

5. STANDARDS FOR 15,000 POPULATION :

The basis on which the standards have been arrived at is fully discussed in the chapters on "Education, Recreation etc." and "Housing and Neighbourhood" in the work studies. Here only the standards are given. Standards for the Old City are given separately.

A variation upto 5 per cent. either way of the unit standards (plot sizes for schools, health centres, etc.) of community facilities will be allowed.

Pre-primary schools:

Sites will have to be reserved for 10 pre-primary schools varying from 0.2 to 0.75 acre each, according to density varying from 200 to 50 persons per acre. Optimum size of schools is 75 students.

Basic primary schools :

There will be 4 schools for the age group 6 to 14, the optimum size being about 600 students. The size will vary from 1.5 to 2.5 acres for densities varying from 200 to 50 persons per acre. Total covered area is about 15,000 sq. ft.

Higher Secondary schools :

This will have overlapping age-groups with basic primary schools viz. 11 to 14. So the students attending this will be in the age group 11 to 17, the optimum size being about 1,000 students. There will be one school of size varying from 5 to 10 acres for densities varying from 200 to 50 p.p.a. Total covered area is about 35,000 sq. ft.

Table 1 : Standards for size of schools (except Old City)

Gross Residential density	Higher Secondary School for 1,000 pupils		Basic Primary school for 600 pupils		Pre-primary School for 75 pupils	
	Persons per acre	Acres Storeys	Acres Storeys	Acres Storeys	Acres Storeys	
*25	12.00	1 to 2	4.0	1	1.0	1
50	10.00	1 to 2	2.5	1	0.75	1
60	10.00	1 to 2	2.5	1 to 2	0.75	1
75	8.00	2 to 3	2.5	1 to 2	0.50	1
100	7.00	2 to 3	2.0	1 to 2	0.50	1
125	6.00	3 to 4	2.0	2 to 3	0.25	1
150	6.00	3 to 4	2.0	2 to 3	0.25	1
200	5.00	4	1.5	3	0.20	1

Parks and open spaces:

District Parks have been shown in the Land Use Plan. In addition, local parks and playgrounds have to be shown in zonal

*There are no new areas under a density of 25 p.p.a. and the standards given above pertain to existing areas, which may, at a later stage, be re-developed.

and detailed plans. The standards are on a sliding scale and vary with density.

Table 2: Standards for parks and playgrounds for 15,000 population (except in Old City)

Gross residential density	Parks	Playgrounds	Tot-lots	Total open space
Persons per acre	acres	acres	acres	acres
25	19.50	9.00	1.50	30.00
50	16.50	9.00	1.50	27.00
60	14.50	9.00	1.50	25.00
75	14.50	7.00	1.25	23.00
100	14.25	6.00	1.25	21.50
125	10.00	4.00	1.00	15.00
150	10.00	4.00	1.00	15.00
200	9.00	2.50	0.75	12.25

NOTE.—Area under neighbourhood parks will be shown in Zonal Development Plans, whereas local parks, playgrounds and tot-lots will be shown in the detailed layout plans.

Shopping:

“District Centres” have been shown in the Land Use Plan and will have 200 to 350 shops for 1.5 lakhs to 2.5 lakhs population. A few “Community Centres” which serve 40,000 to 50,000 population have also been shown. Others will have to be shown in Zonal Development Plans. These will have 80 to 100 shops. The next level is local shopping at the “Residential Planning area centre” of about 15 to 20 shops to cater for 12,000 to 15,000 population. Then there would be 4 to 6 shops called “convenience shopping” for 3,500 to 5,000 population.

Table No. 3 gives the various shopping centres.

Table 3 : Shopping and other Facilities and the various Tiers of Planning Areas.

Pop. 1,50,000—2,50,000	Pop. 40,000—50,000	Pop. 12,000—15,000	Pop. 3,500—5,000	Pop. 750—1,000
DISTRICT CENTRES	COMMUNITY CENTRE	RESIDENTIAL PLANNING AREA	RESIDENTIAL UNIT	HOUSING CLUSTER
Shopping 200 to 350 shops, flatted factories and service industries and Government Offices.	No. of shops 80 to 100, library, Religious Building. Cinema Petrol Pump (Service Garage). Shopping and service industries professional offices, Health Centre, Post Office and Telegraph Office, Telephone Exchange, Police Station, Fire Station and Electric Sub-Station.	Local shopping 15 to 20 retail shops plus service shops, professional offices. Community Hall. High School. Parks.	Convenience shopping. No. of shops 4 to 6 Primary School. Playgrounds.	Tot-lots. Nursery School.

Table 4 : Distribution of retail shopping areas in Zonal Development Plans.

Gross residential density		Community centre (Including shopping, service industries and garages, community facilities)		Residential Planning Area centre or local shopping (including community hall)		Convenience shopping in residential units (only shopping)	
p.p.a.	Acres	No. of shops	Acres	No. of shops	Acres	No. of shops	
25	15.0	80 to 100	1.75	15 to 20	0.50	4 to 6	
50	13.0	Do.	1.50	Do.	0.50	Do.	
60	12.0	Do.	1.40	Do.	0.50	Do.	
75	10.0	Do.	1.30	Do.	0.40	Do.	
100	8.0	Do.	1.10	Do.	0.30	Do.	
125	7.0	Do.	0.90	Do.	0.30	Do.	
150	7.0	Do.	0.90	Do.	0.30	Do.	
200	6.0	Do.	0.80	Do.	0.20	Do.	

Table 5 : Standards for other Community Facilities.

Description	Standard	Remarks
1. Post & Telegraph Office with delivery and booking.	6,000 sq. ft. floor space and 4 staff quarters for 100,000 population.	One to be located in one out of every two community centres.
1B. Telephone Exchange, units of 10,000 lines	Half acre.	To be located in community centres or in specific locations.
2. Electric sub-station	A plot 40' × 40' with storage space.	In shopping centres.
3. Health Centre. Out patients + 15 beds + staff quarters.	One acre for 22,000 population.	May be located in District or Community Centres or in Residential Planning Area centres.
4. Police stations with staff quarters	1.5 to 2.5 acres for 75,000 to 100,000 population. Size of plot depends on density and number of storeys.	To be located in District Centres or in one out of two community centres.
5. Cinemas	One No. for 50,000 population, size varying from 0.50 to 0.75 acres for 500 capacity with essential parking facilities. For larger capacity more area is required.	To be located in District and Community Centres.
6. Fire Station with staff quarters	1.5 to 2.5 acres within 3 mile distance.	To be located in District or Community Centres.
7. Religious Buildings	Half an acre for 15,000 population.	In Residential Planning Area centres.
8. Community Hall and Library	For 15,000 population.	In Residential Planning Area centres.
9. Petrol pumps, service industry and service garages.	With suitable parking areas.	In District and Community Centre.

Streets.

The amount of land required for streets will depend upon the type of housing development proposed in the detailed lay-out plans. To guide these along desirable lines the percentage of dwelling units or community service personnel, detached and semi-detached plots, row housing and multi-family apartment housing, various densities have been given in Table 9. The

percentage of land in streets can be reduced considerably by having larger areas in group housing and multi-family apartments rather than in individual plots. Hence, two sets of percentages have been given in Table No. 8, for streets and for area available for residential use. The more area is used for streets, the less is available for residential use. The following standards for streets are laid down in Table 6.

Table 6: Streets in Residential Areas.

1. Cul-de-sac	30 ft. rt. of way	Maximum length 500 ft. with sufficient turning radius.
1a. Loop street	30 ft. rt. of way	Maximum length 1500 ft.
2. Service lane	20 ft. rt. of way	Maximum length 1000 ft.
	15 ft. rt. of way	Upto 500 ft. length.
3. Residential streets	45 ft. rt. of way	
4. Collection street	60 ft. rt. of way	
5. Feeder	80 ft. rt. of way	

NOTE.—The provision regarding width of cul-de-sac, loop streets and residential streets will not apply to low cost housing schemes sponsored by Government, semi-Government and other public bodies,

Special Space Standards.

In view of the extreme difficulty in finding enough land for community facilities space standards are relaxed for the Old City. Table No. 7 gives the space standards. Schools etc. may be started by the Municipal Corporation on an *ad-hoc* basis

until zonal development plans are prepared for these areas. Also construction of school buildings may be started on such area as is immediately available and the area increased subsequently to the standard laid down, as and when it becomes practicable.

Table 7 : Special Space Standards for the Old City.

(Walled City, Pahar Ganj, Motia Khan, Qadam Sharif, Sadar Bazar, Subzi Mandi, Patel Nagar and Karolbagh Areas.)

Description	Standard for 1st stage	Ultimate size	REMARKS
Higher Secondary Schools	0.5 acre	1.5 acres	This standard is for a school of 1,000 students to serve 15,000 population. For 500 students, the minimum first stage area could be 0.25 acre. The covered area could be 50% if the entire ground floor was available as playground; otherwise the built up area should not exceed 33½%. The school may be used as a community centre also.
Primary School	0.25 acre	0.75 acre	This standard is for a school of 600 students to serve 3,750 population. For 300 students the minimum first stage area could be 0.125 acre. Percentage covered area to be same as for Higher Secondary Schools. It may also have a nursery school attached.
Open space	0.25 acre per 1,000 population.	0.30 acre per 1,000 population.	The open spaces should, as far as possible, be provided near schools. Minimum plot area of an open space should be 200 sq. yds.
Health Centre	300 sq. yds. per 22,000 population.	300 sq. yds.	100 sq. yds. of built up area with 3 storeys. Total covered area 300 sq. yds.
Police Station	1.5 acres per 75,000 population.	1.5 acres.	
Fire Station	1.5 acres per 1,00,000 population.	1.5 acres.	

NOTE : It must be stated that this table is a guide only but the competent Authority concerned may relax to the extent necessary according to circumstances.

Table 8 : Suggested Unit Requirements for Residential Planning Areas
 Residential Planning Area of Population 15,000 with one Higher Secondary School

UNIT LAND AREA REQUIREMENTS																								
COMMUNITY FACILITIES AND SERVICES																								
Gross Density	Residential (persons per acre)	Total Area Required		Higher Secondary Schools (one)		Basic primary Schools (4 Nos.)		Nursery (10 Nos.)		Sub-Total		Parks and Playgrounds		Shops & Other Commercial establishments		Other Community Services		Total community facilities and services		Streets and roads		Area under residential plots		Average plot area per family (sq. yds.)
		Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
25	. . .	600.0	100.0	12.0	2.0	16.0	2.7	10.0	1.6	38.0	6.3	30.0	5.0	2.9	0.5	3.7	0.6	74.5	12.4	90.0	15.0	435.5	72.6	632
50	. . .	300.0	100.0	10.0	3.3	10.0	3.3	7.5	2.5	27.5	9.2	27.0	9.0	2.5	0.8	3.5	1.2	60.5	20.2	{ 30.0 60.0	10.0 20.0	209.5 179.5	69.8 59.8	304 261
60	. . .	250.0	100.0	10.0	4.0	10.0	4.0	7.5	3.0	27.5	11.0	25.0	10.0	2.5	1.0	3.25	1.3	58.25	23.3	{ 28.0 55.0	11.2 22.0	163.75 139.50	65.5 54.7	238 206
75	. . .	200.0	100.0	8.0	4.0	10.0	5.0	5.0	2.5	23.0	11.5	23.0	11.5	2.0	1.0	3.0	1.5	51.0	25.5	{ 24.0 45.0	12.0 22.5	125.0 104.0	62.5 52.0	182 151
100	. . .	150.0	100.0	7.0	4.7	8.0	5.3	5.0	3.3	20.0	13.3	21.5	14.0	1.5	1.0	2.5	1.7	45.5	30.3	{ 18.0 33.7	12.0 22.5	86.5 70.8	57.7 47.2	126 103
125	. . .	120.0	100.0	6.0	5.0	8.0	6.7	2.5	2.1	16.5	13.8	15.0	12.5	1.5	1.2	2.0	1.6	35.0	29.2	{ 16.0 30.0	13.3 25.0	69.0 55.0	57.5 45.8	100 80
150	. . .	100.0	100.0	6.0	6.0	8.0	8.0	2.5	2.5	16.5	16.5	15.0	15.0	1.5	1.5	2.0	2.0	35.0	35.0	{ 15.0 25.0	15.0 25.0	50.0 40.0	50.0 40.0	73 58
200	. . .	75.0	100.0	5.0	6.7	6.0	8.0	2.0	2.7	13.0	17.3	12.2	16.4	1.3	1.6	1.5	2.0	28.0	37.3	{ 11.3 18.8	15.0 25.0	35.7 28.2	47.6 37.6	52 41

Table 9 : Suggested Housing Type for Various Densities within a Residential Planning Area (15,000 population).

In Area with Gross Residential Density (persons per acre)	Percentage of Housing Units to be provided for			
	Service personnel family housing e.g. Dhobis, Janitors, Jamadars, Malis, domestic service	Detached and semi-detached housing	Row Housing	Multi-family apartments
25	5%	80%	10%	5%
50	5%	70%	15%	10%
60	5%	50%	30%	15%
75	5%	35%	40%	20%
100	5%	25%	45%	25%
125	5%	25%	45%	25%
150	5%	15%	40%	40%
200	5%	10%	25%	60%
Above 200	5%	5%	15%	75%

NOTE:—(1) Wherever areas have been earmarked for low income group housing or for the "Jhuggi and Jhonpari" Scheme, they should be integrated with the neighbourhood and the community facilities provided should take them into account.

(2) The above proposals are indicative only and not mandatory.

APPENDIX I

POLICY NOTE ON INDUSTRIES.

This note presents the general back-ground and some factors which have a significant bearing on formulating a policy on the provision and location of industries in Delhi Region.

1. Existing Situation.

According to 1951 Census approximately one-sixth of the economically active population of Delhi was engaged in manufacturing as a principal occupation. Since that time manufacturing employment in medium and large scale industries has increased by about 40 per cent and on the basis of the National Sample Survey of the small-scale industries in 1954, it may tentatively be concluded that there has been a similar increase in small scale and handicraft employment.

Due to an abnormal influx of population immediately after the partition of the country, and subsequent increase in Central Government activities, there is a considerable number (estimated to be nearly one lakh) of people engaged in building construction. The latest reports from the Bureau of Economics and Statistics, Delhi State, show that there are in all 783 factories; of these only 6 factories employ more than 1,000 workers and there are only 67 firms which employ more than 100 workers.

Compared with other metropolitan centres, Delhi's organized industry is relatively small. The major sources of employment are government, trade and services, and to a considerable extent, manufacturing employment is in trades which serve the local population. There is, however, a large unorganized employment in small industries and handicrafts. The organized

industrial sector which serves a market larger than Delhi has also been growing steadily in recent years.

There is every likelihood that considerable further growth may be expected in the governmental, professional and service industries sector in Delhi. As a national capital, the city is certain to attract more cultural and professional activities, and as the major commercial centre in North-West India, Delhi is likely to expand and improve its trading sector. Many of these activities will bring relatively high income people to Delhi and this, in turn, will stimulate retail trade and a multitude of personal services.

It is, however, desirable to prevent too rapid a growth of Delhi since this would increasingly tax public utilities, water supply and sewage system, electric power supply, and other community facilities such as schools, parks, playgrounds which are already in short supply.

During the next two decades, however, the increase in population is bound to generate the need for certain essential services, additional consumer goods, and industries required to maintain a big metropolitan centre like Delhi. Considering the relatively low proportion of 17.3 per cent* people engaged in occupations related to industries at present, a certain amount of industrialization is, however, desirable.

*A study of 77 largest Indian cities reveals that a city tends to show predominantly industrial character when more than 30% of its working population becomes engaged in industrial production.

At present there is considerable unemployment, and with the easing up of the unusual building activity in the next ten or fifteen years, it is likely that unemployment may further increase unless other avenues of employment for the building workers are opened.

Delhi is now the third largest urban centre in India, and since it is the National Capital, and a centre for many specialized business, cultural and educational activities, the level of average income in Delhi is probably somewhat higher than in most other Indian cities. This consequently means that there is a relatively greater demand for a variety of consumer goods in Delhi. Since, in many consumer goods industries, the cost of shipping of finished products is considerably higher than the cost of shipping the raw materials, it may be economical to establish certain industries, the products of which are mainly consumed in Delhi.

On the basis of these considerations it may be said that a certain degree of industrialization would be desirable both economically and socially. Even if the percentage of people engaged in industry would increase to 25 per cent, it would not change the basic character of the city. It would not be desirable to plan Delhi as a major industrial centre, but it can be said that 25 per cent of working population in industries properly planned and located would not spoil the pleasantness and dignity of a National Capital. Quite aside from any increase in the percentage of industrial workers, it may be expected that the manufacturing employment in Delhi will increase very substantially as a result of the increase in population.

It should further be noted that in the past only a small portion of the industrial working force has been employed in large scale industry. Probably not more than 20 per cent of all per-

sons in livelihood class V are in relatively large plants, the rest being accommodated in small and even minute enterprises. Policies with respect to the provision of industrial land may, therefore, be based on the expectation that small and medium sized industries will grow, and that in time the bulk of manufacturing employment will be shifted out of handicraft and very small shops into the organised sector of manufacturing. In this case there need not be any growth of very large manufacturing plants employing over 500 employees in the immediate urban area.

II. Considerations for Future Industrialization :

Having decided that a certain amount of industries would be feasible in Delhi, the second question is to examine the considerations which should govern the policy of industrial establishment and location. Following are some of the major points.

1(a) Existing industries should not be discouraged or expelled; attempts should be made for their better and more efficient operation.

(b) In case of objectionable industries or those located in residential or congested areas, special attempt should be made to induce them to move out from congested areas into specified industrial areas.

2. In allowing new industries, preference should be given to industries which are essential for either feeding, servicing or maintaining Delhi's population.

3. The relatively high level of income in Delhi would make it economical that certain types of consumer goods that are mainly consumed in Delhi may be produced in or around the city.

4. Industries associated with administrative, educational and cultural activities of Delhi may also be encouraged to a point (for example printing and publishing firms).

5. A good proportion of Delhi's industrial population possesses some highly developed skills, and in some cases, they have already established small scale plants which require highly skilled workers in such fields as metal working machinery, building, jewellery, wood-work, printing etc. Some of these plants also provide training for apprentices, and there seems to be a growing tradition of skilled occupations. There is every reason to preserve this, and expand this valuable resource of the country; such industries should be encouraged which demand special skills which are available in Delhi and produce commodities of high unit value.

6. Delhi is known for some of its traditional arts and crafts; many of them now unfortunately are still being done on cottage and domestic scale in miserable conditions. There should be no objection to their increase for they provide an additional income to the families. Such industries should be encouraged on co-operative lines.

7. Especially since Partition Delhi has become a centre of industrial development based largely on industries employing under 500 people and on very vigorous individual initiative. This growing industry makes a strong contribution to national economic development. In allocating space for industries, preference should be given to those firms which are now inadequately housed in congested locations and which need room for adequate growth. Provision should also be made for rehousing very small industries presently in mixed land uses in the old City.

8. Present plans for water supply and electricity supply by the Delhi Municipal Corporation indicate a probable continued shortage of these two basic services. It follows, therefore, that unless the water and power situation improves, industries using

large amounts of power and water should be discouraged from locating in Delhi.

9. In general, Delhi is not a suitable location for heavy industries and for large self-contained industries employing thousands of people. It is also undesirable to locate within the city industries creating problems of waste disposal, smoke fumes, water pollution, etc.

10. The location in Delhi of new industries employing more than 500 workers should be carefully considered and it may be advisable to limit them to the Ring Towns and the National Capital Region. The availability of industrial land in Delhi being limited, industries requiring large areas should also be excluded.

11. It is desirable that industries should provide adequate housing to its employees and the related community facilities.

III. Creation of Employment Opportunities Around Delhi

At present Delhi is the largest population centre in North-West India, and therefore, is a powerful magnet for attracting people from various parts of the country and particularly from the adjoining States. There is a natural tendency of migration from rural areas and mostly it is unskilled labour. Some studies done by the Delhi School of Economics and others show that migration to Delhi is relatively greater from Rajasthan and Southern Punjab than from West U.P. or Northern Punjab. A feasible way to discourage excessive migration to Delhi is to establish employment opportunities around Delhi in the Ring Towns especially in the directions where most of the people come from.

IV. The following are illustrative lists of industries that may be allowed in the various zones of urban Delhi. It also has lists of large scale and obnoxious industries that need to be kept out of urban Delhi. It may be pointed out that conditions indicated in each case are for general guidance.

Schedule of Industries

'Use Zone' in MASTER PLAN	Location	Type of Industries	Conditions to be fulfilled
1	2	3	4
<p>I. "Flatted" factories and "Work-cum-industrial centres".</p>	<p>In the areas shown in the Master Plan in the urban core and District Centres as listed in the chapter "Land Use Plan" and other specific sites mentioned therein.</p>	<ol style="list-style-type: none"> 1. Bread and bakeries. 2. Confectionary, candies and sweets. 3. Biscuit making. 4. Ice, ice-cream and creamery. 5. Cold storage (small scale). 6. Aerated water and fruit beverages. 7. "Atta chakkies" with power. 8. Tailoring and garment making. 9. Handlooms. 10. Hats, caps, turbans including embrioderies. 11. Hosiery including knitted garments. 12. Gold and silver thread, Kalabattu, zari work. 13. Shoe lace. 14. Toy making (earthen, paper, wooden, plastic, metal and tin). 15. Cotton and silk cordages, twine thread and threadball making. 16. Velvet embroidered shoes. 17. Webbing (narrow fabrics) embroidery, lace manufacturing. 18. Ivory carving. 19. Artwares, and silk screen printing and batik work. 20. Jewellery, gold ornaments and silverwares. 21. Wood and stone carving. 22. Electroplating, minaplating, engraving. 23. Photographs, painting (including sign-board painting). 24. Mirrors and photo frames. 	<p>Only small scale industries are allowed employing not more than 20 workers with power of 10 H.P. or 40 workers without power. Some of the industries like foundries in repair workshops and metal works should be allowed only ground floors so as to avoid nuisance to other industries in the same building</p> <p>Each industry to be permitted is subject to its performance characteristics namely:</p> <ol style="list-style-type: none"> 1. noise 2. vibration. 3. smoke. 4. dust. 5. odour. 6. effluent. 7. general nuisance.

25. Umbrella assembly.
26. Bamboo and cane products.
27. Sports goods.
28. Cardboard box and paper products including paper mache.
29. Stationery items including educational and school drawing instruments.
30. Furniture making (wooden and steel).
31. Cotton and silk printing.
32. Printing, book binding, embossing, photogramme etc.
33. Small domestic appliances and gadgets (room heaters, coolers, hot-plates, irons, lamps etc.).
34. Zip Fastners.
35. Musical instruments.
36. Optical lense grinding, watch & pen repairing.
37. Rubber stamps.
38. Manufacturing of trunks and metal boxes, suit-cases and small containers.
39. Steel wire products.
40. Sheet metals works.
41. Metal polishing.
42. Laboratory porcelain & dental porcelain wares.
43. Radio assembly and parts (small scale).
44. Florescent light fittings including neon signs.
45. Electric lamps, shades fixtures etc.
46. Automobile, scooter and cycle service and repair workshop.
47. Laundry and dry cleaners.
48. General jobbing and machine shops.
49. Iron foundries (only when related to other industries).

1	2	3	4
II. "Special Industry"	Near Engineering College in South Delhi.	50. Brushes (house-hold, sanitary and toilet). 51. Shoe making and repairing. 52. Leather goods. 53. Rings and eyelets. 1. Scientific, educational & industrial precision instruments. 2. Clocks and watches, photographic equipment. 3. Typewriters. 4. Electronic instruments (includes Transistors). 5. Calculating machines (small machines only).	Only 'assembly' of the components will be allowed. Strict performance standards should be enforced. Smoke noise, fumes or effluent of any kind should not be allowed. Extensive land-scaping with attractive building design is quite essential. The industry should preferably have research laboratories and training facilities. Minimum Site-2 acres for details of FAR, coverage etc. see Zoning Regulations.
III. "Service Industry"	Area west of Pusa Institute and near Cantonment. Roshanara Road Area near Moti Nagar Area near Tilak Nagar Area north of Wazirpur Area in the District Centres.	1. Bread and Bakeries. 2. Confectionary, candies and sweets. 3. Biscuit making. 4. Ice and ice cream and creamery. 5. Cold Storage, Refrigeration. 6. Aerated water and fruit beverages. 7. Atta chakkies with power. 8. Automobile, scooter and cycle service and repair workshops. 9. General jobbing and machine shops. 10. Blacksmithy. 11. Iron foundries in specific locations within the service area and subject to their 'performance characteristics'. 12. Furniture (wooden and steel). 13. Printing, book binding, embossing etc. 14. Laundry, dry cleaning and dyeing facilities. 15. Household utensil repair, welding, soldering, patching and polishing (Kalai). 16. Electroplating, minaplating & engraving.	Service industries listed here should be given preference. Industries listed under 'Flatted factory' and 'Light Industry' may also be allowed. In all cases the upper limit is industry employing not more than 50 workers with power and 100 workers without power. Maximum plot size 2 acres. Minimum plot area 400 sq. yards.

IV. "Light Industry."

Okhla Small scale Industries.
Industrial area on Mathura Road
including Housing factory, area.

Lawrence Road area.

Area between Ring Road and goods
avoiding railway line in N.W. Delhi

Area between G.T. Karnal Road and
Rly. line South of Ring Road.

Area between G. T. Ghaziabad Road.
and Rly. line near Jhilmila.

Area West of Anand Parbat

Sarai Rohilla, Najafgarh Road.

17. Photographs, painting (including sign
boards painting).

18. Metal polishing.

19. Vulcanizing and tyre retreading.

1. Fruit canning and preservation.

2. Blower fans

3. Brushes and brooms

4. Cement products.

5. Candles and wax products.

6. Chalk, Crayon, Artist's colour.

7. Tobacco products (cigarettes and bidis).

8. Cosmetic and hair oils.

9. Copper ware and utensils.

10. Cutlery.

11. Cycle parts and accessories.

12. Door and window fittings.

13. Drugs and medicines.

14. Lantern, torches and flash-lights.

15. Aluminium wares, cake and pastry
moulds.

16. Padlock and pressed locks.

17. Rope making (vegetable fibre).

18. Mathematical instruments.

19. Household kitchen appliances.

20. Builders hardware.

21. Tin products.

22. Optical frames.

23. Buttons, clips.

24. Shoe grindery.

25. Wax polishes.

26. Upholstery springs and other springs.

27. Precision instruments of all kinds.

28. Watch and clock parts.

29. Razor blades.

30. Safety pins.

31. Sewing Machines.

32. Sanitary (fittings) (not sanitary wares).

All uses allowed in "Flatted Factory"
"Special Industry" or in "Service indus-
try" may also be allowed in this zone.
Type of industries listed here and
employing not more than 50 workers
with power or 100 workers without
power may be allowed. Maximum
plot area 2 acres. Minimum plot
area 400 sq. yards. The industry
should not be of the type that is likely to
require rapid expansion of plant in the
near future. It should not produce
excessive smoke and fume nuisance.
Maximum plot area in special cases
may be upto 7 acres.

33. Screws, bolts and nuts, pulleys, chains and gears.
34. Automobile parts and accessories.
35. Conduit pipe fabrication (not exceeding 2" dia).
36. Electrical appliances.
(Room Heaters, Irons and Room air coolers, small transformers, electric fans and fractional H. P. motors, cooking ranges, water heaters etc.)
37. Iron foundaries (small).
38. Electrical accessories.
39. Buckets and Metal containers.
40. Plastic jigs and fixtures, Metal embossing.
41. Industrial fasteners.
42. Oil stoves and pressure lamps.
43. Electrical fans.
44. Washing soaps.
45. Paper Mill (small scale).
46. Hand tools.

V. Extensive Industry

Between G.T. Karnal Road and Rly. line, north of Ring Road (North).

Between Rly line to Rewari and New Industrial Road (South-west).

Najafgarh Road (West).

1. Refrigerators and air conditioners.
2. Electric fans.
3. Manufacture of water proof textile products.
4. Type writer parts.
5. Gramophone parts.
6. Measuring and weighing machine.
7. Writing and marking ink.
8. Wooden structural goods.
9. Structural steel fabrication.
10. Sprayers (hand & foot).
11. Manufacture of duree and carpets.
12. Batteries and accessories.
13. Wire drawing.
14. Wire netting.
15. Vacuum flasks.

All industries allowed in flatted factory, Light industry and Service Industries and occupying one acre and above for new industry and half acre and above for industry to be relocated. Since the prevailing wind direction in the locations listed here is likely to cause nuisance to adjoining residential area, care should be taken to locate only those industries which do not cause nuisance or are not obnoxious to adjoining land use.

16. Saw mills and wood work.
17. Automobile parts and castings.
18. Umbrella ribs.
19. Small machines and machine tools.
20. Collapsible gates, railings and grills.
21. Expanded metal.
22. Veneer and plywood.
23. Automobile leaf springs.
24. G. I. Malleable pipe fittings.

V. Extensive Industry

North of Rohtak Road.

1. Ancillary industries of the Slaughter House.
2. Footwear.
3. Leather upholstery.
4. Other leather goods.
5. Edible oils and fats (Medium Scale).
6. Cattle feed.
7. Flour mills.
8. Toilet Soap.
9. Agricultural appliances and implements (medium scale).

All industries allowed in the above areas may be allowed here.

Extensive Industry

Okhla Industrial Area (south of small scale industries).

1. Acids and chemicals (small scale).
2. Steel re-rolling mills (small scale).
3. Textile mills (medium scale).
4. Disinfectants and insecticides (small scale).
5. Rubber and rubber goods (small scale).
6. Dyeing, bleaching, finishing and processing cloth (including mercerising, calendering, glazing etc.).
7. Printing inks.
8. Ceramics and potteries.
9. Concrete and mosaic products.
10. Plastic industries.
11. Glass factories (small scale).
12. Iron foundries (medium).
13. Electric motors, transformers, generators.

All industries allowed in other areas may be allowed here.

Some of the industries listed here are noxious but may be allowed as long as they are not on a large scale and have performance standards to keep nuisance to a minimum.

1	2	3	4
		14. Enamel ware. 15. Steel joining. 16. Builder's hardware. 17. Cycles, scooter parts and accessories. 18. Paints and varnishes. 19. Iron pipes (small size). 20. Hume pipes (small size). 21. Centrifugal pumps and small turbines. 22. Tarpaulin and tent cloth. 23. Galvanised buckets. 24. Fuel gases including by-products.	
Extensive Industry	South Shahdara.	All the above industries.	To enable relocation of existing noxious industries in this area restrictions are relaxed.
Extensive Industry	Mehpalpur Road as shown in Plan.	1. Processing of clay and other earths. 2. Pottery and ceramics.	Industries using largely local materials will be allowed.
VI. Mining and Extractive Industry	Mining area is shown in the Plan.	Mining of chalk, clay and other earths including processing.	No manufacture will be allowed. Mining is subject to any restrictions stipulated in other Acts.
Lime and Brick kilns.	Beyond half a mile of the 1981 urbanizable limits.	Excavation of pit sand, lime & clay and lime and brick kilns.	The excavation shall not exceed 8 ft.
Stone quarries and crushing	Beyond one mile of the 1981 urbanizable limits.	Stone quarries and crushing.	Subject to any restrictions under any other Act.

Undesirable Industries in Urban Delhi

Nature of Industry	Location	Type of Industries	Conditions to be fulfilled
Heavy and Large Scale Industries,		<ol style="list-style-type: none"> 1. Agricultural implements (large scale). 2. Structural Steel Fabrication (large scale). 3. Diesel Engines. 4. Electric wires and cables (large scale). 5. Refractories. 6. Borax. 7. Optical glass. 8. Sugar. 9. Vegetable (hydrogenated) oils (large scale). 10. Cement. 11. Glass (sheet). 12. Cotton textiles (large scale). 13. Woollen textiles (large scale). 14. Blast furnaces steel works, and rolling and re-rolling mills. 15. Bicycles (large scale). 16. Sewing machine (large scale). 17. Hume pipes. 18. Automobiles and coach building. 19. Locomotives and wagon manufacturing. 20. Aircraft Building. 21. General Industrial machinery (such as hydraulic equipment, drilling equipment, boilers, etc.). 22. Special industrial machinery. 23. Under frames and chassis. 24. Sluice gates and gearings. 25. Cranes and hoists. 	These should not be allowed to be located in urban Delhi. Some of these industries may be located in the Ring Towns and others in the towns of the National Capital Region.

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26. Lifts.
 27. Steel pipes and tubes.
 28. Wire ropes.
 29. Steel chains.
 30. Electrical Steel sheets and stampings.
 31. Steam Engines.
 32. Power Driven pumps and Pumping equipment.
 33. Tractors & Agricultural machinery (power driven).
 34. Industrial trucks, trailers, stackers, etc.
 35. Earth moving machinery.
 36. Air and gas compressor
 37. Conveyors & conveying equipment.
 38. Motor-cycles and scooters.
 39. Heavy Iron and Steel forgings.
 40. Foundries (heavy).
 41. Other primary metal industries e.g. cold rolled sheets, alloy steel etc.
 42. Telephone equipment.
 43. Water turbines.
-

Prohibited Industries in Urban Delhi.

Nature of Industries	Location	Type of Industry	Conditions to be fulfilled
Obnoxious and Hazardous industries		<ol style="list-style-type: none"> 1. Bone meal, bone grist and bone powder. 2. Leather tanning. 3. Glue and gelatine. 4. Animal fats. 5. Carbon black, bone black and lamp black. 6. Dye-stuffs and dye intermediates. 7. Reclamation of rubber. 8. Manufacture of industrial synthetic rubber. 9. Manufacture of industrial rubber goods. 10. Distilleries and breweries. 11. Power and industrial alcohol. 12. Acids and fertilisers. 13. Alkaline Chemicals. 14. Industrial gases. 15. Bye-products of petroleum (extensive) 16. Wood seasoning and curing. 17. Paper, pulp and paper board (including straw boards). 18. Manufacture of newsprint. 19. Printing ink. 20. Manufacture of fire works. 21. Manufacture of explosives and ammunition. 22. Disinfectants and insecticides (large scale) 	<p>These industries on a large scale are associated with undesirable features such as stench, smoke, unpleasant or injurious fumes, effluents and other hazards to the health and safety of the people residing in the neighbourhood. Hence, they should be kept out of Delhi Urban Area.</p>

APPENDIX II

SUMMARY OF RECOMMENDATIONS

1. **Union Territory of Delhi.**—The population of the Union Territory of Delhi which registered substantial growth in the last three decades is expected to be about 55 lakhs in 1981 if left to itself. It will, however, not be desirable to provide for such a big urban concentration. It is proposed to deflect some of the population into the Ring Towns so that the population in Delhi can be kept to a manageable limit, which would be in the neighbourhood of 46 lakhs for urban Delhi and about 50 lakhs for the Union Territory of Delhi.

2. **The Delhi Metropolitan Area.**—The population of the Delhi Metropolitan Area, comprising the Union Territory of Delhi and the Ring Towns of Ghaziabad, Faridabad, Ballabgarh, Gurgaon, Bahadurgarh and Loni and certain rural areas, which was somewhat less than 21 lakhs in 1951, is expected to be close to 60 lakhs in 1981, of which 7,71,000 would be in the Ring Towns mentioned above, and 71,000 would be in Narela which is in the Union Territory of Delhi.

3. **The National Capital Region.**—The population in the area designated as the National Capital Region, comprising the Union Territory of Delhi and the 8 adjoining Tehsils and 3 additional Tehsils of Meerut, Hapur and Bullandshahr, was 54 lakhs in 1951; it is expected to increase by more than 2.3 times and will, in 1981, contain a population of about 125 lakhs.

4. **Ring Towns.**—In order to plan for the balanced and integrated development of the Delhi Metropolitan Area and to control the growth of urban Delhi, it has been suggested that a number of towns located within a ring of about 25 miles

from Delhi should be developed to their optimum capacity by 1981. The population estimates for these towns (Narela, Ghaziabad, Faridabad, Ballabgarh, Gurgaon, Bahadurgarh and Loni) have been worked out on the basis of allotting a portion of Delhi's projected working force in manufacturing and Union Government employment to these towns. It may be possible to deflect roughly about 115,000 workers in manufacturing and 50,000 Union Government employees; which will provide an attractive economic base for the development of self-contained communities in these town-ships; in this way it may be possible to divert at least 4 lakh people from coming into the Delhi Urban Area. Under the general frame-work of development of various land uses suggested in the Plan, the Government of U.P. and Punjab, in which the Ring Towns are located, will have to prepare Master Plans for each of these towns. Detailed proposals have been made in the Plan for the town of Narela which is in the territory of Delhi.

Proposed Land Use : Urban Delhi :

5. **Urbanisable Limits.**—The topography of Delhi and other natural features limit the expansion of Delhi which can grow only towards the north-west and Shahdara, and to a limited extent towards the south. The proposed urbanisable limit of 1981 provides about 1,10,500 acres of land as against the present (1958-59) urbanised area of 42,700 acres.

6. The distribution of the total land available has been made keeping in view the future population and the activities for which space has to be provided. The functional relationship

between the various land uses has been maintained and residential land requirements have been related to work areas, shopping, recreation, circulation etc.

7. The entire urbanisable area by 1981 has, for planning purposes, been divided into eight planning divisions. Each planning division has been so selected that it reflects its own character, physical, social and cultural, as well as the pattern of land use. Each division is intended to be self-contained with a number of district centres and major work centres, community facilities and an adequate system of circulation. The proposed District Centres will have a college, a general hospital and a district park in its vicinity.

The eight Planning Divisions are sub-divided into 136 Development Zones in order to have workable areas for purposes of detailed planning.

8. *Rational and healthy development.*—The pressure of population and consequent haphazard and sub-standard development in Delhi is to be relieved by strengthening the economic base of the Ring Towns by planning industrial development and location of government offices there. Within Delhi the densities in the Old City are as high as 1,000 per acre while in other areas, namely in some parts of New Delhi, it is as low as 15 to the acre. A more rational distribution of densities is proposed through a gradual thinning of the former and by increasing the density through redevelopment of areas in New Delhi, viz., Mata Sundari Road, York Place and Gole Market. Density patterns are to be functionally related to the work centres, recreation areas and community facilities. In order to ensure healthy development, Zoning and Sub-division Regulations have been set down. These embody space standards for community facilities and services, and provisions regarding land use: density, coverage, floor area ratio, setback and other requirements. Such of these regulations as are mandatory should

be strictly enforced in regard to each kind of development and all the proposals in the plan are subject to those stipulations.

9. *Government Offices.*—The future of Delhi is envisaged as a major government centre but the increase in the proportion of government employment in the total employment is considered undesirable. The total acreage under government offices is to be 900 acres by 1981. The Central Secretariat Complex is to be developed to its maximum capacity of about 200 acres to accommodate about 80 thousand employees. Multi-storey office blocks in place of temporary barracks are proposed.

In addition to the present government work centres functioning in Parliament Street, Indraprastha Estate, Old Secretariat, Delhi Administration Offices, Supreme Court, N.D.M.C., Offices, Railway Offices and Corporation Offices, which will be developed to their optimum capacity the following major locations are proposed in the plan, namely, Lodi Road, west of Medical Enclave near Safdarjang Hospital, North Shahdara, South Shahdara, New Civic Centre on Circular Road and in some of the District Centres, notably in the 1,100 Acre Project and near Kalkaji.

10. *Industry & Manufacturing.*—A total area of about 5,800 acres is recommended for industrial use by 1981. Of this 3,600 acres will be for extensive manufacturing and are distributed at the following locations, namely, south of Okhla near the Marshalling Yard, Najafgarh Road area, between the railway line to Rewari and new Industrial Road, between Rohtak Road and the railway to Rohtak and north of railway line to Rohtak, between G.T. (Karnal) Road and railway line, Shahdara between new railway line and new Highway to Ghaziabad.

11. A total area of about 1,600 acres is proposed for light and service industries which would be generally small non-

nuisance industries that can operate near built-up areas with rigid enforcement of factory regulations. Development of small scale industries, of the type of the one at Okhla, should be encouraged in these areas. The major locations of these are at Lawrence Road, areas south of Ring Road and G. T. Road in the north-west, in Shahdara between G.T. Road and railway line, in Sarai Rohilla, on Mathura Road, areas to the west of Pusa Institute and near Anand Parbat.

12. An area of about 100 acres has been earmarked, near the proposed institutional areas in the south, for such special industries which will assemble precision instruments without causing any nuisance whatsoever. Research and training facilities should be encouraged in this area.

13. Industrial-cum-Work Centres are proposed at District Centres and at a few outlying areas. The total acreage is about 170 acres. These will be intensively developed, with three to four storey buildings, for locating small industries. Intensive use in "flatted factories" has been suggested within the core of the urban area, in such localities as Motia Khan, Jhandewalan, Thompson Road, Ajmere Gate, Roshanara Road, Sarai Rohilla, Birla Mills, D.C.M. area, Mori Gate, G.B. Road, and Shankar Market area. The total acreage is about 190 acres.

14. An area of about 350 acres has been earmarked for mining in the Mehpalpur area which is rich in pottery clay. Also a site of about 100 acres is recommended near the above mentioned site for pottery factories utilising this local raw material.

15. Lime and brick kilns and the removal of clay should be located beyond half a mile of the urbanisable limits of 1981. The stone quarrying and crushing area, however, should be located beyond one mile of the urbanizable limits.

16. Storage of building materials like iron, steel, timber, cement has been allocated about 400 acres of land in the major industrial areas.

17. *Commercial*.—Major commercial areas account for about 1,500 acres, excluding local shopping areas which are not shown in the plan but will be shown in detailed plans.

18. Chandni Chowk—Khari Baoli—Sadar Bazar will continue to be the Central Business District of Delhi. The existing hosiery and general markets north of Sadar Bazar and the existing wholesale market in dry fruits in Phatak Habash Khan, are to be retained but improved through proper planning and enlargement. It is recommended to redevelop the wholesale fruit and vegetable market in Subzimandi and in addition two more new sites, one near the Daya Basti Railway Station and the other near Okhla Railway Station, have been earmarked for this purpose. The existing wholesale grain market in Naya Bazar and G.B. Road are to continue but storage of food-grains is to be shifted to the warehousing areas shown in the plan. A new area for wholesaling of grain has been shown in the Teliwara area which is to be redeveloped after the relocation of the timber storage in the warehousing area. A wholesale cloth market will have to be redeveloped near the existing Krishna Market and Katra Neel, off Church Mission Road. The Connaught Place shopping centre is to be enlarged towards the east and south to have a total area of about 200 acres for general business and commerce and for retail trade as a Central Business District. In order to decentralise commercial activity, 15 District Centres and 13 Sub-District Centres have been proposed in the plan in addition to some small retail centres also shown in the plan.

19. *Warehousing & Mineral sidings*.—A total of about 750 acres has been earmarked in the plan for warehousing and depots. The timber trade now being carried on in the Old City should be relocated in West Delhi adjacent to the Railway Line

to Rewari. The grain storage will also be in this area. Three additional sites have been shown for oil storage, one on Rohtak Road, the second near the Palam Railway Station and the third in Shahdara. About 300 acres of land has been earmarked for the mineral sidings of the Railways near the Tughlakabad Marshalling Yard in the south, near Azadpur in the North and on the Rewari Railway Line in the West. One large railway siding has been proposed in U.P. contiguous to Shahdara to serve the whole of the urban area to the east of the Yamuna.

20. *Residential.*—There will be about 47,400 acres of residential land in Delhi to house the 1981 population of about 46 lakhs at an average residential density of 97 persons per acre. Large scale clearance and reconstruction is ruled out as an immediate possibility in the Old City because of the lack of resources and the low capacity of the people to pay rent. But the minimum community facilities and services and reasonable means of communication will have to be provided in this area. This will improve the locality and gradually help reduce congestion so as to serve a density of about 250 persons per acre. It is proposed to develop the Mata Sundari area at the density of 200 persons per acre and the Gole Market area at the density of 150 persons per acre. Other very low density areas in New Delhi like York Place and in Civil Lines will have to be judiciously planned to take more population without destroying the pleasant character of the areas. In the developing areas the densities range between 60 to 150 persons per acre, higher densities having been proposed near employment centres and lower densities on the periphery of the urban area.

21. A housing programme in a big way will have to be launched to meet the growing demand as well as some of the large back log. The present Busti dwellers will be provided for in developing areas where they will be integrated with the neighbourhood community. To counteract against squatting in Bustis, it is proposed to earmark reasonable areas in several

zones for the low income group people who migrate to Delhi from rural areas throughout the year. In view of their poverty, they should be permitted to construct very cheap houses on a proper layout with all the necessary reservations of site. The municipal services, which will naturally be the minimum, will have to be provided by public agencies.

22. Land acquisition by Government on a large scale has been recommended. The ownership of land by Government makes planning and the implementation of the plan easier and is imperative if slum clearance, redevelopment, subsidised housing and provision of community facilities according to accepted standards have to be undertaken, as, indeed they must be, in Delhi, in a determined way.

Community facilities & services

23. *Recreation.*—A system of linked open spaces and district parks has been worked out for the entire urban area of Delhi related to the proposed pattern of residential densities. Certain natural features like river front and the ridge will have to be developed in the course of years. Land under district parks will be about 18,000 acres. In addition there would be on an average 1.6 acres of local parks and playgrounds which are not shown in the plan. An area of about 8,200 acres is recommended for regional parks and reservations which need not be intensively developed at present but should be preserved as green areas.

24. In order to preserve land under intensive agriculture and to prevent the overspilling of premature urban growth, an inviolable green belt of agricultural land around the urbanisable limit of 1981 has been recommended in the plan.

25. *Education.*—A university centre in the south is proposed near the junction of Kitchner Road and Ring Road. Twenty-two sites of about 15 acres each, suitably distributed in develop-

ing areas, have been proposed for colleges to serve a population of 1.5 lakhs. It is further proposed that for every 4 or 5 colleges a university centre should also be provided, for which 30 to 40 acres have been reserved. The total area earmarked in the plan for education is 1,400 acres.

26. *Research & Educational Institutes.*—Land has been reserved for the expansion of Pusa Agricultural Research Institute and the Jamia Millia. Also a large area for an engineering college has been reserved. An area of about 600 acres has been earmarked in the south for educational and cultural purposes south-west of this college. Similarly another reservation of land of about 120 acres has been made north of Badarpur Road. The total land allocated in the plan for research and institutional use is about 2,900 acres.

27. A standard of one pre-primary school for 1,500 population and one primary school for a population of 3,750 and one higher secondary school for 15,000 has been recommended. The size of school sites varies for different densities.

28. Land has been reserved for 20 additional hospitals of about 15 acres each with 500 beds to serve 1,25,000 people. It is also proposed that in each planning division at least one hospital will have about 25 acres instead of 15 acres, so that it can offer specialised services not available in other hospitals.

29. Police Stations, health centres, fire stations, electric sub-stations, post and telegraph offices, telephone exchanges, community halls, community and neighbourhood shopping centres etc., for which standards have been prescribed in the Master Plan, will have to be shown in zonal plans and detailed plans. Recognising the importance of social and cultural activities, multipurpose community centres have been recommended to provide a framework within which the whole fabric of social activities may be inter-woven in the neighbourhoods so that the impersonal character of city life does not stifle the cultural life of the citizens. In

addition, it is proposed that new social and cultural buildings of national importance like conference and assembly halls, art galleries, convention halls, public auditoria, theatres and state guest houses, should be built by Government in the area stretching on either side of the Central Vista starting from Janpath. Other land reservations for cultural purposes have been made near Sapru House and near the proposed Municipal Corporation buildings opposite Ramlila Grounds. Yet another cultural centre is proposed in the Siri area where the State Governments may build cultural buildings in order to give a fillip to the song, dance, drama and other fine arts of the various States, which will help in the emotional and cultural integration of the Indian people.

30. *Public utilities and services.*—Active steps will have to be taken well-in-advance to secure the sources of water and power which are essential for the continuing growth of the Metropolis. Ways and means have been suggested for securing this and land reservations have been made for the expansion of the existing water works and for a new power house. Proposals to discontinue sewage overflows into the Yamuna have been recommended and adequate land has been reserved for treatment plants in different parts of the city.

31. Fifteen cremation grounds have been earmarked in the plan so that they are within a three mile radius of the residential areas. Sites for Muslim burial grounds have also been reserved.

32. It is recommended that presently cut up and low-lying land may be reclaimed by hygienically conducted sanitary earth fills of garbage.

Traffic & Transport.

33. *International Civil Airport.*—The International Civil Airport should be continued at Palam with suitable run-ways and terminal facilities for increased jet traffic unless Government decides to set up a separate airport. A site at Pasaunda in

U.P. is recommended as the best alternative site. It is also recommended that the Safdarjang Airport which is in the midst of heavily built up areas should ultimately be removed to join up with the ultimate International Civil Airport for Delhi. The Flying Club which is functioning on this site these days should also be shifted at that time.

34. *Railway Transport Recommendations.*—(i) It is recommended to shift the marshalling yards from New Delhi to Tughlakabad on the Agra line and connect these yards by a new bridge over the Yamuna River to the main line at Sahibabad. (ii) The metre gauge should be extended to New Delhi railway station which should be expanded and provided with engine turn round and stabling facilities. (iii) The Railways should provide more frequent and speedy regional services and encourage a system of bus feeder routes in co-ordination with road services. New railway stations have been proposed at suitable places and it has been recommended that the existing railway stations should be expanded with more platform and passenger facilities, and adequate provision for parking. In order to reduce the interstate traffic load, the expansion of smaller railway stations both for passengers and goods is recommended. (iv) Future electrification of the Delhi Terminal Area as far as Ghaziabad, Meerut, Faridabad and Sonapat should be anticipated. Until such time the problem of more passenger platforms at Delhi Main could be alleviated by the use of more double-ended diesel rail-cars to cut down platform occupancy time.

35. *Regional High-Way Network Proposals.*—(i) Peripheral all weather communication should be provided by converting the existing boat-bridge into concrete structures at Baghpat (between Sonapat and Meerut) and Jewar (between Palwal and Khurja) to relieve pressure on the existing Yamuna Bridge.

(ii) Additional links will be available with the completion of the proposed road bridges across the Yamuna near Humayun's Tomb and the Barrage-cum-Road at Wazirabad.

(iii) In order to construct by-pass roads to satellite towns the right-of-ways should be reserved now.

36. *Urban Road & Highway Development Proposals.*—(i) To foster the movement of fast and unobstructed traffic around the congested core of the city, the Inner Ring Road has been recommended with a right-of-way of 150'. Complete grade separation is recommended where the Inner Ring Road crosses the main arterials. Access to Inner Ring Road is restricted to a minimum of a quarter or half a mile distance.

(ii) The construction of an east-west connection between Queen Mary's Road and the National By-pass with 200' right-of-way is recommended to provide better access to the Tis Hazari Courts.

(iii) A new road from Circular Road following the alignment of Ranjit Singh Road, School Lane, and Keeling Road upto Parliament Street is recommended to augment limited access between Old and New Delhi. One more link connects Mathura Road to College Road and Ferozeshah Road.

(iv) Rohtak Road should be diverted along the southern banks of the Western Yamuna Canal, and north of the existing alignment to join the proposed Inner Ring Road.

(v) The proposed road over Wazirabad Barrage with a cantilever, adequate in width for pedestrian movement and cycle tracks, should be extended to the east to meet G. T. Road near Sahibabad and towards the west to meet G. T. Road near Badli.

(vi) Another road across the Yamuna near Humayun's Tomb will connect Delhi to Ghaziabad across the River Hindon.

(vii) Many of the existing important roads requiring widening of the right-of-way have been shown in the plan.

(viii) A system of streets in the Old City with minimum widening has been recommended and a detailed list and a map have been provided.

37. *Arterial Cycle Tracks.*—In addition to the improvement of the existing road marginal cycle tracks, arterial cycle tracks entirely separate from the carriage way have been recommended to avoid bottlenecks. These proceed from the Central Secretariat towards the south-east, south-west, north and westerly directions.

38. *Elimination of traffic bottlenecks.*—(i) Grade separations are recommended at railway road level crossings on important roads such as Rohtak Road, Patel Road, Link Road between New and Old Rohtak Roads and the Approach Road to the Okhla Industrial Estate. Queen Victoria Road joining the National Bye-pass and Mehrauli Road crossing the railway also require grade separation.

(ii) At every major intersection at grade, channelisation of traffic and traffic lights to replace inadequate roundabouts is recommended.

39. *Road-Transport Terminals.*—Suitable sites for bus passenger terminals and parking have been recommended south of Idgah, north of Central Road Research Institute, near Shahdara Railway Station and outside Kashmere Gate. An idle vehicle parking site between the National Bye-pass and the Western Bund of the Yamuna River has also been recommended.

40. *Goods Parcel Terminal & Parking.*—Suitable sites for truck terminals in the Motia Khan area and in Shahdara are recommended. Suitable sites for idle parking and servicing of trucks are recommended near Azadpur Police Station, near Nangal Power Station and near Okhla Industrial Estate.

41. *D.T.U. Bus Terminal.*—Two terminals, one near Connaught Place Extension and the other near Minto Bridge area are recommended for passenger buses. Off street loading stations and bus accumulation areas are recommended near important places like the Central Secretariat, Delhi Main Station, etc., and in District Centres and Central Business Districts.

42. *Future Mass Transit.*—Proposal to have an electric subway should be explored in the future. For the present the Ring Railway recommended with the local bus service should meet this demand for mass transit.

43. *Department of Traffic.*—The traffic problems of urban Delhi require a traffic department to deal with all matters in a comprehensive manner and to effect proper liaison between the traffic department and the police who will be in charge of enforcement of traffic regulations.

44. *Staggering of work hours.*—An important measure recommended for improvement in peak hour traffic in Delhi is staggering of work hours so as to distribute peak hour traffic load over a longer period.

45. *Urban Renewal & Redevelopment.*—(i) The major recommendation in this respect limits itself to giving only a sense of direction. It is conceived as a comprehensive activity to counteract functional obsolescence of the urban structures and of parts and elements of it.

(ii) As a result of socio-economic studies the built up areas should be identified as “conservation”, “rehabilitation” and “redevelopment” areas. This can be the basis of a system of priorities for action based upon scientific analysis rather than on *ad hoc* municipal action.

(iii) In order to relocate Busti dwellers, areas have been recommended so that they are an integral part of a neighbourhood. Also, in order to counteract against squatting in Bustis, as mentioned earlier, areas will be earmarked in newly developing colonies where sub-standard development will be permitted and cheap housing or huts will be encouraged for which purpose building bye-laws have been recommended to be relaxed. In addition, certain areas requiring redevelopment near the congested parts of the Old City like the Mata Sundari area are partly reserved for the relocation of slum dwellers.

(iv) It is recommended that a systematic weeding out of obnoxious industries and village-like trades should be undertaken. In the zoning regulations a time schedule for the removal of "non-conforming uses" stipulates the gradual elimination of these uses.

(v) Space standards for schools, open areas, etc. have been considerably lowered in order that there may be minimum dislocation of people and that existing available spaces may be made use of for such purposes. It is recommended to adopt a comprehensive system of building, health and other codes which prescribe adequate minimum standard of health, sanitation and safety. These have to be enforced with citizen participation to the fullest possible extent.

(vi) Further basic amenities like water, latrines and electricity, lacking in many of the areas, should be provided immediately

on short-term basis even if the area qualifies for redevelopment.

46. *Rural Delhi*.—Proposals have been made in the work studies in detail for rural areas for the provision of schools, roads, district shopping and other basic needs of the rural population. A number of "urban villages" for the relocation of milch cattle and dairymen now operating in the urban area, and other village-like trades and industries have been recommended.

The report is only preliminary in nature and attempts only broadly to formulate proposals for the provision of services and utilities in the rural areas. It will be necessary later to make comprehensive master plans for the villages also, indicating various kinds of land uses suggesting improvement of village *abadis* and with a view to strengthening the economic base of the rural areas.

GLOSSARY

<i>Abadi</i>	Settlement, habitation, sometimes also used for population	<i>Mamti</i>	A cabin like structure with a covering roof over a staircase and its landing built to enclose only the stairs for the purpose of providing protection from weather but normally not used for human habitation.
<i>Atta.Chakkie</i>	An indigeneous flour grinding mill		
<i>Bagh</i>	Garden		
<i>Barsati</i>	Covered space on the terrace used for shelter during rains	<i>Mandi</i>	A traditional wholesale market with storage and display space generally dealing in one type of commodity, like loha mandi (iron and steel market) lakkar mandi (timber market)
<i>Busti</i>	A cluster of sub-standard and temporary structures made of scrap material like, straw, mud, bamboo, wooden planks, thatched roof etc.		
<i>Dhobi</i>	Washerman	<i>Marg</i>	Road or street
<i>Duree</i>	A type of indigeneous rug or carpet usually made of cotton fibre—mostly hand-work	<i>Mandir</i>	Hindu place of worship, a temple
<i>Ghat</i>	River bank used for bathing	<i>Masjid (also Musjid)</i>	Mosque, a place of worship for Muslims
<i>Jhuggi-Ihonpari</i>	Hut made of straw, mud and bamboo	<i>Mohalla</i>	A traditional housing cluster generally in the older built up part of a city
<i>Kalai</i>	Nickel-plating of utensils	<i>Nagar</i>	Town or locality in a town
<i>Katra</i>	A cluster of tenements built around a courtyard, with common sanitary arrangements	<i>Pul</i>	Bridge
<i>Khoka</i>	A wooden stall of temporary nature used either for habitation or small shops.	<i>Qila</i>	Fort
<i>Kotwali</i>	City Police Headquarters	<i>Rashtrapati</i>	President of India
<i>Kucha</i>	A narrow alley with shops or tenements on either side	<i>Sarai</i>	Quadrangular inn (often used as a prefix or suffix to a place or locality)
<i>Mali</i>	Servant employed to tend a garden or park	<i>Subzimandi</i>	Wholesale fruit and vegetable market
		<i>Tehsil</i>	An administrative sub-division within a district
		<i>Udyog</i>	Industry or craft

INDEX

	PAGE No.		PAGE No.
A			
Agriculture :		Ballabgarh :	
—Green belt	(iii), 9, 34	—Land requirements	2
—Farms, space standards	59	—Population	1, 2, 86
—Use zone regulations	49, 59	—Proposed development as Industrial and Government Centre	2, 3, 86
Ahata Kidara	18	Bar Shabula	40
Ajmal Khan Park	33	Bazar Sita Ram	40, 56, 61
Ajmal Khan Road	12	Bela Road	(iii)
Ajmere Gate	17, 30, 40, 56, 61, 88	Birla Mills Site	18, 88
Aligarh	32	Bridges proposed over Yamuna	(iii), 25, 29, 32, 91
Alipur Road	24	Buddha Memorial Park	33
All India Institute of Medical Sciences	35	Bullandshahr	86
Ambala	25, 31	Bureau of Economics & Statistics	73
Anand Parbat	37, 88	Bustis, dwelling units	5, 6
Asaf Ali Road	12, 13	Busti squatters, relocation	(ii) 27, 89
Ashoka Hotel	14		
Azadpur	38, 89	C	
Azadpur Police Station	31, 92	Cantonment Area	78
B		Central Park	34
Badarpur Road	24, 90	Central Public Works Department	10
Badarpur Village	29	Central Road Research Institute	92
Badli	91	Central Secretariat	6, 9, 10, 11, 24, 30, 31, 87, 91, 92
Baghpat	32, 91	Central Vista	(iii), 33, 38, 90
Bahadurgarh :		Chandni Chowk	(iii), 8, 12, 15, 30, 40, 56, 61, 88
—Land requirements, proposed	2	Chandrawal	36
—Population	1, 2, 86	Chawri Bazar	12, 40
—Proposed development	3, 86	Chelmsford Road	29
—Ring Town, tentative master plan	1, 2	Chitli Qabar Road	40
Bahadurgarh Road	15	Chitra Gupta Road	30

	PAGE No.
Church Mission Road	15, 29, 40, 88
Chowk Naya Bans	4
Circular Road	(ii), 11, 29, 87, 91
Circulation :	
—Old City	27
—System, Planning of	8
Civil Lines Division	26, 33, 35, 36, 64
College Road	(iii), 29, 87, 91
Commercial :	
—Area and location	12
—Built up areas, list of	60, 61
—Central Business Districts area ; its location and redevelopment	(ii), 8, 12, 13, 89
—Central Secretariat complex, space standards	60
—Decentralisation	12
—District Centres, area & location	12, 13, 88
—Floor Area Ratio	60, 61, 62
—Other areas	14
—Mineral sidings, area & location	88
—Shopping according to planning areas, Population Number of shops	16
—Shopping areas	16
—Space standards	16, 60, 61, 62
—Storage Depots	15
—Sub-District Centres (area & location)	14
—Total land allocation	16
—Use zone, retail shopping	50, 60
—Use zone, warehousing & storage	53, 62
—Use zone, wholesale	51, 61
—Warehousing & storage, areas & locations	(ii), 88
—Wholesale markets	14, 15, 88
Community Facilities :	
—Agricultural green belt	34, 49, 59
—Basic Primary schools proposed	34, 66, 90
—Colleges existing & proposed	35
—Cremation & burial grounds	37, 90
—Deficiencies	5
—District parks proposed	33, 34
—Dumping grounds	37
—Educational, Social & cultural institutions	35, 38, 90, 91
—Graveyards, existing and proposed areas	37, 90
—Higher Secondary schools proposed	34, 90
—Hospitals, existing & proposed	(iii), 36
—Hospitals, land allocation	90
—Local parks & playgrounds	32, 66
—Old City, special space standards	26, 70
—Other facilities, space standards	36, 68
—Pre-primary schools proposed	34, 62, 90

	PAGE No.
Community Facilities :	
—Regional parks	34
—Research Institutions	35
—Social & cultural centres	(iii), 37, 38, 90
—University centres, existing and proposed	35
Connaught Place	(ii), 8, 12, 13, 17, 23, 30 31, 33, 60, 89, 93
Corporation Offices	10, 11, 88, 91
Coverage :	
—Existing	10, 17, 18, 20, 21, 59, 60, 61
—Floor area ratio	62, 63
—Ground, proposed	9, 55, 59, 61, 62, 63
—Plot	55, 59, 62, 63
D	
Dairies, relocation	27
Darya Ganj	23, 56
Daya Busti Railway Station	(ii), 14, 88
Delhi :	
—Business and Commercial Centre	6
—Economic base	6
—Government employment centre	6
Delhi Administration Offices	87
Delhi Cloth Mills	17, 18
Delhi Development Act (1957)	(i), 42
Delhi Development Authority	(i), (ii)
Delhi Development (Provisional) Authority	(i)
Delhi Flying Club	32
Delhi Gate	12
Delhi Improvement Trust	(i)
Delhi Main Railway Station	28, 29, 31
Delhi Metropolitan Area :	
—Area	(i), 1, 80
—Growth & development basis	1, 5, 73
—Historical growth	1, 5
—Population, existing & projected	86
—Proposals for synchronised development	6, 7
—Ring Towns	1 to 4
—Rural areas & villages	98
Delhi Municipal Corporation	10, 11, 21
Delhi State Administration	10, 11

	PAGE No.
Density :	
—Average (1981)	89
—Employment, government offices	2, 9
—Employment industry & manufacturing	2, 7
—Group Housing	58
—Patterns & Proposals	22 to 25
—Residential existing and proposed	5, 22 to 25
Deshbandhu Gupta Road	(ii), 15
Dev Nagar	25
Development zones, criteria	26
Diplomatic Enclave	10, 24, 33
District Centres :	
—In planning areas	7, 16, 65
—Location & area	13
—Proposed development	12
District Shopping Centres	
—locations	8, 12
—proposals	12, 13, 88

E

Education :	
—Basic Schools	34, 66, 90
—Colleges, existing and proposed	35
—Colleges, university campus, existing and proposed	35
—Distribution of colleges and University centres according to planning divisions	35
—Primary	34, 66, 90
—Research and Institutional uses	35
—Social and Cultural centres	38
—Schools proposed, space standards	65, 66, 90
—Total land allocation	89, 90
—Vocational and Technical	35, 90
Eleven Hundred Acre Scheme along Ring Road	10, 13, 24, 87
Egin Road	29, 41
Employment :	
—Decentralisation	7, 8, 75, 86
—Government, Ring Towns	2, 9
—Government, Urban Delhi	9
—Industrial, Ring Towns	2
—Industrial, Urban Delhi	7
Engineering College (South Delhi)	90
Esplanade Road	4

	PAGE No.
Faiz Bazar Road	41
Faridabad :	
—Employment, Government & Industrial	2
—Land requirements	2
—Population	1, 2
—Proposed development	2
Fatehpuri	40, 61
Feroze Shah Kotla	33, 37
Feroze Shah Road	(iii), 29, 91
Flatted Factories :	
—Characteristics	17
—Floor Area Ratios	17, 62
—Proposed locations and areas	17, 18, 88
—Unit space standards	17, 62
Floor Area Ratio (F. A. R.) :	
—Commercial	60, 61, 62
—Definition	59
—Flatted Factories	17, 62
—Government	10, 60
—Group Housing	58
—Industry & Manufacturing	18, 20, 21
—Institutional Uses	63
—Method of Calculation	59
—Residential	59
—Rural farms	59
Ford Foundation	(iii)
Friend's Colony	24
G	
G. B. Road	14
Ghaffar Market	12
Ghaziabad :	
—Employment, Government Industrial	1, 2
—Land requirements	2
—Population	2
—Proposed development	2, 29, 32
—Ring Town, Proposals	I—2
Gokhle Market	14
Gole Market	13, 14, 23

Government :	PAGE No.
—Employment (Ring towns)	1, 2, 9
—Employment (Urban Delhi)	9
—Employment centres	5
—Housing	6
—Offices in barracks	11
—Offices, plot coverages	9, 60
—Offices development, existing locations and areas	10, 11
—Offices, floor area ratio	10, 60
—Offices, parking standards	10
—Offices, proposed areas (Urban Delhi)	9
—Offices, proposed locations and areas	10
—Offices, unit space standards	9, 10, 60
Government of India Press	(iii)
Grand Trunk Road	3, 20, 24, 25, 29, 30, 31, 33, 37, 40
Ground Coverage	9, 55, 59, 60, 61, 62
Gulabi Bagh	17, 18
Gurdwara Park	33
Gurgaon :	
—Employment, Government, Industrial	1, 2
—Land requirements	2
—Population	2
—Proposed development	3
Gur-ki-Mandi	40
H	
Hardinge Bridge (Tilak Bridge)	30
Hardinge Ground	33
Hauz Kazi	40
Hauz Khas	35, 40
Hindon River	29
Hindustan Housing Factory	20
Hindustan Pipe Corporation	22
Hindustan Wagon Factory	22
Hospitals, existing and proposed	(iii), 3
—Land allocation	90

Housing :	PAGE No.
—Areas proposed (Residential)	23, 2, 25
—Busti squatters	(ii), 27, 89
—Cluster	7, 65
—Coverage	59, 60, 61, 62
—Deficit	5, 6, 89
—Densities, existing	23 to 25
—Densities proposed	23 to 25, 72
—Floor area ratio (F. A. R.)	59
—Group housing	58
—Jhuggi Jhonpari Scheme	72
—Land allocation (Residential)	25
—Low Cost	27, 89
—Plot coverage	55
—Plot size	55
—Space standards	54, 58, 59, 60, 61, 62
—Unauthorised	7
Humayun's Tomb	25, 29, 32
Hyde Park	34
I	
I.N.A. Colony	14
Idgah	(ii), 33, 92
Idgah Road	31
India	73
India Gate	33
Indraprastha Estate	9, 10, 11, 13, 87
Industry & Manufacturing :	
—Considerations for future industrialisation	74
—Congestion	5
—Existing situation	73, 74
—Extensive, area, location, space standards	20, 21, 52, 63, 80
—Extractive and Allied	21, 52
—Flatted factories	17, 18, 76
—Flatted factories, areas and locations	88
—Flatted factories, proposed unit space standards	17, 62
—Flatted factories proposed, use zones	51
—Floor area ratios	18, 20, 21

—Industrial-cum-work centres, area, space standards	18, 19, 51, 62, 76, 88
—Industrial districts, planned	8, 17
—Light and Service, area and location	19, 20, 52, 63, 79, 87
—Lime and brick kilns	21, 82, 88
—Locations	21
—Prohibited industries in Urban Delhi	85
—Mining and pottery	21, 82, 88
—Non-conforming	45, 46
—Noxious	5, 20
—Plot size and coverages	62, 63
—Ring Towns, proposed	1 to 4
—Schedule of industries allowed in Urban Delhi	76 to 82
—Space standards	18, 20, 21, 62, 63
—Special industries area, location space standards	19, 52, 62, 78, 88
—Stone quarries and crushing	21, 82, 88
—Total land allocation (Urban Delhi)	22
—Total land allocation, (Ring Towns)	1, 2
—Undesirable industries in Urban Delhi	83, 84
—Use zones	51, 52, 53, 62, 63
—Warehousing and storage	22, 53, 62
—Working force, (Ring Towns)	1, 2
—Working force, (Urban Delhi)	17
Interim General Plan	(i)

J

Jama Masjid	33, 40, 56, 61
Jamia Millia University	35, 90
Janpath	(iii), 38
Jawahar Nagar	24, 56
Jhandewalan	14, 15, 30
Jhilmila Tahirpur	14, 19
Jhuggi Jhonpari Scheme	72

K

Kabli Gate	41
Kaka Nagar	24
Kalkaji	10, 13, 19, 20, 24, 34, 87, 57
Kamla Market	12, 17

Kamla Nagar	24, 56
Karol Bagh	12, 13, 24, 31, 35, 36, 56, 61
Karol Bagh Division	25, 33, 35, 36, 64
Kashmere Gate	(iii), 12, 14, 30, 31, 33, 56, 61, 92
Katra Bariyan	40
Katra Neel	88
Kauriya Pul Road	30
Keeling Road	(ii), 12, 29, 91
Keshopur	37
Khan Market	13, 14
Khari Baoli	8, 12, 40, 88
Khurja	32, 88, 91
Khyber Pass (Civil Lines)	13, 19
Kilns :	
—Area and location	21
—Brick	21, 49, 88
—Lime	21, 88
Kingsway Camp	24, 33, 57
Kitchner Road	(ii), 24, 55
Kotla Mubarakpur	19, 27
Krishna Market	88

L

Lahori Gate	40
Lajpat Nagar	57
Lajpat Rai Market	14, 56, 61
Lal Kuan	40
Land acquisition by government	7, 89
Land Allocation (Urban Delhi)	
—Commercial	16
—Government Offices	10
—Education	89, 90
—Industry & Manufacturing	22, 87
—Research & Institutional uses	90
—Residential	26, 80
—Other Community facilities	90

Land requirements, Ring Towns	2
Land Use (floor area ratios F.A.R.) :	
—Commercial	60, 61, 62
—Definition	59
—Flatted factories	17, 62
—Government	10, 60
—Industry & Manufacturing	18, 20, 21
—Residential	59

Land Use, Plans & Proposals (Urban Delhi) :	
—Agricultural	34
—Commercial	12 to 16
—Community facilities	32 to 36
—Government	9 to 11
—Industry & Manufacturing	17 to 22
—Public Utilities and services	36, 37
—Residential	22 to 25
—Transportation	28 to 32
—Social & cultural Institutions	37, 38

Land Use (Space Standards)	
—Commercial	60, 61, 62
—Flatted factories	17, 62
—Government	9, 60
—Industry & Manufacturing	18, 20, 21, 62, 63
—Other community facilities	68
—Parks & play grounds	66
—Residential	54 to 58
—Rural farms	59
—Schools	24, 35, 65, 66
—Shopping	67
—Special standards, Old City	70
—Streets	69

Land use, removal of non-conforming uses	8, 27, 45 to 48
Lawrence Road	20, 31, 88
Link Road	30, 40, 82

Lodi Colony	30
Lodi Estate	24
Lodi Gardens	33
Lodi Road	10, 87
London	34

Loni :	
—Employment, government & industrial	1, 2
—Land requirements	1, 2
—Population	1, 2
—Proposed development	3
Loni Road	13
Lothian Road	29
Low income migrants to Delhi	27

M

Machli Bazar Road	40
Magazine Road	33
Malka Ganj	14, 23, 61
Mall Road	24, 33
Malviya Nagar	13
Mamurpur Village	4
Manak Pura	23

Markets :	
—Areas and locations	15
—Building material	15
—Cloth	15
—Cycle	15
—Dry fruit	15
—Fodder	14
—Food grain	(ii), 14
—Fruit & vegetable	(i), 14
—Hosiery & general merchandise	15
—Scrap metal, iron & steel, junk	15
—Timber	(ii), 15

M	
Master Plan :	
--Concept	(i), (ii)
--For Ring Towns	1 to 5
--Interim General Plan	(i)
--Land uses, existing & proposed	9 to 38
--Major policy decisions	6 to 9
--Review and revision	38, 39,
--Rural area	93
--Stages of development	42, 43
--Urban Villages	(ii), 27, 49, 92, 93
--Zonal development plans	26, 27
Mata Sundari Area	6, 89, 92
Mata Sundari Road	86
Mathura	37
Mathura Road	(iii), 3, 9, 15, 19, 20, 22, 24, 29, 30, 35, 88, 91
Matia Mahal Road	40
Maulana Azad Road	38
Medical Enclave	87
Meerut	29
Mehpalpur Road	82
Mehpalpur Village	21
Mehrauli	32
Mehrauli Road	(i), 30, 35, 92
Migration to Delhi	(ii), 27, 75
Mineral sidings sites	16
Ministry of External Affairs	11
Ministry of Health	(i)
Ministry of Rehabilitation	4
Minto Bridge	30, 31, 92
Minto Road	11, 12, 13, 30
Model Town	24, 56
Mori Gate	88
Moti Bagh	24
Moti Nagar	78, 57
Motia Khan	17, 18, 31, 70, 88, 92
Multan Nagar	20
Mundhewalan Road	30
N	
Nai Sarak	40
Najafgarh	34
Nangloi	13, 15, 22, 28
Nangal Power Station	31, 92
Najafgarh Road	14, 17, 20, 21, 25, 41, 80, 87
Nangloi Railway Station	(iii)
National Highway by-pass	24, 29, 30, 31, 37, 92
National Physical Laboratory	35
National Stadium	38
Naraina Village	33
Narela :	
--Area & population	2, 4
--Employment, Government & Industrial	1, 2, 3
--Important factors	3
--Land requirements	2
--Proposed land use	3, 4
Naya Bazar	14, 41
New Delhi	5, 6, 7, 29, 38, 87
New Delhi Division	25, 33, 35, 36, 64
New Delhi Municipal Committee	10, 11
New Delhi Railway Station	10, 14, 28, 91
New Jail Area (Najafgarh)	30
New Jail Road	14
New Rajender Nagar	25
New York	34
Nigambodh Ghat	37
Nizamuddin	28, 57
North Western Division	25, 34, 35, 36, 64
O	
Oil Company Depots	15
Okhla	(ii), 34, 35, 36, 79, 87, 88
Okhla Industrial Estate	17, 30, 31, 79, 91, 92
Okhla Railway Station	88
Old City :	
--Commercial areas, space standards	60, 61
--Density pattern	23, 87
--Planning Division	25, 33, 35, 36, 64

—Redevelopment	(ii), 6, 12, 23, 89, 92
—Special space standards for community facilities	70
—Zonal development plans	70
Old Fort	25, 28, 38
Old Secretariat	10, 13
Open spaces & parks :	
—Proposed	8, 89
—Space standards	66
Orchards	25

P

Pahar Ganj	25, 56, 70
palwal	32, 91
Palam	15
Palam Airport	32
Panchkuin Road	14
Pandara Road	24
Parade Ground	33
Park Street	29
Paris	34
Parking & bus terminals :	
—D.T.U.	31
—Goods parcel	31
—Interstate buses	30
—Standards	10
Parliament Street	9, 10, 11, 12, 13, 23, 29, 87, 91
Partition of India	73, 74
Pasaunda, alternate site for airport	32
Patel Road	29, 30, 92
Phatak Habash Khan	88
Plan :	
—Characteristics	5
—Development by stages	42, 43
—Legal sanction	5

—Major recommendations	6 to 9
—Reality basis of plan	5
—Review & revision	38, 39

Planning :

—Areas	26, 65
—Divisions	7, 26, 64
—Integrated development	5, 38, 39
—Policies	6
—Regulations	5
—Rural	49, 59
—Synthesis	7
—Units	26, 65
—Urban	5 to 9

Planning Divisions :

—A. Old City Division	26, 33, 35, 36, 64
—B. Karol Bagh Division	26, 33, 35, 36, 64
—C. Civil Lines Division	26, 33, 35, 36, 64
—D. New Delhi Division	26, 33, 35, 36, 64
—E. Shahdara Division	26, 33, 35, 36, 64
—F. South Delhi Division	26, 34, 35, 36, 64
—G. North-western Division	26, 34, 35, 36, 64
—H. West Delhi Division	26, 34, 35, 36, 64
—Area & proposed population upto 1981	26
—Colleges & University Centres	35
—Criteria & definition	7, 64, 87
—General hospitals, existing & proposed	36
—Number of development zones	64, 87

Population :

—Concentration in Old Delhi	6
—Decentralisation to Ring Towns	1, 86
—Delhi Metropolitan area	86
—National Capital region	86
—Projection upto 1981	86
—Ring Towns	1, 2

Post & Telegraph Offices	36, 90
Public Utilities :	
—Dumping grounds & sanitary filling	37, 90
—Power supply	(ii), 37, 90
—Sewage disposal	(ii), 37, 90
—Water supply	(iii), 36, 90
Pul Bangash	41
Punjab	75, 86
Pusa Agricultural Institute	20, 35, 88, 90
Pusa Road	13, 33

O

Qadam Sharif	23, 33, 56, 61, 70
Qila :	
—Lal (Red Fort)	29, 31, 33
—Purana (Old Fort)	25, 28, 38
Queen Mary's Avenue	30
Queen Mary's Road	91
Queen's Road	30, 40
Queen Victoria Road	29, 30
Qutab Minar	34

R

Railways	
—Delhi Main electrification	29, 91
—Meter gauge	28, 91
—National capital region	28
—Offices	10, 87
—Proposed goods avoiding line	28
—Proposed mineral & goods siding	28, 91
—Ring Railway	(iii)
—Stations, proposed improvements	28, 91
Rajasthan	75
Rajouri gardens	57

Rajpur Road	24
Rajender Nagar	25, 56
Raj Ghat	33, 37
Rama Krishna Ashram Marg	30
Ram Lila grounds	11, 12, 38, 90
Rana Pratap Bagh	24, 33, 56
Ranjit Singh Road	12, 13, 29
Rani Jhansi Road	41
Ratendon Road	20

Recreation :

—Agricultural green belt	9, 34, 49, 59
—Civil Lines Division (proposed)	33
—Districts Parks (proposed)	33, 66, 89
—Karol Bagh Division (proposed)	33
—Land allocation	89
—Local Parks & play grounds	32, 66
—New Delhi Division (proposed)	33
—North Western Division (proposed)	34
—Open spaces	8, 66, 89
—Old City Division (proposed)	33
—Picnic spots	34
—Regional Parks	34, 89
—Semi-public	33
—Shahdara Division (proposed)	34
—Space standards (local parks and play grounds proposed according to planning divisions)	34, 66
—South Delhi Division	34
—Tot lots	66
—Use Zone	59
—West Delhi Division (proposed)	34
Red Fort	29, 31, 33
Research & Institutional uses	35, 36
Residential Areas :	
—Built up areas list	56
—Busti squatters, relocation	(ii), 27, 89
—Conservation	8, 24, 25

—Density average	89
—Density pattern	5, 6
—Density pattern, existing and proposed	23, 24, 25
—Group housing	58
—Housing types for various densities (15,000 population)	72
—Housing cluster	7, 65
—Jhuggi Jhonpari Scheme	72
—Old City, redevelopment	(ii), 6, 12, 23, 70, 89
—Planning areas	26, 65
—Planning tiers (Urban Delhi)	65
—Redevelopment	8, 23, 24, 25, 89, 92
—Rehabilitation	8, 24, 92
—Rehabilitation colonies	5
—Relocation	(ii), 23, 24, 25
—Space standards	54 to 58
—Streets, Old City	40
—Total land allocation	26, 89
—Units	26, 65
—Use Zones	48 to 58
Rewari	21, 89
Ridge Road	30

Ring Towns :

—Ballabgarh proposed development	2
—Bahadurgarh proposed development	3
—Economic base pattern suggested	1
—Employment, Governmental	1
—Employment Industrial	2
—Faridabad proposed development	2
—Ghaziabad proposed development	2
—Gurgaon proposed development	3
—Highway connections	32
—Land requirements	1
—Land use plan proposed	4
—Loni proposed development	3
—Location	1
—Narela, proposed development	3, 4

—Population decentralisation to Ring Towns	1
—Population existing and proposed	1, 86

Roads :

—Ajmal Khan Road	12
—Alipur Road	24
—Asaf Ali Road	12, 13
—Badarpur Road	90
—Bahadurgarh Road	15, 24
—Bela Road	(iii)
—Chelmsford Road	29
—Chitli Kabar Road	40
—Chitra Gupta Road	30
—Church Mission Road	15, 29, 40, 88
—Circular Road	(ii), 11, 29, 87, 91
—College Road	(ii), 29, 87, 91
—Curzon Road	23
—Deshbandhu Gupta Road	(i), 15
—Elgin Road	29, 40
—Esplanade Road	40
—Faiz Bazar Road	46
—Ferozeshah Road	(iii), 29, 91
—G. B. Road	14
—Grand Trunk Road	3, 20, 24, 25, 29, 30, 31, 33, 37, 40
—Idgah Road	31
—Janpath	(li), 38
—Kauriyapul Road	30
—Keeling Road	(ii), 12, 29, 91
—Kitchner Road	(iii), 24, 35
—Lawrence Road	20, 31, 88
—Link Road	30, 40, 92
—Lodi Road	10, 87
—Loni Road	13
—Lothian Road	29
—Machli Bazar Road	40
—Magazine Road	33

—Mall Road	24, 33
—Mata Sundari Road	87
—Matia Mahal Road	40
—Mathura Road	(iii), 3, 9, 15, 19, 20, 22, 24, 29, 30, 35, 88, 91
—Maulana Azad Road	38
—Mehpalpur Road	82
—Mehrauli Road	(ii), 30, 35, 92
—Minto Road	11, 12, 13, 30
—Mundhewalan Road	30
—Nai Sarak	40
—Najafgarh Road	14, 17, 20, 21, 25, 41, 80, 87
—National Highway by-pass	24, 29, 30, 31, 37, 92
—New Jail Road	14
—Park Street	29
—Parliament Street	9, 10, 11, 12, 13, 23, 29, 87, 91
—Patel Road	29, 30, 92
—Queen Victoria Road	29, 30
—Queen Mary's Avenue	30
—Queen Mary's Road	91
—Queen's Road	30, 40
—Rajpur Road	24
—Rama Krishna Ashram Marg	30
—Ranjit Singh Road	12, 13, 29
—Rani Jhansi Road	41
—Ratendone Road	20
—Ridge Road	30
—Ring Road	(iii), 19, 20, 24, 29, 30, 35, 79, 88, 91
—Rohtak Road	(i), 14, 15, 20, 21, 25, 29, 30, 31, 81, 88, 91, 92
—Roshanara Road	17, 18, 40, 78, 88
—School Lane	29
—Shahjahan Road	11
—Shankar Road	29, 30
—Talkatora Road	29, 30
—Thompson Road	30
—Arterial-cycle tracks	30
—Intersection improvements	30

—Old City proposed rights of way of roads	40
—Proposals	29, 30, 91
—Road grade separation with railways	30, 92
—Standards for streets in residential areas	69
Rohtak	21, 87
Roop Nagar	24
Roshnara Gardens	33
Rural Delhi	93
Rural farms space standards	59, 93
S	
Sadar Bazar	8, 11, 15, 23, 56, 61, 70, 88
Safdarjang Airport	30, 32, 33, 91
Safdarjang Hospital	10, 87
Safdarjang Tomb	33
Sahibabad	28, 29, 91
Sapru House	38, 90
Sarai Rohilla	(ii), 14, 17, 18, 20, 33, 56, 79, 88
School Lane	29
Schools	
—Higher Secondary	34, 66, 90
—Pre-Primary	34, 66, 90
—Primary	34, 66, 90
—Space Standards	34, 35, 65, 66, 89
Sewa Nagar	30
Sewage disposal	(iii), 37, 90
Shadipur Khampur	23
Shahdara	(iii), 2, 12, 13, 15, 16, 19 to 22, 25, 28, 57, 61, 86, 87, 88
Shahdara-division	25, 33, 35, 36, 64
Shahjahan Road	11
Shakti Nagar	24, 56
Shakurbasti	13, 28
Shalimar Gardens	10, 13
Shankar Market	18, 88
Shankar Road	29, 30
Shopping :	
—Facilities at various tiers of planning areas	66, 67

—Retail, space standards in zonal development plans	67
—Retail, use zone	50, 60, 61
Siri	34, 37, 38
Slaughter house relocation	20, 21
Slums improvement	26, 27
Slum clearance	7, 93
Social and cultural centres	(iii), 37, 38, 90
Sonepat	29, 32, 91
South Delhi Division	26, 34, 35, 36, 64
Space standards :	
—Commercial	60, 61, 62
—Coverages	9, 55, 59, 60, 61, 62
—Flatted factories	17, 62
—Government Offices	9, 60
—Group housing	58
—Industry & Manufacturing	18, 20, 21, 62, 63
—Institutional uses	63, 90
—Other community facilities	68
—Parks & playgrounds	66
—Residential	54 to 58
—Rural farms	59
—Schools	34, 35, 65, 66
—Shopping	67
—Special standards, Old city	70
—Streets	69
Stone quarries & crushing	21, 82, 88
Storage depots-oil	15
Storage grain	15
Sub-central business districts :	
—Area and location	13
—Development	12
Sub-district centres ;	
Area and location	14
—Development	13
Subz/mandi	14, 28, 56, 61, 70, 88
Supreme Court	10, 11, 87

Tagore Memorial Theatre	38
Talkatora Road	29, 30
Teliwara	(iii), 14, 88
Third Five Year Plan	33
Tilak Nagar	14, 56, 78
Tihar	14, 19
Tis Hazari Courts	11, 91
Tot-lots	66
Town Planning Organization	(i)
Transportation & Traffic	
—Airport sits, recommendations	32, 90
—Circulation, Old City	27
—Circulation system planning	8
—Co-ordination traffic	28
—Department traffic proposed	31, 92
—D T.U. bus terminal sites]	31, 92
—Goods parcel terminal and parking sites	(iii), 31, 92
—Mass transport proposals	31, 92
—Passengers bus terminal and parking area location	(ij), 30
—Proposed arterial cycle tracks and parking	30, 92
—Proposed right of way in the Old City	40
—Railways, recommendations	(ii), 28, 91
—Regional highway proposals	32, 91
—Road grade separation with railways	30, 92
—Road inter-section improvements	30
—Roads proposals	29, 30, 91
—Staggering of work hours	31, 92
Tughlakabad	89
Turkman Gate	40

	PAGE
U	
Union Public Service Commission	10, 11
University centres, existing & proposed	35
University of Delhi	35
Upper Ridge	34
Urban area deficiencies	5
Urban land use plan characteristics	5
Urban renewal & redevelopment :	
—Conservation area	8, 24, 25, 92
—Recommendations	87, 92, 93
—Redevelopment areas	8, 24, 25, 92
—Rehabilitation areas	8, 24, 92
—Old City redevelopment	6, 12, 23, 89
Urban Villages	(ii), 27, 49, 92, 93
Urbanizable area upto 1981	38, 86
Use Zones :	
—Agricultural, characteristics	49, 59
—Criteria	44, 45
—Extensive manufacturing, characteristics & space standards	52, 63
—Extractive industry, characteristics	52
—Flatted factories, characteristics & space standards	51, 62
—Government offices, characteristics & space standards	53, 60
—Light industry & service industry, characteristics and space standards	52, 63
—Public & semi-public facilities, characteristics	53
—Recreational characteristics	53
—Residential, characteristics and space standards	48, 49, 54, 59
—Retail shopping, characteristics and space standards	60, 61
—Rural, characteristics	49, 59
—Special industry, characteristics and space standards	52, 62

—Warehousing & storage depots, characteristics	53, 62
—Wholesale, characteristics & space standards	51, 61
—Work-cum-industrial centres, characteristics & space standards	51, 62
Uttar Pradesh	2, 75, 86, 89, 91

V

Vigyan Bhawan	58
Vijay Chowk	33
Vijay Nagar	24
Vinay Nagar	14, 30

W

Walled City	70
Warehousing	15
Water Supply	(ii), 36, 90
West Delhi Division	26, 34, 35, 36, 64
Work Centres, decentralisation	9
Working Force	
—Government (Urban Delhi)	9
—Government (Ring Towns)	1, 2, 9
—Industrial (Urban Delhi)	17
—Industrial (Ring Towns)	1, 2
Wazirabad	29, 32, 36
Wazirabad Barrag	25, 91
Wazirpur Village	13, 20, 78
Wellesley Road	30
Western Yamuna Canal	29, 91
Wireless & transmitting station sites	37

	PAGE
Y	
Yamuna Bridge	30, 32, 91
Yamuna Bazar	37
Yamuna River	16, 25, 28, 29, 30, 89, 92
York Place	6, 87, 89
Z	
Zonal Development Plans	
—Concept of development	26
—New areas	27
—Old City	26, 27
—Planning areas	26, 65

	PAGE
—Planning divisions	64, 65, 66
—Planning units	26, 65
Zoning ;	
—Improvements & alterations permissible in non-conforming uses	47, 48
—Regulations	(ii), 5, 44
—Removal of commercial non-conforming uses	47
—Removal of industrial non-conforming uses according to time schedule	45, 46, 47
—Removal of residential non-conforming uses	47
—Special Use Zones	44, 45
—Sub-division regulations	(ii), 64, 65
Zoological gardens	33