National Capital Region Planning Board
(Planning Committee)

5th Meeting
16 May 1986

Agenda & Minutes

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I M M E D I A T E

No.K.14011/27/86-NCRPB
Government of India
NCR Planning Board
'C' Wing, Nirman Bhavan

New Delhi, dated May 2, 1986

MEETING NOTICE

Subject:- Fifth meeting of the Planning Committee of the National Capital Region Planning Board to be held on May 16, 1986 at VIGYAN BHAVAN, New Delhi.

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The next meeting of the Planning Committee of the National Capital Region Planning Board will be held on ~~Friday~~ the 16th May, 1986 at Vigyan Bhavan (Committee Room No.E), New Delhi, to discuss the draft of the 'Interim Development Plan for the National Capital Region'. The programme will be as under:-

2187

10.00 Hrs to 13.00 Hrs.	.. Discussion.
13.00 Hrs to 14.00 Hrs.	.. Lunch.
14.00 Hrs to 17.00 Hrs.	.. To continue discussion.

2. A copy of draft 'Interim Development Plan for the National Capital Region' is enclosed.

3. Kindly make it convenient to attend the meeting.

(Mrs V.R.Sundaram)
DEPUTY DIRECTOR
Tele:3012399/
3018743

Encl : As above.

To

1. Member Secretary, NCR Planning Board, New Delhi. (Shri M.Shankar).
2. Shri R.L.Pardeep, Joint Secretary(UD), Ministry of Urban Development, New Delhi.

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3. Shri Prem Kumar, Vice Chairman, Delhi Development Authority, New Delhi.

4. Shri J.K.Duggal, Secretary, Town and Country Planning Department, Government of Haryana, Chandigarh.

5. Shri A.P.Singh, Secretary, Housing and Urban Development Department, 2nd floor, Vikas Bhavan, Government of Uttar Pradesh, Janpath, Lucknow-260 002.

6. Shri R.Ramakrishna, Secretary, Local Self Government, Government of Rajasthan, Jaipur.

7. Shri P.S.Bhatnagar, Secretary(L&B), Delhi Administration, I.P.Estate, New Delhi-110 002.

8. Shri H.S.Mathur, Chief Town Planner, Government of Rajasthan, Jaipur.

9. Shri E.F.N.Ribeiro, Chief Planner, Town and Country Planning Organisation, Vikas Bhavan, I.P.Estate, New Delhi-2.

10. Shri N.S.Johri, Chief Town Planner, Government of Uttar Pradesh, Lucknow.

11. Shri G.Madhavan, Director, Town and Country Planning, Government of Haryana, Chandigarh.

12. Shri V.A.Valiaparambil, Joint Adviser (Transport), Planning Commission, New Delhi.

13. Shri E.S.Wakale, Deputy Director General(TP), Ministry of Tele-Communications, Sanchar Bhavan, New Delhi.

14. Shri L.R.Kadiyali, Chief Engineer(Planning), Ministry of Shipping and Transport, New Delhi.

15. Shri R.M.Raina, Director(Planning), Ministry of Railways, New Delhi.

16. Shri Y.P.Gambhir, Director(Power), Ministry of Energy, Department of Power, New Delhi.

17. Shri S.K.Sharma, Chairman-cum-Managing Director, Housing and Urban Development Corporation, HUDCO House, Lodi Road, New Delhi-110 003.

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I N D E X

SUMMARY OF POLICIES SUGGESTED FOR ADOPTION IN THE INTERIM PLAN FOR THE DEVELOPMENT OF NATIONAL CAPITAL REGION

INTRODUCTION

The population of Delhi has been growing at a very high rate since it became the national capital. While in comparison with the other towns of the country in terms of rate of growth it is one among the three cities which has been recording an average annual growth of more than 50% since 1951, among the four metropolitan cities, Delhi, which started at the bottom, is now third and if the trend continues as in the past, it will outstrip both Bombay and Calcutta and may rank as the first in terms of population by the 21st Century. While there is a need for containing the growth of the metropolitan cities in general, Delhi needs specialised attention, it being the national capital. On the one hand it is necessary to maintain - where it is satisfactory at present - and improve - where it is necessary - the amenities and environment of the city since it is an international city and it ought to demonstrate the image of the country. On the other hand being the national capital it is a sensitive city and any breakdown in the law and order situation resulting from the breakdown of any of the services would have serious repercussions. Thus, the raison-d'etre of the region is Delhi and any planning of the region has to start from Delhi outwards.

There is a felt need for containing the growth of population in Delhi. Thus, in suggesting a plan for the region measures have to be suggested which will curb the growth of population in Delhi. However, while suggesting these curbs it has to be ensured that the over-all quality of life in the city is not affected. In fact the objective is to enhance it. Similarly, while suggesting the plan for development of the region it has, at the same time, to be ensured that the measures suggested do not result in the region and the core area Delhi both growing at a faster rate than they have experienced in the past. Thus, the policies that have been suggested have taken into consideration the above aspects and while keeping the growth of population in the region as a whole to remain as projected by the various experts, a re-distribution

has been suggested so as to take the pressure off Delhi and provide for a planned and viable growth of the region.

PERSPECTIVE

The plan has been prepared with 2001 as the perspective. Even though with the fixing of 2001 A.D. as the horizon - the period of the plan gets reduced to 15 years or less, it has been felt necessary to stick to 2001 primarily on account of the fact that the Master Plan for Delhi is being prepared with the year 2001.

OBJECTIVE

With the regional population remaining at the projected 325 lakhs of which 234 lakhs will be urban and 91 lakhs rural in the year 2001, the main objective of the regional plan is to restrict the share of Delhi sub-region to 112 lakhs as against the projected 132 lakhs (or a 148.5 lakhs as projected by the Perspective Planning Wing of the Delhi Development Authority). While restricting the growth of Delhi it is necessary to ensure that the difference in the growth is contained within the region in a planned manner. It is also necessary that the resultant extra growth in the region outside Delhi is of such a nature that it will have an over-all effect in the entire region stimulating its regulated and orderly growth in and around the poles selected for development.

Mere restriction of population by itself will not be sufficient to improve the quality of life in Delhi. It is necessary that the green areas are preserved and the environment is conducive to a healthy growth. The present sprawl of urbanisation around Delhi is least conducive to promoting the above. It has, therefore, been felt necessary that in addition to restricting the population of Delhi it would also be necessary to contain the growth of urbanisation in the immediate environs of Delhi and hence certain restrictions are proposed for the area which is termed as the Delhi Metropolitan Area. Again, while containing the future growth of this area it is necessary that the existing situation is improved so that better integration with the core area is brought about so that without being points of attractions for the people from outside they become attractive for voluntary shifting of population from

the core area to these places.

If the growth of Delhi is to be restrained while keeping the regional growth as projected, it is necessary to stimulate induced development of some areas of the region. Various alternative strategies were discussed and it was decided that considering the financial, administrative, managerial and other constraints it would be advisable to restrict the induced growth to a small number of towns which have exhibited strong characteristics of growth in the past and which have the potential to absorb the increase in population given the necessary inputs. Accordingly, the towns of Meerut, Hapur, Bulandshahr-Khurja, Palwal, Alwar, Rewari-Bhiwadi-Dharuhera, Rohtak and Panipat have been identified as the towns or complexes that could be developed so as to absorb the increased population.

In the past the development of towns to stimulate induced growth of population has been synonymous with schemes of land acquisition and development. There had been a facile assumption that if serviced land requirements for the additional population is met the towns would automatically grow. This assumption has been proved to be in-correct and considering that the growth of cities is more on account of job seeking in-migrants rather than an employed person seeking a house or serviced land, it is necessary to provide an economic base for the growth of the towns. Similarly, in trying to curb the growth of population in Delhi the economic factors which govern such growth have to be carefully identified and steps suggested so as to contain this growth. The success of the entire proposals contained in the plan will depend on the economic measures rather than the other measures suggested. The other measures suggested are only to support, strengthen or to take care of the requirements of such economic growth.

Transport is essentially looked upon as a service. However, it has also its economic bye-products and a sound transport policy will not only service the population but also prove to be a catalyst for the growth of the identified areas and also channelise the direction of growth. The main objective of the transport plan for the region is to provide good connections to the central core area while discouraging the transit of goods and passengers through

the core area by providing alternative routes that will by-pass the core area. The by-passes will add an economic base for the development of these areas.

For the proper development of the region it is necessary to ensure the availability of the urban infrastructure of a quality and standard not very much inferior or different from that obtaining in Delhi. Accordingly, policies have been suggested for the provision of physical infrastructure and also for the development of power.

With the above objectives and suggested strategies in view, a package of policy directives to be adopted are enumerated below under the various headings :

[A] POPULATION POLICY

P.P. 1 To control the growth of population of Delhi to 112 lakhs by the year 2001.

P.P. 2 To control the growth of population in the towns in the Delhi Metropolitan Area so as to restrict it to a total of 37 lakhs by 2001, with the individiual towns having the growth restricted to accommodate the populations as mentioned below

Ghaziabad including Loni	11 lakhs
NOIDA	5.5 lakhs
Faridabad	10 lakhs
Gurgaon	7 lakhs
Bahadurgarh	2 lakhs
Kundli	1.5 lakhs
Rural	1 lakh

P.P. 3 The region is to be planned for a total population of 325 lakhs with an urban component of 234 lakhs.

[B] SETTLEMENT PATTERN

S.P. 1 To counter-act the pull factors exerted by Delhi and also to absorb the difference in the projected growth and the assigned population of both Delhi and the Delhi Metropolitan Area, the following towns in the region are to be developed for the populations noted against each :

Meerut	13 lakhs
Hapur	6 lakhs

Bulandshahr-Khurja	10 lakhs
Palwal	3 lakhs
Alwar	5 lakhs
Rewari-Bhiwadi-Dharuhera	3 lakhs
Rohtak	5 lakhs
Panipat	5 lakhs

Based on the above urban centres a four tier system of settlements has to be evolved to include regional centres, sub-regional centres, service centres and basic villages. The funtional character of these centres are to be identified in terms of the available infra-
/structural and social services.

[C] POLICY REGARDING ECONOMIC ACTIVITIES

Both in order to curb the growth of population in Delhi and to induce growth of population in selected towns the following three major employment generators have been identified for dispersal.

1. Location of industries
2. Location of Central Government & Public Sector Offices
3. Location of Whole-sale & Distributive Trade & Commerce

E.P. 1 LOCATIONAL POLICY FOR INDUSTRIES

(a) Strict Control within Union Territory of Delhi

(i) While continuing the present policy of not promoting location of medium and large scale industries within Delhi, location of even small scale industries are to be restricted to those which are required either for providing or servicing the consumer needs of Delhi's population. All applications should be referred to a special Group constituted by the Board for checking such industries.

(ii) All non-conforming industries occupying more than 500 square metres of floor space should be shifted outside Delhi. A Committee should be set up to identify such industries for dispersal. The Committee should also be charged with the responsibility of selecting an alternative site for shifting these industries within the region.

(b) Control outside Delhi but within the DMA

No large scale or medium scale industries should be permitted to be set up in the Delhi Metropolitan Area. Only small scale

units should be permitted.

(c) Incentive for industries outside the DMA but within the National Capital Region

The towns selected for priority development in the plan should have a strong industrial content and incentives should be given for the location of large, medium and small scale industries by developing industrial estates and offering other incentives in these towns. In addition to these towns, there should be no restrictions on the growth of industries in the Region except in the areas reserved for conservation.

E.P. 2 LOCATIONAL POLICY FOR CENTRAL GOVERNMENT AND PUBLIC SECTOR OFFICES

(a) Strict control within the Union Territory of Delhi

With regard to Government offices, the present policy and mechanism for screening the location of new government offices and expansion of existing government offices should be continued. The main criteria for location of offices in the capital should be that they perform the Ministerial functions, protocol function or liaison function which by their nature cannot be performed anywhere else except in the national capital. The existing offices which do not perform any of the above functions should be shifted from Delhi. The jurisdiction of the Committee which already exists in Government for scrutinising and screening of opening of new government offices and expansion of government offices in Delhi should be enlarged to include the public sector offices. The Committee should further identify those public sector offices or parts of their offices whose location in Delhi is not justified on the above three criteria.

(b) Control outside Delhi but within the D.M.A.

(i) A similar control on the opening of new central government and public sector offices in the DMA towns should be exercised. Relocation or expansion of government offices which have ministerial, protocol or liaison functions which make it incumbent upon them to be located in Delhi should be encouraged to be shifted or opened in the DMA towns.

(ii) In so far as public sector undertakings are concerned

the restrictions on their opening new offices or expanding the existing ones should apply equally to the DMA area. However, relocation of those offices whose existance or continuance in Delhi are justified may be encouraged.

E.P. 3 LOCATIONAL POLICY FOR WHOLE-SALE AND DISTRIBUTIVE TRADE AND COMMERCE

(i) Disincentives within Delhi

An approach of disincentives to the wholesale trade which are not directly consumed in Delhi should be adopted. Only those wholesale trades, atleast 60% of which are directly used and consumed in Delhi and are not hazardous in nature and do not require extensive space, should be allowed to continue and developed in Delhi.

(ii) Controlled development outside Delhi but within D.M.A.

The policy of checks and disincentives is also to be followed in case of DMA towns but with some relaxations. The whole-sale trades which are directly used and consumed in Delhi and DMA towns should only be allowed. There are certain whole-sale trades in Delhi which are hazardous becuase of their location in congested areas and due to bulk handling activities such as plastic and PVC goods, chemicals, timber, food grains, iron and steel and other building materials. These whole-sale trades should be encouraged to develop in DMA towns.

(iii) Outside D.M.A. but within NCR

It is proposed that as a matter of policy, incentives, concessions and infrastructure should be made available in the regional towns to encourage and accelerate the growth of trade. New trade functions with high growth potential should be identified and located outside Delhi and DMA to cater to the specified roles assigned to the selected towns.

[D] POLICY REGARDING LAND USE

L.P. 1 POLICY FOR AGRICULTURAL LAND

Agriculture froms an important part of the economy of the NCR. Roughly 80% of the total area of the region is used for agriculture and its allied activities and more than 50% of the total workers

are engaged in primary sector activity. Therefore, it is imperative to design policies for agricultural development.

L.P. 2 The new employment opportunities are proposed in the non-agricultural sector and consequent concentration of population in the selected priority settlements would need expansion and the expansion would have to be met mostly from the existing agricultural land. This necessitates a rational policy of utilisation of less valuable land for urban expansion and as far as possible un-productive or barren land for location of urban/industrial centres.

L.P. 3 The reduction of agricultural land may be caused by the creation of lakes, reservoirs, flood protection works, urban water supply schemes and irrigation works. This also calls for an intensive utilisation of available agricultural land for production purposes.

L.P. 4 Intensive food production units which are subject to planning control will only be permitted in the rural areas where they do not conflict with policies for conservation or environmental protection. The improvement for reclamation of land for agricultural use will normally be permitted where this would not seriously conflict with landscape, archeological or nature conservation policies. Development will not normally be permitted where it would result in the permanent loss of forest land.

L.P. 5 The land reclaimed by flood protection have to be reserved for agriculture.

L.P. 6 POLICY FOR FOREST DEVELOPMENT

L.P. 7 The policy for development of forests should aim at preservation, improvement of existing forest areas in the Alwar tehsil and along the Ganga river in the U.P. Sub-region.

L.P. 8 Tree plantation should be carried on the cultivable wastes, barren lands and public lands.

L.P. 9 In each settlement tree plantation programme like social forestry should be speeded up for the amelioration of local, physical and economic condition and for the production of fuel wood for local consumption.

L.P. 10 Restriction on conversion of forest lands for agricultural purpose.

L.P. 11 POLICY FOR LAND FOR URBAN DEVELOPMENT

The projected urban population of 234 lakhs in the region means an addition of 143 lakhs to the urban population existing in 1981. For this additional population to be accommodated nearly 2.8 lakh hectares of land would be required on existing overall average density of the towns in the region. However, it is necessary to conserve agricultural and other lands and minimise the area of land getting urbanised. If properly planned, most of the existing towns, especially the DMA towns and priority towns can accommodate additional population by re-densification thus reducing the need for additional land. It has been estimated that in Delhi urban area the proposed addition of 55 lakh population could be accommodated in 17000 hectares. Similarly, in the DMA towns the additional 29.5 lakhs can be accommodated in 10000 hectares. In the 8 towns and complexes selected for priority development, land of the order of 20000 hectares could be sufficient. Thus, it would be seen that for accommodating nearly 120 lakhs a total additional area of 47000 hectares may be adequate.

L.P. 12 POLICY FOR REGIONAL RECREATIONAL AREAS

L.P. 13 Area of general level amenities as regional parks in the proximity of the metropolis could be developed.

L.P. 14 River front as recreational areas by developing them and making them more accessible for such use.

L.P. 15 Historical monument, natural and areas of scenic beauty, both existing and potential, and forest land, should be preserved.

L.P. 16 Parks in rural areas noted for their landscape and scenic beauty which could be used as picnic spots.

L.P. 17 National Park/wild life/Bird sanctuary vicinity of the region could be developed for tourist attraction.

L.P. 18 POLICY FOR NATURE CONSERVATION

To achieve the overall development of the NCR without destruction of its natural environment all economic activities need to be well planned. Special attention should be given to check the damage to the environment by man's interference for development purpose.

L.P. 19 Development which is likely to affect adversely sites of special scenic beauty or national or local nature reserves will not be permitted.

L.P. 20 Full account will be taken of feature of importance to nature conservation when considering major development proposals.

L.P. 21 Special attention will also be given to protection of special landscape areas and areas sensitive to development pressures.

L.P. 22 POLICY FOR GREEN BUFFER

The NCR plan aims to improve the physical environment of the whole region. This would be achieved by ensuring both existing uses within the region and the development which are contemplated by the proposals. The green, buffer will support the promotion of the priority settlements/areas by controlling the growth of their built up areas. Besides, the green buffer will prevent neighbouring settlements from merging and help to preserve their special character.

L.P. 23 The character of the buffer zone will be retained, protected and enhanced wherever possible by safeguarding areas of mainly open rural areas to take account of the interest and needs of agriculture and provide a source of recreation.

L.P. 24 The green buffer zone policies are designed to restrain the encroachment of urban activities into the open rural areas. The buffer zone could be used for the purposes of agriculture, horticulture, forestry and other uses appropriate to the character and function of the buffer zone.

L.P. 25 The establishment of outdoor sport, recreation or leisure facilities to meet the needs of community could be directed to the suitable parts of the buffer zone.

L.P. 26 Mining activities and brick kilns could be permitted in the buffer zone, subject to their conforming to the restrictions to be imposed in the nature of minimum distances from roads, schools, public places and habitation etc., and further to strict atmospheric pollution restrictions.

L.P. 27 The ridge which extends as a spur from Delhi right upto Alwar and beyond and the forest areas adjacent to it need to be preserved carefully. No urbanisation proposals are to be entertained in areas falling in this ridge.

[E] TRANSPORT AND TELECOMMUNICATION POLICIES

OBJECTIVE

The Regional Transport strategy for the NCR should promote and support the economic development of the Region and relieve the capital of traffic congestion. As such it requires :

(i) to inter-connect among each other the regional urban centres lying in the outer areas of NCR.

(ii) to connect them with the capital by fast mode of transport which would require better road and rail connections.

(iii) to integrate road and rail services in the intra-urban area of Delhi and also in DMA.

(iv) to develop new loading and un-loading facilities outside Delhi Union Territory for goods coming from outside the region for distribution in Uttar Pradesh and Haryana so as to avoid unwanted load of good traffic on the roads of Delhi urban area.

Regional Transport Policy

ROADS

T.P. 1 Development of the stretches of NH-1 (Delhi-Panipat), NH-2 (Delhi-Palwal), NH-10 (Delhi-Rohtak), NH-8 (Delhi-Gurgaon), NH-24 (Delhi-Ghaziabad) and existing State highway between Ghaziabad-Meerut to four lane divided C/W to be known as M-1 Motor Way with acquisition of R/w, of 100 mts, within NCR including development of service roads in the built up area.

T.P. 2 Development of an inner and outer grid system of roads of the order of M-2 motor ways with certain common stretches which would be of two lane C/W initially with acquisition of full r/w of (60 metres within Seventh and Eight Plan period) and to four lane c/w finally by 2001 A.D. The inner grid is to follow the alignment of Sonepat-Baghpat-Meerut-Hapur-Bulandshahr-Sikandrabad-Faridabad-Gurgaon-Jhajjar-Rohtak-Gohana-Sonepat. The outer grid would connect Panipat-Muzaffar Nagar-Meerut-Hapur-Bulandshahr-Khurja-Palwal-Rewari-Jhajjar-Rohtak-Gohana-Panipat.

T.P. 3 Development of M-1 motor way between Rewari and Alwar.

T.P. 4 In consonance with the policy of developing a four tier system of settlements, road structure in the region would be evolved accordingly. Efforts would be to inter-connect the same order centres directly and the lower order centres to their nearest higher order centres. A system of feeder roads of higher standard would be evolved to connect the work centres/industrial estates with the nearest regional or sub-regional settlements.

RAIL

T.P. 5 Development of regional rail by-pass. This would pass through Meerut-Hapur-Bulandshahr-Khurja-Palwal-Sohna-Rewari-Jhajjar-Rohtak-Panipat.

T.P. 6 Conversion to broad-gauge of the metre gauge line between Delhi-Alwar.

T.P. 7 Identification and location decision of another rail terminal to decongest and solve the traffic problems faced by the existing terminals.

T.P. 8 Completion of electrification along the radial corridors, viz., Delhi-Panipat, Delhi-Meerut beyond Ghaziabad, Delhi-Rohtak and beyond Shakurbasti.

T.P. 9 Operation of EMU services on the corridors on the desired frequency.

T.P. 10 Operation of EMU services on the ring with required frequency, initially with a lead time of 25 minutes in peak period/direction along with extension of EMU services on three selected corridors (radially) viz., (i) Delhi-Ghaziabad, (ii) Delhi-Palwal

and (iii) Delhi-Shakurbasti which are already electrified replacing all the shuttle services to Shakurbasti, Ghaziabad and Palwal.

T.P. 11 Development of infrastructural inputs required for the operation of EMU services in selected corridors. This would involve some additional stations to be opened and certain other inputs besides raising of platforms to suit EMU coach operation. The corridors and actions needed in respective corridors are :

	Corridor	Station to be opened	Inputs required
1(a)	Delhi-Shahadara-Ghaziabad	Gandhinagar Shyamlal College Giani Border Mohan Nagar	Creation of new halt station and removal of the infringements to suit EMU
(b)	New Delhi Ghaziabad	Shakarpur B.E.L.	Creation of crossing and halt stations
2.	New Delhi-Palwal	Junction cabin	Creation of halt station
3.	New Delhi-Shakurbasti	Rampura cabin	Creation of halt station

T.P. 12 Augmentation of Delhi Transport Corporations fleet to provide feeder service to EMU service for smooth intra-urban travel and improve the efficiency of ring and radial rail service.

T.P. 13 Feasibility evaluation of development of four new corridors and extension of existing corridors in the lines :

New Delhi-Delhi-Shakurbasti-Rohtak

New Delhi-Delhi-Ghaziabad-Meerut

Ghaziabad-Khurja

Ghaziabad-Hapur

Delhi-Sonepat

Dayabasti-Azadpur

Brar Square-Delhi Cant

Palam Airport-Gurgaon

T.P. 14 The following main criteria would be taken into consideration besides the cost component :

- the needs of priority areas and new development and extension areas

- the extent to which such proposals would aid the objective of decongesting Delhi and would help in taking away to or generating activities in the outer areas of the region.
- benefits that such proposals would accrue for the existing industry and commerce for their expansion and employment generation.

T.P. 15 In selecting locations for new loading and un-loading facility centres priority and preference would be for locations that have greater potential/capacity to drain and diverge out maximum traffic.

T.P. 16 Formation of a single unified Transport Authority which may, besides other things, formulate and gain actions regarding fair structure of different modes, their gradation and combination.

POLICY FOR TELECOMMUNICATION FACILITIES IN THE NCR

T.C.P. 1 The foremost need of the region is the adequate and effective telecommunication network which would provide impetus to the dispersal and development of economic activities away from Delhi to out-lying areas. The National Capital Region advocates a three tier system for the development of economic activities in the region as a broad policy and has also recommended development of eight towns and complexes in the region on priority basis. Provision of reliable and adequate telecommunication facilities in the Delhi Metropolitan Area and in these selected towns as input has been considered necessary for preparing a realistic plan.

The following objectives are necessary for provision of telecommunication facilities in the selected towns and the towns falling in D.M.A.

- Full automatisation of telephone services
- Replacement of all life expired exchanges and other equipments
- Provision of telephone and telex connection practically on demand
- Provision of subscribers dialling facilities between Delhi and the priority towns and DMA towns

- Connection of priority towns and DMA towns with Delhi by reliable cable and radio media
- Provision of reliable trunk services either by direct dialling facilities or through demand service among the priority towns and DMA towns
- Provision of telegraph offices as justified

An integrated telecommunication system adopted on the above lines, in a way, is also likely to supplement the transportation network in the region thereby reducing the pressure on the transportation arteries proposed in the Plan.

[F] POLICY FOR PHYSICAL INFRASTRUCTURE

I.P. 1 Master Plans for providing water supply, sewerage and storm water drainage facilities in the selected towns should be prepared both for the existing areas proposed for development so as to offset the existing difficiencies as also to meet the estimated demands from these towns.

I.P. 2 The power supply should be un-interrupted and available in adequate quantity throughout the region. Without a satisfactory power supply throughout the region, the basic objective of National Capital Region cannot be achieved.

I.P. 3 All the 'under-construction' schemes falling in the region, especially the Narora atomic plant, need to be given top priority and completed in time.

I.P. 4 At present, the electricity tarrif is not uniform throughout the region. It may not be possible to have complete uniformity in tarrif rates throughout the region. However, electricity rates for industrial and commercial uses in the region need to be revised in such a way that Delhi becomes a 'less-preferred' area for industrial activities.

I.P. 5 The States (Haryana, Uttar Pradesh and Rajasthan) have demanded a sum of Rs. 684 crores to improve the quality of power supply in their sub-regions. This includes a sum of Rs. 420 crores for generation. It is suggested that as far as generation is concerned, the fund required for the same should be met from the normal State plan. With regard to laying of transmission and

distribution lines and construction of sub-stations, it is suggested that in the Seventh Plan, only those lines and sub-stations should be taken up which are required to improve the quality of power supply in 'priority towns'. In order to ensure that these towns get a satisfactory power supply, power should be supplied to these towns on preferential basis.

I.P. 6 As far as domestic supply is concerned, a 24-hour supply should be ensured in urban as well as rural areas. All the villages falling in the region should be electrified on priority basis. In order to make rural areas attractive for the urban dwellers, it is suggested that the domestic rates for rural areas should be much lower than that of urban areas.

[Copies of the details of the draft interim plan not enclosed. Revised interim Plan is included as Agenda Item No. 5 for the 3rd meeting of the Board]

SUPPLEMENTARY ITEM FOR THE PLANNING COMMITTEE MEETING TO BE HELD ON 21ST MAY 1986.

Subject : Examination of location of major projects in the National Capital Region by the National Capital Region Planning Board.

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Immediately after the constitution of the National Capital Region Planning Board, the Ministry of Urban Development informed all the Ministries and Departments of the Government of India about the objectives and the functions of the Board. Keeping in view the National Capital Region concept, it was pointed out that any decision involving major projects/employment generating activities within the Delhi Metropolitan Area or within the National Capital Region would require examination by the statutory Planning Board. The Ministries were requested to bring this position to the notice of all the Public Undertakings and Statutory Organisations.

2. The Indian Oil Corporation has now submitted a proposal for setting up of a modern LPG Bottling Plant in Tikrikalan, UT of Delhi on Rohtak Road for clearance by the Board. The particulars are as indicated below:-

a)	Capacity	:	50,000 MTPA.
b)	Area of land acquired	:	100 acres.
c)	Location	:	On Rt.side of Delhi Rohtak road near Gheora Rly. Stn. and FCI Godown.
d)	Government agencies involved	:	Delhi Development Authority and Delhi Administration for identification and acquisition of land. IOC for construction, commissioning and running the Plant.

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e) The plant is being constructed as per the recommendations of Vasudevan Committee constituted by Ministry of Energy(Department of Petroleum) Government of India vide Office Memorandum No.P-43011/12/83-MKT, dated 23.5.1983 and shall meet the requirements of Chief Controller of Explosives, Nagpur.

It has been stated that this project has been cleared by the Ministries of Defence and Energy.

3. The Board is in the process of preparing the comprehensive regional plan. The Board has prepared the draft interim development plan. The locational policy for industries envisages the following:-

(A) Strict Control within UT of Delhi

(i) While continuing the present policy of not promoting location of medium and large scale industries within Delhi, location of even small scale industries are to be restricted to those which are required either for providing or servicing the consumer needs of Delhi's population. All applications should be referred to a special group constituted by the Board for checking such industries.

(ii) All non-conforming industries occupying more than 500 square metres of floor space should be shifted outside Delhi. A committee should be set up to identify such industries for dispersal. The Committee should also be charged with the responsibility of selecting an alternative site for shifting these industries within the region.

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(B) Control outside Delhi but within the Delhi Metropolitan Area.

No large scale or medium scale industries should be permitted to be set up in the Delhi Metropolitan Area. Only small scale units should be permitted.

(C) Incentive for industries outside the Delhi Metropolitan Area but within the National Capital Region.

The towns selected for priority development in the plan should have a strong industrial content and incentives should be given for the location of large, medium and small scale industries by developing industrial estates and offering other incentives in these towns. In addition to these towns, there should be no restrictions on the growth of industries in the region except in the areas reserved for conservation.

4. As far as the proposal of Indian Oil Corporation is concerned, the area required is indicated as 100 acres of land. It is estimated that once commissioned the plant may generate employment for about 200 workmen. This will result in increased demand on the available services. Only those activities which directly serve the consumer needs of Delhi and are not hazardous in nature should be located in Delhi. Though the LPG Bottling Plant will serve the consumers in Delhi, it has to be examined whether it could not be located outside Delhi, taking into account the ecohomic viability, transportation facilities required and other relevant factors.

It is necessary to evolve a procedure to examine such cases for seeking the orders of the Board.

***

I M M E D I A T E

No.K.14011/27/86-NCRPB
Government of India
NCR Planning Board
'C' Wing, Nirman Bhavan

New Delhi, dated May 2, 1986

MEETING NOTICE

Subject:- Fifth meeting of the Planning Committee of the National Capital Region Planning Board to be held on May 16, 1986 at VIGYAN BHAVAN, New Delhi.

....

The next meeting of the Planning Committee of the National Capital Region Planning Board will be held on Friday the 16th May, 1986 at Vigyan Bhavan (Committee Room No.E), New Delhi, to discuss the draft of the 'Interim Development Plan for the National Capital Region'. The programme will be as under:-

10.00 Hrs to 13.00 Hrs. .. Discussion.
13.00 Hrs to 14.00 Hrs. .. Lunch.
14.00 Hrs to 17.00 Hrs. .. To continue discussion.

2. A copy of draft 'Interim Development Plan for the National Capital Region' is enclosed.

3. Kindly make it convenient to attend the meeting.

(Mrs V.R.Sundaram)
DEPUTY DIRECTOR
Tele:3012399/
3018743

Encl : As above.

To

1. Member Secretary, NCR Planning Board, New Delhi. (Shri M.Shankar).
2. Shri R.L.Pardeep, Joint Secretary(UD), Ministry of Urban Development, New Delhi.

.... 2

3. Shri Prem Kumar, Vice Chairman, Delhi Development Authority, New Delhi.

4. Shri J.K.Duggal, Secretary, Town and Country Planning Department, Government of Haryana, Chandigarh.

5. Shri A.P.Singh, Secretary, Housing and Urban Development Department, 2nd floor, Vikas Bhavan, Government of Uttar Pradesh, Janpath, Lucknow-260 002.

6. Shri R.Ramakrishna, Secretary, Local Self Government, Government of Rajasthan, Jaipur.

7. Shri P.S.Bhatnagar, Secretary(L&B), Delhi Administration, I.P.Estate, New Delhi-110 002.

8. Shri H.S.Mathur, Chief Town Planner, Government of Rajasthan, Jaipur.

9. Shri E.F.N.Ribeiro, Chief Planner, Town and Country Planning Organisation, Vikas Bhavan, I.P.Estate, New Delhi-2.

10. Shri N.S.Johri, Chief Town Planner, Government of Uttar Pradesh, Lucknow.

11. Shri G.Madhavan, Director, Town and Country Planning, Government of Haryana, Chandigarh.

12. Shri V.A.Valiaparambil, Joint Adviser (Transport), Planning Commission, New Delhi.

13. Shri E.S.Wakhle, Deputy Director General(TP), Ministry of Tele-Communications, Sanchar Bhavan, New Delhi.

14. Shri L.R.Kadiyali, Chief Engineer(Planning), Ministry of Shipping and Transport, New Delhi.

15. Shri R.M.Raina, Director(Planning), Ministry of Railways, New Delhi.

16. Shri Y.P.Gambhir, Director(Power), Ministry of Energy, Department of Power, New Delhi.

17. Shri S.K.Sharma, Chairman-cum-Managing Director, Housing and Urban Development Corporation, HUDCO House, Lodi Road, New Delhi-110 003.

J/-

INTERIM DEVELOPMENT PLAN
FOR
NATIONAL CAPITAL REGION

INTERIM DEVELOPMENT PLAN
NATIONAL CAPITAL REGION

DRAFT FOR DISCUSSION
IN THE MEETING OF THE
PLANNING COMMITTEE ON
16th May 1986

~~3 July 1986~~

June 86

NATIONAL CAPITAL REGION PLANNING BOARD
C-Wing, Nirman Bhavan, New Delhi-110011

I N D E X

SUMMARY OF POLICIES SUGGESTED FOR ADOPTION IN THE INTERIM PLAN FOR THE DEVELOPMENT OF NATIONAL CAPITAL REGION

INTRODUCTION

The population of Delhi has been growing at a very high rate since it became the national capital. While in comparison with the other towns of the country in terms of rate of growth it is one among the three cities which has been recording an average annual growth of more than 50% since 1951, among the four metropolitan cities, Delhi, which started at the bottom, is now third and if the trend continues as in the past, it will outstrip both Bombay and Calcutta and may rank as the first in terms of population by the 21st Century. While there is a need for containing the growth of the metropolitan cities in general, Delhi needs specialised attention, it being the national capital. On the one hand it is necessary to maintain - where it is satisfactory at present - and improve - where it is necessary - the amenities and environment of the city since it is an international city and it ought to demonstrate the image of the country. On the other hand being the national capital it is a sensitive city and any breakdown in the law and order situation resulting from the breakdown of any of the services would have serious repercussions. Thus, the raison-d'etre of the region is Delhi and any planning of the region has to start from Delhi outwards.

There is a felt need for containing the growth of population in Delhi. Thus, in suggesting a plan for the region measures have to be suggested which will curb the growth of population in Delhi. However, while suggesting these curbs it has to be ensured that the over-all quality of life in the city is not affected. In fact the objective is to enhance it. Similarly, while suggesting the plan for development of the region it has, at the same time, to be ensured that the measures suggested do not result in the region and the core area Delhi both growing at a faster rate than they have experienced in the past. Thus, the policies that have been suggested have taken into consideration the above aspects and while keeping the growth of population in the region as a whole to remain as projected by the various experts, a re-distribution

has been suggested so as to take the pressure off Delhi and provide for a planned and viable growth of the region.

PERSPECTIVE

The plan has been prepared with 2001 as the perspective. Even though with the fixing of 2001 A.D. as the horizon - the period of the plan gets reduced to 15 years or less, it has been felt necessary to stick to 2001 primarily on account of the fact that the Master Plan for Delhi is being prepared with the year 2001.

OBJECTIVE

With the regional population remaining at the projected 325 lakhs of which 234 lakhs will be urban and 91 lakhs rural in the year 2001, the main objective of the regional plan is to restrict the share of Delhi sub-region to 112 lakhs as against the projected 132 lakhs (or a 148.5 lakhs as projected by the Perspective Planning Wing of the Delhi Development Authority). While restricting the growth of Delhi it is necessary to ensure that the difference in the growth is contained within the region in a planned manner. It is also necessary that the resultant extra growth in the region outside Delhi is of such a nature that it will have an over-all effect in the entire region stimulating its regulated and orderly growth in and around the poles selected for development.

Mere restriction of population by itself will not be sufficient to improve the quality of life in Delhi. It is necessary that the green areas are preserved and the environment is conducive to a healthy growth. The present sprawl of urbanisation around Delhi is least conducive to promoting the above. It has, therefore, been felt necessary that in addition to restricting the population of Delhi it would also be necessary to contain the growth of urbanisation in the immediate environs of Delhi and hence certain restrictions are proposed for the area which is termed as the Delhi Metropolitan Area. Again, while containing the future growth of this area it is necessary that the existing situation is improved so that better integration with the core area is brought about so that without being points of attractions for the people from outside they become attractive for voluntary shifting of population from

the core area to these places.

If the growth of Delhi is to be restrained while keeping the regional growth as projected, it is necessary to stimulate induced development of some areas of the region. Various alternative strategies were discussed and it was decided that considering the financial, administrative, managerial and other constraints it would be advisable to restrict the induced growth to a small number of towns which have exhibited strong characteristics of growth in the past and which have the potential to absorb the increase in population given the necessary inputs. Accordingly, the towns of Meerut, Hapur, Bulandshahr-Khurja, Palwal, Alwar, Rewari-Bhiwadi-Dharuhera, Rohtak and Panipat have been identified as the towns or complexes that could be developed so as to absorb the increased population.

In the past the development of towns to stimulate induced growth of population has been synonymous with schemes of land acquisition and development. There had been a facile assumption that if serviced land requirements for the additional population is met the towns would automatically grow. This assumption has been proved to be in-correct and considering that the growth of cities is more on account of job seeking in-migrants rather than an employed person seeking a house or serviced land, it is necessary to provide an economic base for the growth of the towns. Similarly, in trying to curb the growth of population in Delhi the economic factors which govern such growth have to be carefully identified and steps suggested so as to contain this growth. The success of the entire proposals contained in the plan will depend on the economic measures rather than the other measures suggested. The other measures suggested are only to support, strengthen or to take care of the requirements of such economic growth.

Transport is essentially looked upon as a service. However, it has also its economic bye-products and a sound transport policy will not only service the population but also prove to be a catalyst for the growth of the identified areas and also channelise the direction of growth. The main objective of the transport plan for the region is to provide good connections to the central core area while discouraging the transit of goods and passengers through

the core area by providing alternative routes that will by-pass the core area. The by-passes will add an economic base for the development of these areas.

For the proper development of the region it is necessary to ensure the availability of the urban infrastructure of a quality and standard not very much inferior or different from that obtaining in Delhi. Accordingly, policies have been suggested for the provision of physical infrastructure and also for the development of power.

With the above objectives and suggested strategies in view, a package of policy directives to be adopted are enumerated below under the various headings :

[A] POPULATION POLICY

P.P. 1 To control the growth of population of Delhi to 112 lakhs by the year 2001.

P.P. 2 To control the growth of population in the towns in the Delhi Metropolitan Area so as to restrict it to a total of 37 lakhs by 2001, with the individiual towns having the growth restricted to accommodate the populations as mentioned below

Ghaziabad including Loni	11 lakhs
NOIDA	5.5 lakhs
Faridabad	10 lakhs
Gurgaon	7 lakhs
Bahadurgarh	2 lakhs
Kundli	1.5 lakhs
Rural	1 lakh

P.P. 3 The region is to be planned for a total population of 325 lakhs with an urban component of 234 lakhs.

[B] SETTLEMENT PATTERN

S.P. 1 To counter-act the pull factors exerted by Delhi and also to absorb the difference in the projected growth and the assigned population of both Delhi and the Delhi Metropolitan Area, the following towns in the region are to be developed for the populations noted against each :

Meerut	13 lakhs
Hapur	6 lakhs

Bulandshahr-Khurja	10 lakhs
Palwal	3 lakhs
Alwar	5 lakhs
Rewari-Bhiwadi-Dharuhera	3 lakhs
Rohtak	5 lakhs
Panipat	5 lakhs

Based on the above urban centres a four tier system of settlements has to be evolved to include regional centres, sub-regional centres, service centres and basic villages. The funtional character of these centres are to be identified in terms of the available infra-structural and social services.

[C] POLICY REGARDING ECONOMIC ACTIVITIES

Both in order to curb the growth of population in Delhi and to induce growth of population in selected towns the following three major employment generators have been identified for dispersal.

1. **Location of industries**
2. **Location of Central Government & Public Sector Offices**
3. **Location of Whole-sale & Distributive Trade & Commerce**

E.P. 1 LOCATIONAL POLICY FOR INDUSTRIES

(a) Strict Control within Union Territory of Delhi

(i) While continuing the present policy of not promoting location of medium and large scale industries within Delhi, location of even small scale industries are to be restricted to those which are required either for providing or servicing the consumer needs of Delhi's population. All applications should be referred to a **special Group** constituted by the **Board** for checking such **industries.**

(ii) All non-conforming industries occupying more than 500 square metres of floor space should be shifted outside Delhi. A Committee should be set up to identify such industries for dispersal. The Committee should also be charged with the responsibility of selecting an alternative site for shifting these industries within the region.

(b) Control outside Delhi but within the DMA

No large scale or medium scale industries should be permitted to be set up in the Delhi Metropolitan Area. Only small scale

units should be permitted.

(c) Incentive for industries outside the DMA but within the National Capital Region

The towns selected for priority development in the plan should have a strong industrial content and incentives should be given for the location of large, medium and small scale industries by developing industrial estates and offering other incentives in these towns. In addition to these towns, there should be no restrictions on the growth of industries in the Region except in the areas reserved for conservation.

E.P. 2 LOCATIONAL POLICY FOR CENTRAL GOVERNMENT AND PUBLIC SECTOR OFFICES

(a) Strict control within the Union Territory of Delhi

With regard to Government offices, the present policy and mechanism for screening the location of new government offices and expansion of existing government offices should be continued. The main criteria for location of offices in the capital should be that they perform the Ministerial functions, protocol function or liaison function which by their nature cannot be performed anywhere else except in the national capital. The existing offices which do not perform any of the above functions should be shifted from Delhi. The jurisdiction of the Committee which already exists in Government for scrutinising and screening of opening of new government offices and expansion of government offices in Delhi should be enlarged to include the public sector offices. The Committee should further identify those public sector offices or parts of their offices whose location in Delhi is not justified on the above three criteria.

(b) Control outside Delhi but within the D.M.A.

(i) A similar control on the opening of new central government and public sector offices in the DMA towns should be exercised. Relocation or expansion of government offices which have ministerial, protocol or liaison functions which make it incumbent upon them to be located in Delhi should be encouraged to be shifted or opened in the DMA towns.

(ii) In so far as public sector undertakings are concerned

the restrictions on their opening new offices or expanding the existing ones should apply equally to the DMA area. However, relocation of those offices whose existance or continuance in Delhi are justified may be encouraged.

E.P. 3 LOCATIONAL POLICY FOR WHOLE-SALE AND DISTRIBUTIVE TRADE AND COMMERCE

(i) Disincentives within Delhi

An approach of disincentives to the wholesale trade which are not directly consumed in Delhi should be adopted. Only those wholesale trades, atleast 60% of which are directly used and consumed in Delhi and are not hazardous in nature and do not require extensive space, should be allowed to continue and developed in Delhi.

(ii) Controlled development outside Delhi but within D.M.A.

The policy of checks and disincentives is also to be followed in case of DMA towns but with some relaxations. The whole-sale trades which are directly used and consumed in Delhi and DMA towns should only be allowed. There are certain whole-sale trades in Delhi which are hazardous becuase of their location in congested areas and due to bulk handling activities such as plastic and PVC goods, chemicals, timber, food grains, iron and steel and other building materials. These whole-sale trades should be encouraged to develop in DMA towns.

(iii) Outside D.M.A. but within NCR

It is proposed that as a matter of policy, incentives, concessions and infrastructure should be made available in the regional towns to encourage and accelerate the growth of trade. New trade functions with high growth potential should be identified and located outside Delhi and DMA to cater to the specified roles assigned to the selected towns.

[D] POLICY REGARDING LAND USE

L.P. 1 POLICY FOR AGRICULTURAL LAND

Agriculture froms an important part of the economy of the NCR. Roughly 80% of the total area of the region is used for agriculture and its allied activities and more than 50% of the total workers

are engaged in primary sector activity. Therefore, it is imperative to design policies for agricultural development.

L.P. 2 The new employment opportunities are proposed in the non-agricultural sector and consequent concentration of population in the selected priority settlements would need expansion and the expansion would have to be met mostly from the existing agricultural land. This necessitates a rational policy of utilisation of less valuable land for urban expansion and as far as possible un-productive or barren land for location of urban/industrial centres.

L.P. 3 The reduction of agricultural land may be caused by the creation of lakes, reservoirs, flood protection works, urban water supply schemes and irrigation works. This also calls for an intensive utilisation of available agricultural land for production purposes.

L.P. 4 Intensive food production units which are subject to planning control will only be permitted in the rural areas where they do not conflict with policies for conservation or environmental protection. The improvement for reclamation of land for agricultural use will normally be permitted where this would not seriously conflict with landscape, archeological or nature conservation policies. Development will not normally be permitted where it would result in the permanent loss of forest land.

L.P. 5 The land reclaimed by flood protection have to be reserved for agriculture.

L.P. 6 **POLICY FOR FOREST DEVELOPMENT**

L.P. 7 The policy for development of forests should aim at preservation, improvement of existing forest areas in the Alwar tehsil and along the Ganga river in the U.P. Sub-region.

L.P. 8 Tree plantation should be carried on the cultivable wastes, barren lands and public lands.

L.P. 9 In each settlement tree plantation programme like social forestry should be speeded up for the amelioration of local, physical and economic condition and for the production of fuel wood for local consumption.

L.P. 10 Restriction on conversion of forest lands for agricultural purpose.

L.P. 11 **POLICY FOR LAND FOR URBAN DEVELOPMENT**

The projected urban population of 234 lakhs in the region means an addition of 143 lakhs to the urban population existing in 1981. For this additional population to be accommodated nearly 2.8 lakh hectares of land would be required on existing overall average density of the towns in the region. However, it is necessary to conserve agricultural and other lands and minimise the area of land getting urbanised. If properly planned, most of the existing towns, especially the DMA towns and priority towns can accommodate additional population by re-densification thus reducing the need for additional land. It has been estimated that in Delhi urban area the proposed addition of 53 lakh population could be accommodated in 17000 hectares. Similarly, in the DMA towns the additional ~~29.5~~ 28.32 lakhs can be accommodated in 10000 hectares. In the 8 towns and complexes selected for priority development, land of the order of 20000 hectares could be sufficient. Thus, it would be seen that for accommodating nearly 120 lakhs a total additional area of 47000 hectares may be adequate.

L.P. 12 **POLICY FOR REGIONAL RECREATIONAL AREAS**

L.P. 13 Area of general level amenities as regional parks in the proximity of the metropolis could be developed.

L.P. 14 River front as recreational areas by developing them and making them more accessible for such use.

L.P. 15 Historical monument, natural and areas of scenic beauty, both existing and potential, and forest land, should be preserved.

L.P. 16 Parks in rural areas noted for their landscape and scenic beauty which could be used as picnic spots.

L.P. 17 National Park/wild life/Bird sanctuary vicinity of the region could be developed for tourist attraction.

L.P. 18 **POLICY FOR NATURE CONSERVATION**

To achieve the overall development of the NCR without destruction of its natural environment all economic activities need to be well planned. Special attention should be given to check the damage to the environment by man's interference for development purpose.

L.P. 19 Development which is likely to affect adversely sites of special scenic beauty or national or local nature reserves will not be permitted.

L.P. 20 Full account will be taken of feature of importance to nature conservation when considering major development proposals.

L.P. 21 Special attention will also be given to protection of special landscape areas and areas sensitive to development pressures.

L.P. 22 **POLICY FOR GREEN BUFFER**

The NCR plan aims to improve the physical environment of the whole region. This would be achieved by ensuring both existing uses within the region and the development which are contemplated by the proposals. The green buffer will support the promotion of the priority settlements/areas by controlling the growth of their built up areas. Besides, the green buffer will prevent neighbouring settlements from merging and help to preserve their special character.

L.P. 23 The character of the buffer zone will be retained, protected and enhanced wherever possible by safeguarding areas of mainly open rural areas to take account of the interest and needs of agriculture and provide a source of recreation.

L.P. 24 The green buffer zone policies are designed to restrain the encroachment of urban activities into the open rural areas. The buffer zone could be used for the purposes of agriculture, horticulture, forestry and other uses appropriate to the character and function of the buffer zone.

L.P. 25 The establishment of outdoor sport, recreation or leisure facilities to meet the needs of community could be directed to the suitable parts of the buffer zone.

L.P. 26 Mining activities and brick kilns could be permitted in the buffer zone, subject to their conforming to the restrictions to be imposed in the nature of minimum distances from roads, schools, public places and habitation etc., and further to strict atmospheric pollution restrictions.

L.P. 27 The ridge which extends as a spur from Delhi right upto Alwar and beyond and the forest areas adjacent to it need to be preserved carefully. No urbanisation proposals are to be entertained in areas falling in this ridge.

[E] TRANSPORT AND TELECOMMUNICATION POLICIES

OBJECTIVE

The Regional Transport strategy for the NCR should promote and support the economic development of the Region and relieve the capital of traffic congestion. As such it requires :

(i) to inter-connect among each other the regional urban centres lying in the outer areas of NCR.

(ii) to connect them with the capital by fast mode of transport which would require better road and rail connections.

(iii) to integrate road and rail services in the intra-urban area of Delhi and also in DMA.

(iv) to develop new loading and un-loading facilities outside Delhi Union Territory for goods coming from outside the region for distribution in Uttar Pradesh and Haryana so as to avoid unwanted load of good traffic on the roads of Delhi urban area.

Regional Transport Policy

ROADS

T.P. 1 Development of the stretches of NH-1 (Delhi-Panipat), NH-2 (Delhi-Palwal), NH-10 (Delhi-Rohtak), NH-8 (Delhi-Gurgaon), NH-24 (Delhi-Ghaziabad) and existing State highway between Ghaziabad-Meerut to four lane divided C/W to be known as M-1 Motor Way with acquisition of R/w, of 100 mts, within NCR including development of service roads in the built up area.

T.P. 2 Development of an inner and outer grid system of roads of the order of M-2 motor ways with certain common stretches which would be of two lane C/W initially with acquisition of full r/w of (60 metres within Seventh and Eight Plan period) and to four lane c/w finally by 2001 A.D. The inner grid is to follow the alignment of Sonepat-Baghpat-Meerut-Hapur-Bulandshahr-Sikandrabad-Faridabad-Gurgaon-Jhajjar-Rohtak-Gohana-Sonepat. The outer grid would connect Panipat-Muzaffar Nagar-Meerut-Hapur-Bulandshahr-Khurja-Palwal-Rewari-Jhajjar-Rohtak-Gohana-Panipat.

T.P. 3 Development of M-1 motor way between Rewari and Alwar.

T.P. 4 In consonance with the policy of developing a four tier system of settlements, road structure in the region would be evolved accordingly. Efforts would be to inter-connect the same order centres directly and the lower order centres to their nearest higher order centres. A system of feeder roads of higher standard would be evolved to connect the work centres/industrial estates with the nearest regional or sub-regional settlements.

RAIL

T.P. 5 Development of regional rail by-pass. This would pass through Meerut-Hapur-Bulandshahr-Khurja-Palwal-Sohna-Rewari-Jhajjar-Rohtak-Panipat.

T.P. 6 Conversion to broad-gauge of the metre gauge line between Delhi-Alwar.

T.P. 7 Identification and location decision of another rail terminal to decongest and solve the traffic problems faced by the existing terminals.

T.P. 8 Completion of electrification along the radial corridors, viz., Delhi-Panipat, Delhi-Meerut beyond Ghaziabad, Delhi-Rohtak and beyond Shakurbasti.

T.P. 9 Operation of EMU services on the corridors on the desired frequency.

T.P. 10 Operation of EMU services on the ring with required frequency, initially with a lead time of 25 minutes in peak period/direction along with extension of EMU services on three selected corridors (radially) viz., (i) Delhi-Ghaziabad, (ii) Delhi-Palwal

and (iii) Delhi-Shakurbasti which are already electrified replacing all the shuttle services to Shakurbasti, Ghaziabad and Palwal.

T.P. 11 Development of infrastructural inputs required for the operation of EMU services in selected corridors. This would involve some additional stations to be opened and certain other inputs besides raising of platforms to suit EMU coach operation. The corridors and actions needed in respective corridors are :

	Corridor	Station to be opened	Inputs required
1(a)	Delhi-Shahadara-Ghaziabad	Gandhinagar Shyamlal College Giani Border Mohan Nagar	Creation of new halt station and removal of the infringements to suit EMU
(b)	New Delhi Ghaziabad	Shakarpur B.E.L.	Creation of crossing and halt stations
2.	New Delhi-Palwal	Junction cabin	Creation of halt station
3.	New Delhi-Shakurbasti	Rampura cabin	Creation of halt station

T.P. 12 Augmentation of Delhi Transport Corporations fleet to provide feeder service to EMU service for smooth intra-urban travel and improve the efficiency of ring and radial rail service.

T.P. 13 Feasibility evaluation of development of four new corridors and extension of existing corridors in the lines :

New Delhi-Delhi-Shakurbasti-Rohtak

New Delhi-Delhi-Ghaziabad-Meerut

Ghaziabad-Khurja

Ghaziabad-Hapur

Delhi-Sonepat

Dayabasti-Azadpur

Brar Square-Delhi Cant

Palam Airport-Gurgaon

T.P. 14 The following main criteria would be taken into consideration besides the cost component :

- the needs of priority areas and new development and extension areas

- the extent to which such proposals would aid the objective of decongesting Delhi and would help in taking away to or generating activities in the outer areas of the region.
- benefits that such proposals would accrue for the existing industry and commerce for their expansion and employment generation.

T.P. 15 In selecting locations for new loading and un-loading facility centres priority and preference would be for locations that have greater potential/capacity to drain and diverge out maximum traffic.

T.P. 16 Formation of a single unified Transport Authority which may, besides other things, formulate and gain actions regarding fair structure of different modes, their gradation and combination.

POLICY FOR TELECOMMUNICATION FACILITIES IN THE NCR

T.C.P. 1 The foremost need of the region is the adequate and effective telecommunication network which would provide impetus to the dispersal and development of economic activities away from Delhi to out-lying areas. The National Capital Region advocates a three tier system for the development of economic activities in the region as a broad policy and has also recommended development of eight towns and complexes in the region on priority basis. Provision of reliable and adequate telecommunication facilities in the Delhi Metropolitan Area and in these selected towns as input has been considered necessary for preparing a realistic plan.

The following objectives are necessary for provision of telecommunication facilities in the selected towns and the towns falling in D.M.A.

- Full automatisation of telephone services
- Replacement of all life expired exchanges and other equipments
- Provision of telephone and telex connection practically on demand
- Provision of subscribers dialling facilities between Delhi and the priority towns and DMA towns

- Connection of priority towns and DMA towns with Delhi by reliable cable and radio media
- Provision of reliable trunk services either by direct dialling facilities or through demand service among the priority towns and DMA towns
- Provision of telegraph offices as justified

An integrated telecommunication system adopted on the above lines, in a way, is also likely to supplement the transportation network in the region thereby reducing the pressure on the transportation arteries proposed in the Plan.

[F] POLICY FOR PHYSICAL INFRASTRUCTURE

I.P. 1 Master Plans for providing water supply, sewerage and storm water drainage facilities in the selected towns should be prepared both for the existing areas proposed for development so as to offset the existing difficiencies as also to meet the estimated demands from these towns.

I.P. 2 The power supply should be un-interrupted and available in adequate quantity throughout the region. Without a satisfactory power supply throughout the region, the basic objective of National Capital Region cannot be achieved.

I.P. 3 All the 'under-construction' schemes falling in the region, especially the Narora atomic plant, need to be given top priority and completed in time.

I.P. 4 At present, the electricity tarrif is not uniform throughout the region. It may not be possible to have complete uniformity in tarrif rates throughout the region. However, electricity rates for industrial and commercial uses in the region need to be revised in such a way that Delhi becomes a 'less-preferred' area for industrial activities.

I.P. 5 The States (Haryana, Uttar Pradesh and Rajasthan) have demanded a sum of Rs. 684 crores to improve the quality of power supply in their sub-regions. This includes a sum of Rs. 420 crores for generation. It is suggested that as far as generation is concerned, the fund required for the same should be met from the normal State plan. With regard to laying of transmission and

distribution lines and construction of sub-stations, it is suggested that in the Seventh Plan, only those lines and sub-stations should be taken up which are required to improve the quality of power supply in 'priority towns'. In order to ensure that these towns get a satisfactory power supply, power should be supplied to these towns on preferential basis.

I.P. 6 As far as domestic supply is concerned, a 24-hour supply should be ensured in urban as well as rural areas. All the villages falling in the region should be electrified on priority basis. In order to make rural areas attractive for the urban dwellers, it is suggested that the domestic rates for rural areas should be much lower than that of urban areas.

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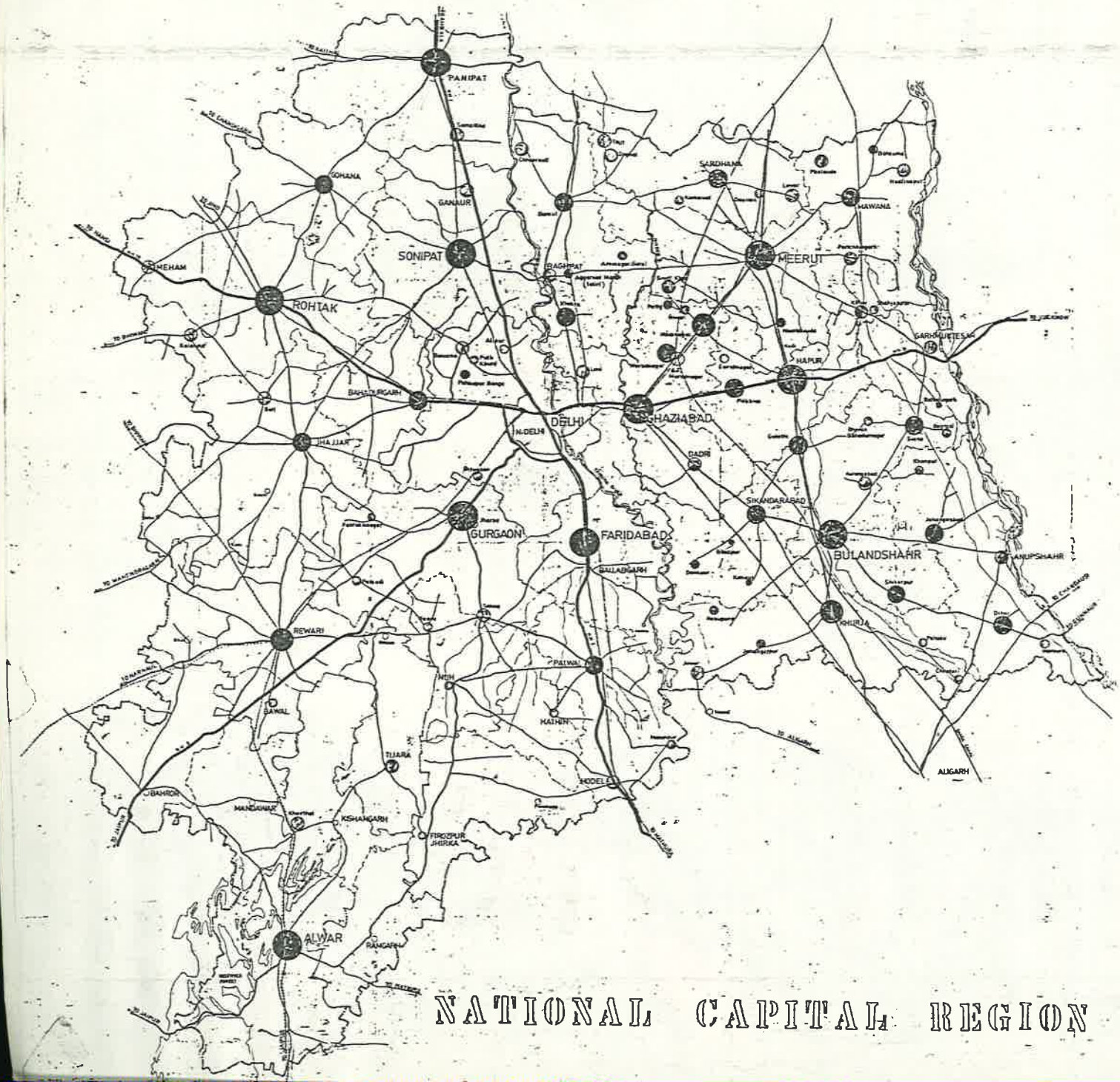


SETTLEMENT PATTERN–198

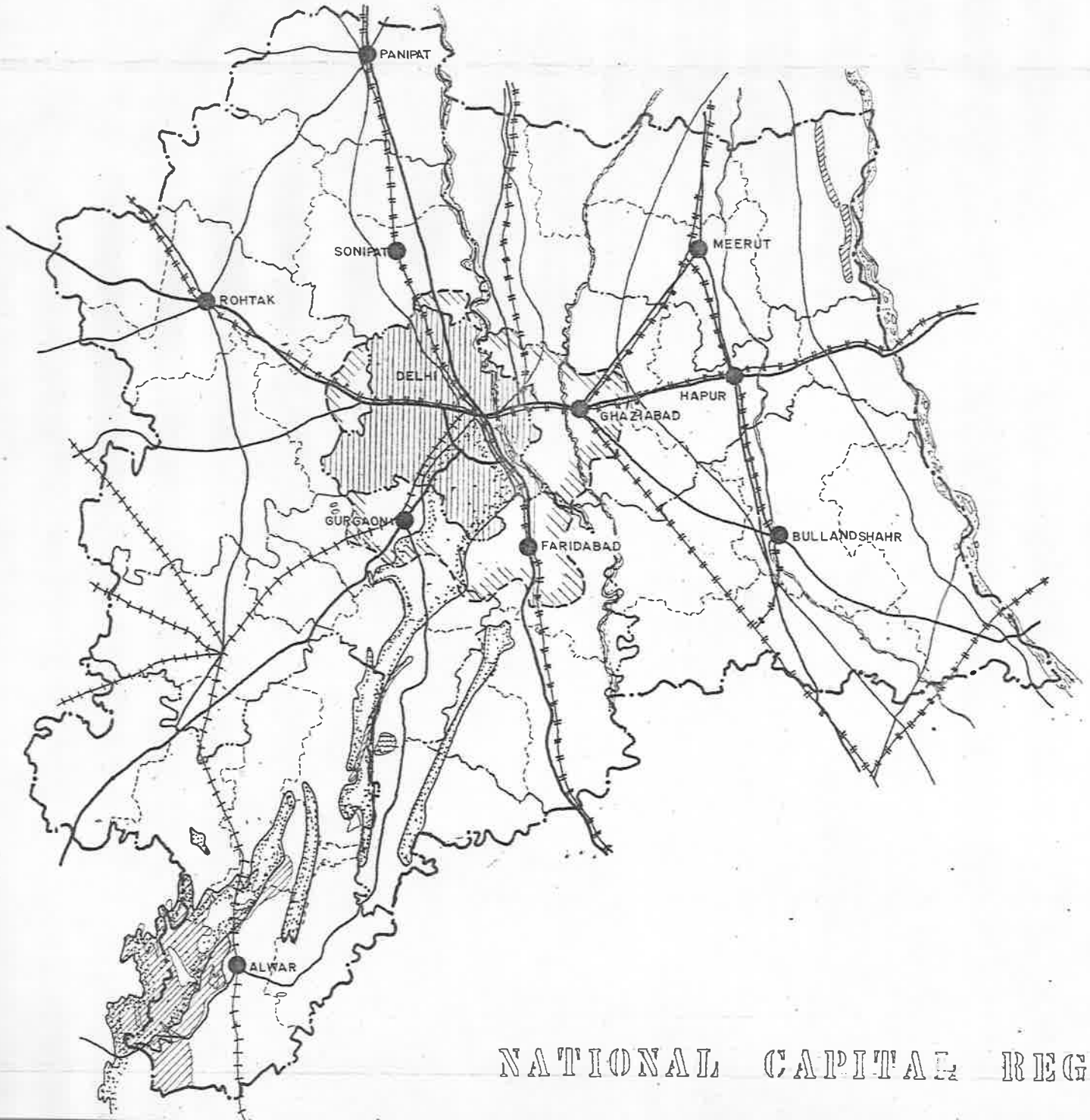
BOUNDARIES
- N.C.R
- STATE
- DISTRICT
- TEHSIL

TRANSPORT NETWORK
- NATIONAL HIGHWAY
- STATE HIGHWAY
- OTHER ROADS
- RAILWAYS B.G
- RAILWAYS M.G

TOWNS
- CLASS I
- CLASS II
- CLASS III
- CLASS IV
- CLASS V
- CLASS VI
- RURAL SETTLEMENTS

PHYSICAL FEATURES
- RIVERS
- CANALS
- WATER SHEETS

NATIONAL CAPITAL REGION



EXISTING LANDUSE

LEGEND

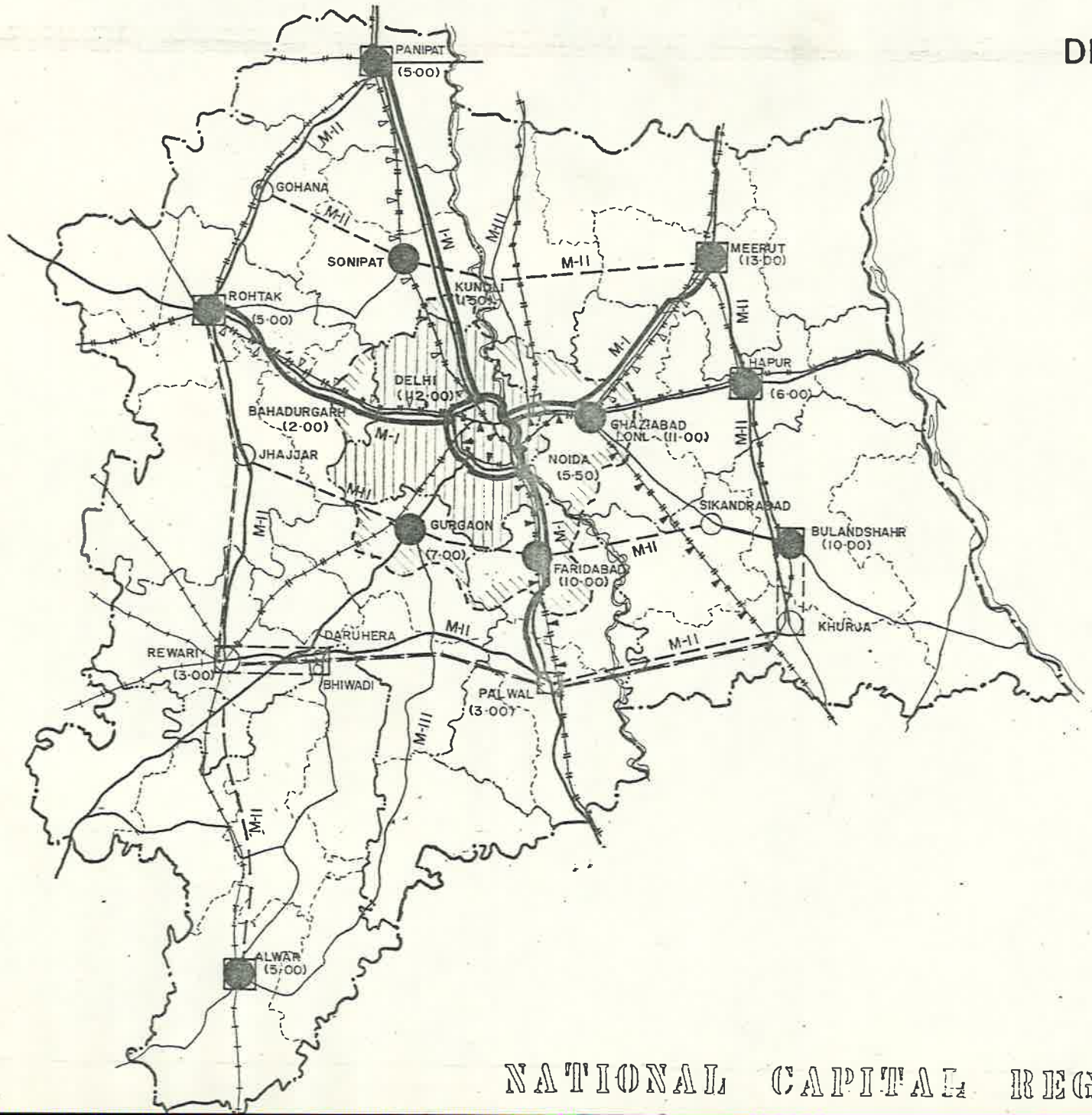
- N.C.R BOUNDARY
- STATE BOUNDARY
- D.M.A BOUNDARY
- DISTRICT BOUNDARY
- TEHSIL BOUNDARY

- NATIONAL HIGHWAY
- STATE HIGHWAY
- RAILWAYS B.G
- RAILWAYS M.G

- RIDGE AREA
- FOREST
- RIVERS
- CANALS
- OTHER WATER BODIES
- MAJOR TOWNS

NATIONAL CAPITAL REGION

DEVELOPMENT PROPOSALS



LEGEND

- N.C.R.BOUNDARY
- STATE BOUNDARY
- D.M.A.BOUNDARY
- DISTRICT BOUNDARY
- TEHSIL BOUNDARY

TRANSPORT NETWORK

- M-I – R/W 100 METRES
- M-II – R/W 60 METERS
- M-III – R/W 45 METERS
- RAILWAY.. BROAD GAUGE
- METRE GAUGE
- M.G.TO BE CONVERTED TO B.G.
- PROPOSED RLY. LINE
- RLY. TRACK ELECTRIFIED
- RLY.TRACK TO BE ELECTRIFIED

TOWNS

- CLASS I
- CLASS II
- CLASS III

PRIORITY TOWN
PROPOSED POPULATION - 2001 (IN LAKHS)

HAPUR
(6·00)

NATIONAL CAPITAL REGION

CHAPTER - A

DEMOGRAPHIC FEATURES AND SETTLEMENT PATTERN

POPULATION POLICY

1.1.0 Population-Growth in Metropolitan Towns

1.1.1 India's urban population constitutes almost one-fourth of its total population. The 1981 Census figures reveal that urbanites formed about 23.3% of the total population whereas the corressponding figure in 1951 was 17.30%. Since the beginning of this century, the highest growth rate in urban population has been registered during the last decade(1971-81). The growth in urban population of India from 1901-1971 can be seen in the table given below (Table 1).

TABLE 1 - GROWTH OF URBAN POPULATION IN INDIA: 1901-1971

Census Year.	Total urban population (in millions)	Percentage urban population to total population	Percentage growth in the urban population during the decade ended in
1901	25.8	10.8	-
1911	25.9	10.3	0.3
1921	28.1	11.2	8.3
1931	33.5	12.0	19.1
1941	44.2	13.8	32.0
1951	62.4	17.3	41.4
1961	78.9	18.0	26.4
1971	109.1	19.9	38.2
1981	159.73*	23.3	46.4

Source: 1. Census of India 1971:General Population Tables-Part IIA(i), India

2. Census of India, 1981:General, Population Tables, Part IIA(i) India

* Includes projected population of Assam for 1981.

... 2

1.1.2 The growth rate in urban population has always been higher than the growth rate in total population, since 1911. Confining the analysis to the period since the beginning of the planning era, one observes that the gap in the growth rates of these two has been widest (about 21 per cent) during the last decade(1971-81). The decadal growth rate of total population during the period 1951-81 has been ranging between 21% and 25% but in case of urban population, it jumped up from about 26% during 1951-61 to about 46% during 1971-81. The absolute population figures and decadal growth rate are furnished in the following table(Table 2).

TABLE 2 : GROWTH OF POPULATION IN INDIA-1951-81

Year	Total popn. (in million)	Decadal growth rate (%)	Rural popn. (in million)	Decadal growth rate (%)	Urban popn. (in million)	Decadal growth rate (%)
1951	361.09	-	298.65	-	62.44	-
1961	439.24	21.5	360.30	20.64	78.94	26.42
1971	548.16	24.8	439.05	21.86	109.11	38.22
1981	685.18*	25.0	525.45	19.68	159.73	46.39

* Includes projected population of Assam for 1981.

1.1.3 The urban population(1981) is distributed over 4029 urban settlements. However, the twelve metropolitan towns viz., Calcutta, Bombay, Delhi, Madras, Hyderabad, Pune, Ahmedabad, Bangalore, Kanpur, Nagpur, Jaipur and Lucknow, alone account for one-fourth of the total urban population.

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Further in relation to total population, the twelve metropolitan towns alone account for about 6% of the total population of India. The major metropolitan cities, viz., Calcutta, Delhi, Bombay, and Madras taken together, share about one-sixth(17.2%) of India's urban population and about 4% in terms of total population of India(Table 3).

TABLE 3 : POPULATION IN METROPOLITAN CITIES-1981

City	Population (1981)	Percentage to urban popn. of the State in which the city is located.	Percentage to popn. of India	Percentage to total popn. of the State in which the city is located.	Percentage to popn. of India
Calcutta UA	9194018	63.60	5.75	16.84	1.34
Gr.Bombay UA	8243405	37.47	5.16	13.12	1.20
Delhi UA	5729283	99.31	3.59	92.12	0.84
Madras UA	4289347	26.90	2.69	08.86	0.63
Hyderabad UA	2545836	20.34	1.59	4.74	0.37
Ahmedabad UA	2548057	24.06	1.60	7.48	0.37
Bangalore UA	2921751	27.21	1.83	7.86	0.43
Kanpur UA	1639064	8.24	1.03	1.48	0.24
Pune UA	1686109	7.68	1.06	2.69	0.25
Nagpur UA	1302066	5.91	0.81	2.07	0.19
Jaipur UA	1015160	14.01	0.63	2.95	0.15
Lucknow UA	1007604	5.07	0.63	0.91	0.15
Total	42121700		26.36		6.15

Note: UA - Urban Agglomeration
Source: Census of India, 1981 - Primary Census Abstract, Part II(B)(I), India.

Among the twelve metropolitan towns, Calcutta and Bombay account for more than 5% each of the total urban population of India. Highest concentration of urban population is found in Calcutta(about 6%). In relation to the total population of

... 4

India, Calcutta and Bombay account for more than 1% each.

1.1.4 Looking at the propotion of the towns population to the respective States Urban population(Table 3), it is observed that seven cities viz., Calcutta, Bombay, Delhi, Madras, Hyderabad, Ahmedabad and Bangalore account for more than 20% of the respective States urban population. Calcutta accounts for about 64% of the total urban population of West Bengal and Delhi shares 99% of the UT's urban population. In case of Delhi, the situation is obvious becuase UT's area is very small, None of the other cities(among the twelve)account for more than 40% of their respective States urban population. As regards proportion of towns population to total population of the respective State, Calcutta, Bombay and Delhi accommodate more than 10% of the respective States population. About 17% of the population of West Bengal live in Calcutta. In case of Bombay, the corressponding figure is about 13%. As far as Madras is concerned, its inhabitants constitute about 9% of the total inhabitants of Tamil Nadu.

1.1.5 Among the twelve metropolitan towns, Delhi has always been growing at a fast rate since the beginning of the planning era. Its decadal growth rate has always been more than 50% since 1951 (Table 4). Though Calcutta and Bombay rank higher than Delhi in

.... 5

terms of population(1981), their growth rates have always been much lesser than that of Delhi.

TABLE 4: GROWTH OF POPULATION IN METROPOLITAN CITIES 1951-81

City	Population in				Growth rate %		
	1951	1961	1971	1981	51-61	61-71	71-81
Calcutta UA	4588910	5736697	7031382	9194018	25.0	22.6	30.8
Gr.Bombay UA	2966902	4151056	5970575	8243405	39.9	43.8	38.2
Delhi UA	1437134	2359408	3647023	5729283	64.2	54.6	57.1
*Hyderabad UA	1127581	1248969	1796339	2545836	10.8	43.8	41.7
Ahmedabad UA	877329	1206001	1741522	2548057	37.5	44.4	46.3
Bangalore UA	778977	1199931	1653779	2921751	54.6	37.8	76.7
Kanpur UA	705383	971062	1275242	1639064	37.7	31.3	28.5
Pune UA	605504	790798	1135034	1686109	30.6	43.5	48.5
Nagpur UA	485264	690302	930459	1302066	42.2	34.8	39.9
Jaipur UA	304380	410376	636768	1015160	34.8	55.2	59.4
Lucknow UA	496861	655673	813982	1007604	32.0	24.1	23.8
Total	15916558	21365775	29802035	42121700	34.2	39.5	41.3
*Madras U.A	1542333	1944502	3169930	4289347	26.1	63.0	35.3

U.A - Urban Agglomeration

Source: 1. Census of India 1971-Part IIA(i), General Population Tables, India.

2. Census of India 1981-Part IIB(i), Primary Census Abstract, India.

If Delhi continues to grow at the rate it is growing at present, it will overtake Bombay and Calcutta very soon. Among the four major metropolitan citites, viz., Calcutta, Bombay, Delhi and Madras, Delhi not only registered the highest growth rate(57%) during 1971-81 but its rate was also much higher than that of its immediate follower viz., Greater Bombay(38%). If all the twelve metropolitan towns are taken into account, only Bangalore(77%) and Jaipur (59%) grew at higher rates than Delhi

.... 7

during 1971-81. Bangalore registered the highest growth rate during 1971-81. Considering the population growth since 1951, it is observed that population of Kanpur and Lucknow(both from UP) have been increasing at a declining rate. In case of Ahmedabad, Pune and Jaipur, the growth rates depict an increasing trend. Other cities figure uniform growth trend over years. Metropolitan population growth has been impressive indicating higher attration to migrants. All the metropolitan cities except Lucknow have grown at rates higher than the national average (25%) during 1971-81.

1.2.0 Constituent Area:

1.2.1 As delineated, the National Capital Region extends over an area of 30,242 sq.kms. in three States namely Haryana, Uttar Pradesh and Rajasthan and Union territory of Delhi. The constituent area of each sub-region are as under:

a. Union territory of Delhi(1483 sq.kms)
b. Haryana sub-region(13413 sq.kms) comprising Faridabad, Gurgaon, Rohtak and Sonepat districts; Rewari and Bawal tehsils of Mahendragarh district and Panipat tehsil of Karnal district.
c. Uttar Pradesh sub-region(10853 sq.kms)comprising 3 districts hamely Meerut, Ghaziabad and Bulandshahr.
d. Rajasthan sub-region(4493 sq.kms) comprising Six tehsils of Alwar district namely Alwar, Ramgarh,

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Behroor, Mandawar, Kishangarh and Tijara.

1.3.0 Population distribution.

1.3.1 National Capital Region accounted for a population of 191.93 lakhs persons in 1981 which registers an increase of 35.30% over 1971. Of this total population, Uttar Pradesh sub-region accounted for a maximum share of 36.31% followed by UT of Delhi(32.39%) Haryana (25.73%) and Rajasthan(15.59%) sub-region(Table 5).

1.3.2 While National Capital Region in total registered 35.30% growth over the decade 1971-81, the sub-regions have varied rates. Delhi UT exhibited a growth of 52.92% followed by Rajasthan (41.73%), Haryana(30.02%) and Uttar-Pradesh(28.09%) sub-regions.

1.3.3 Similarily net addition to the decadal (1971-81) increase in population has been mainly from Delhi UT accounting for 41.91% of net increase followed by Uttar Pradesh(29.75%) and Haryana (22.19%). Owing to its smaller size and lesser population, inspite of registering an impressive 41.73% decadal growth, Rajasthan sub-region contributed only 6.15% of increased population in National Capital Region.

1.3.4 Urban population has been increasing steadily in National Capital Region over years. Nearly 50% of population in National Capital Region resides in urban areas in 1981. The 90.98 lakhs Urban population in 1981 is the result

....9

of an impressive growth of 64.40% over 1971. From 29.4% in 1951 the urban population constituted 34.68% and 39.28% in successive decades and reached 47.40% of total population in 1981.

1.3.5 Delhi Urban Area forms the biggest urban area of National Capital Region and as such accommodated 63.4% of urban population of National Capital Region followed by Uttar Pradesh (21.4%), Haryana(13.30%) and Rajasthan (1.9%) Sub-region.

1.4.0 Migration Pattern:

1.4.1 The population of Delhi has been growing at a rapid pace since independence. The partition of the country in 1947 resulted in a large inflow of refugees into Delhi. In addition the attainment of independence and the resultant need to develop the Indian Capital created a huge demand for manpower and therefore there was a huge influx of population into the Capital especially from the neighbouring States. Hence when the census count was taken in 1951, it was observed that Delhi's population had increased by about 60% over that of 1941. The rate of growth of population of Delhi however declined to 52.40% during the decade 1951-61 but growth rate has been increasing since then.

1.4.2 In the census, migrants are classified

.... 10

on the basis of:-

i) Place of birth, or

ii) Place of last residence.

A person is considered as a migrant by place of birth if the place of enumenation during the census is other than the place of his birth. Similarily a person is a migrant by place of last residence if the place in which a person is enumerated during the census is other than place of immediate last residence. Till 1961, statistics on migration was based on 'birth place'. However, since 1971 it is on the basis of 'place of last residence'.

1.4.3 According to 1981 census, there were 22,99,252 migrants in Delhi constituting about 37% of the total population. In-migration into Delhi has been growing extraordinarily specially in the last two decades. Annual in-migration has increased more than three times during this period. Among the 22,99,252 migrants in Delhi, 12,29,745 persons, which forms about 53%, came during the period 1971-81. In the net addition of population during the period 1961-71, proportion of in-migrants was only 37.33% and it has gone upto 57.07% during 1971-81. In-migrant population forms 36.96% of population of Delhi in 1981(details in Table 6).

1.4.4 An alysis of this phenomenon indicates that in-migration on to Delhi has been mainly from the sorrounding States of Delhi(See Table 8). The National

.... 11

Capital Region States taken together accounted for about 71% of the total migrants that moved into Delhi during 1971-81. Migrants from Uttar Pradesh accounted for the highest proportion (48%) followed by Haryana (15.5%), Punjab (9.8%) and Rajasthan (7.6%). The trend in inmigration has been that while inflow from Punjab and Haryana has declined from 11.3% to 6.4% and 16.4% to 12.9% respectively during the decades 1961-71 and 1971-81 respectively, that of Uttar Pradesh, Madhya Pradesh and Rajasthan has been increasing.

1.4.5 In absolute terms of persons, it is the State of UP which is sending maximum member of people to Delhi. However, in relation to the State population, it is the State of Haryana that ranks (see Table 7) first. During 1971-81, for every one lakh population in Haryana, 1584 persons moved to Delhi where as from UP only 697. While Punjab ranked third and Rajasthan fourth interms of proportion in total migrants, in absolute terms Rajasthan is above Punjab.

1.4.6 All the States mentioned in Table 7 have been sending increasing number of people to Delhi. This is evident from the fact that the ratio of migrants to the respective state population, has been showing an increasing trend in all the States. In case of Madhya Pradesh there has been a sharp increase. During 1961-71, Madhya Pradesh sent only 27 persons for every lakh population to Delhi which rose more than thrice to 90 during 1971-81.

.... 13

TABLE 5: AREAS EXTENT AND POPULATION OF N.C.R:

	Extent in kms. (1981)	Popn. in 1961 (in millions)	Popn. in 1971 (in millions)	Popn. in 1981 (In millions)
UT of Delhi	1483 (4.90)	2.65 (25.11)	4.06 (28.91)	6.22 (32.39)
Haryana sub-region	13413 (44.35)	2.89 (27.33)	3.80 (27.01)	4.93 (25.73)
UP Sub-region	10853 (35.88)	4.45 (42.04)	5.44 (38.69)	6.97 (36.31)
Rajasthan sub-region	4493 (14.85)	0.58 (5.52)	0.76 (5.39)	1.07 (5.59)
N.C.R.	30242 (100.00)	10.58 (100.00)	14.06 (100.00)	19.19 (100.00)

Note: Figures in brackets indicate proportion(%) of respective numbers to NCR total.

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TABLE 6: MIGRATION INTO DELHI:

Year	Popn.	Net decadal increase.	Total decadal in-migration.	Propn. of decadal migrants to total popn. (%) in that year(4%2)	Propn. of in-migrants in net increase(%) (4%3)	Growth of in-migrants(%) (decadal)
1941	917939	-	-	-	-	-
1951	1744072	826133	-	-	-	-
1961	2658612	914540	544198*	16.74*	-	-
1971	4065698	1407086	525309	12.92	37.33	-
1981	6220496	2156708	1229745	19.76	57.07	134.01

* represents in-migrants even before 1961 and includes migrants in the category of 'period not known'(99143 persons).

.... 12

28

7: RATIO OF MIGRANTS TO POPULATION

	Total population in 1961	Migrants to Delhi during 1961-71	Migrants during 1961-71 as per lakh population of 1961	Total population on 1971	Migrants to Delhi during 1971-81	Migrants during 1971-81 as per lakh population of 1971
	2	3	4	5	6	7
ryana	7590543	85945	1132	10036808	159028	1584
P.	32372408	8850	27	41654119	37709	90
njab	11135039	59503	534	13551060	78671	580
jasthan	20155602	39885	198	25765806	93836	364
P.	73754554	260748	353	88341144	616021	697

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N.C.R.	30242 (100.00)	10.58 (100.00)	14.06 (100.00)	19.19 (100.00)

Note: Figures in brackets indicate proportion(%) of respective numbers to NCR total.

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TABLE 6: MIGRATION INTO DELHI:

Year	Popn.	Net decadal increase.	Total decadal in-migration.	Propn. of decadal migrants to total popn. (%) in that year	Propn. of in-migrants in net increase (%)	Growth of in-migrants (%) (decadal)
1941	917939	-	-	-	-	-
1951	1744072	826133	-	-	-	-
1961	2658612	914540	544198*	16.74*	-	-
1971	4065698	1407086	525309	12.92	37.33	-
1981	6220496	2156708	1229745	19.76	57.07	134.01

* represents in-migrants even before 1961 and includes migrants in the category of 'period not known'(99143 persons).

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RATIO OF MIGRANTS TO POPULATION

	Total population in 1961	Migrants to Delhi during 1961-71	Migrants during 1961-71 as per lakh population of 1961	Total population on 01 1971	Migrants to Delhi during 1971-81	Migrants during 1971-81 as per lakh population of 1971
	2	3	4	5	6	7
na	7690543	85945	1132	10036808	159028	1584
	32372408	8860	27	41654119	37709	90
b	11135079	59503	534	13551060	78671	580
than	20155602	39885	198	25765806	93836	364
	73754554	260748	353	88341144	616021	697

attributed to growth of industries, especially small scale, expansion of trade and commerce and construction activities. The twin reasons of 'employment' and 'family movement' accounted for 60% of all migrants in 1981 from the five states (Table). However for obvious reasons, between the two number of immigrants due to family movement has been higher. When the head of a family moves to another place for employment, his family joins him after a while. Therefore, number of people migrating on account of 'family movement' is generally higher than the number on account of 'employment'.

TABLE 10: Districts in Decending order from wjich Migration takes place to Delhi

State	Name of the Districts				
Uttar Pradesh	Meerut (3.38)	Bulandshahar (6.68)	Aligarh (5.69)	Agra (2.67)	Ghaziabad (2.58)
	Garhwal (2.30)	Muzaffarnagar (1.70)	Almora (1.70)	Mathura (1.49)	Muradabad (1.43)
	Kanpur (1.41)	Eta (1.29)	Saharan-pur (1.29)	Lucknow (1.25)	Azamgarh (1.23)
	Ghonda (1.03)				
Haryana	Rohtak (3.74)	Sonepat (2.16)	Gurgaon (2.16)	Karnal (1.62)	Faridabad (0.91)
Punjab	Amritsar (2.69)	Jalandhar (1.70)	Ludhiana (1.45)	Hoshiar-pur (1.13)	
Rajasthan	Jaipur (2.08)	Alwar (1.11)			

Source: Socio-Economic Unit (PPW) 1980-81.

.... 16

1.4.11 An analysis of employment structure of migrant workers indicate that tertiary sector accommodates maximum proportion (69.17%) of all migrant workers followed by Secondary (28.87%) and primary sectors (1.96%). Majority of the in migrants are obserbed in petty trades, low grade production or processing activities and the population growth induced service sector. Incidentally, proportion of total workers of Delhi in different sectors too reflect roughly some proportions with 66.01%, 29.04% and 9.95% in tertiary, secondary and primary sectors of employment.

1.5.0 Population projections

1.5.1 Population of Delhi has been growing at a rapid pace since independence. During the four decades preceeding 1941, it gained a modest total of 7 lakhs against its 2 lakhs in 1901. However, it gained extraordinary growth by registering 59.8%, 52.4%, 52.9 in successive decades and reached 53.0% in 1981 (Table 11). But for Bangalore and Jaipur,

TABLE 11: GROWTH OF POPULATION OF DELHI.

Year	Population (in lakhs)	Decennial rate of growth(%)
1941	9.17	
1951	17.44	59.80
1961	26.59	52.40
1971	40.66	52.90
1981	62.20	53.00

Delhi registered the highest growth rate during 1971-81, among metropolitan towns of India.

.... 17

TABLE 12: POPULATION PROJECTIONS FOR DELHI

Year	Population	Increase over last decade			
		Total	by in migration	by Natural growth	Overall growth rate (decadal)
1	2	3	4	5	6
1971	40.65				
1981	62.17	21.51	12.29 (19.77%)*	9.22 (22.67%)**	52.92
1991	92.56	30.38	17.95 (19.39%)*	12.43 (20.00%)**	48.87
2001	112.00	19.43	8.33 (7.43%)*	11.10 (12.00%)**	21.00

* Proportion of in migrants of the decade to the total population in that year.

** Decadal net natural growth rate.

.... 18

1.5.2 A major contributing factor for such an increase in the population volume has been the continuous inflow of migrants. continued growth of population and in migration into Delhi on the scale experienced between 1971 and 1981 and continued intensification of activities and population in the existing urban Delhi if not controlled with associated growth and diversification of the region would inevitably lead to pressure on and deterioration of the limited urban services of Delhi.

1.5.3. Growth of population in Delhi at the present rate as such is not a problem since enough land is available for further urban development. But the rate of augmentation of services proposes tremendous task. Augmentation of selected services achieved during 1961-81 and augmentation required between 1981-2001 if the present rate of population growth continued is given in the table 13.

.....19

TABLE 13

Service (units)	Augmentation Achieved from 1961 to 1981			Required Augmentation from 1981 to 2001		
	AUGMENTATION (1961-81)			AUGMENTATION (1981-2001)		
	1961 (2)	1981 (3)	1961-81 (4)=(3)-(2)	2001 (5)	81-2001 (6)=(5)-(3)	Rate (7)
Water (MGD)	78	335	257	1024	689	$\frac{689}{257} = 2.68$
Sewerage (MGD)	36	118	82	902	784	$\frac{784}{82} = 9.56$
Electricity (MW)	80	650	570	2568	2018	$\frac{2018}{570} = 3.54$
Telephone Lines (1000s)	27	224	7	1200	976	$\frac{976}{197} = 4.95$
Hospital Beds	7	14	7	61	47	$\frac{47}{7} = 6.71$
Students-School (thousands)	400	1450	1050	320	1850	$\frac{1350}{1050} = 1.76$

Such conclusions compels for a substanti
control in the growth of population of De
during the period 1981-2001

....20

Projections have been made for Delhi and the constituent units of NCR based on varied assumptions such as urban and rural growth differential method under assumptions of constant rates and increasing rates. Urban-rural growth differential method has been advocated by the UN for projecting population of urban areas, cities etc. In this method, the growth differential of the region falling in NCR and other regions of the state are examined and these differentials are then projected. Two assumptions have been made regarding the likely growth differentials infuture. In the first method it has been assumed that growth differentials may remain constant as observed during 1971-81. In the second, assumption used is that the change in growth differentials observed during 1961-71 and 1971-81 may continue in future. This has been termed as increasing URGD method. Same method has been used to project the rural andurban population of NCR. The ratio of the urban population in the NCR has been worked out separately for each state for 1961, 71 and 1981. These ratios were then extrapolated using logistic model. Three assumptions were made for extrapolation :-

(i) The growth differential between the urban areas and rural areas would remain the same as observed during 1981-81 decade;

(ii) The above growth differential would accelerate during the coming decade. The rate of acceleration wouldbe that observed during the decades 1961-71 and 1971-81;

(iii) The growth differentials would no dbout accelerate but the rate of acceleration may be inbetween (a) and (b). In other words the quantum of increase would be half the observed acceleration during the last two decades.

Under both methods, the population of the NCR part of Delhi, Haryana, Rajasthan and UP was projected separately and added to gain total population of NCR.

TABLE 14 Projected Population of NCR

Population in lakhs

Region	Pop. 1931	Constant URGD (assumption)		Increasing URGD (Assumption)	
		1991	2001	1991	2001
Delhi	62.20	92.55	1,32.64	92.55	1,32.64
Rural	4.52	4.42	3.61	4.42	3.61
Urban	57.68	88.13	1,28.03	88.13	1,29.03
Uttar Pradesh	69.68	87.55	1.03.44	87.57	1,03.49
Rural	50.19	54.62	56.02	54.64	56.04
Urban	19.49	32.93	52.42	32.93	52.45
Haryana	34.67	62.51	71.50	62.70	72.16
Rural	36.68	42.10	41.40	42.23	41.78
Urban	11.99	20.41	30.10	20.47	30.33
Rajasthan	9.62	11.95	14.34	11.26	11.96
Rural	7.88	9.31	10.51	8.77	8.77
Urban	1.74	2.64	3.83	2.49	3.19
NCR Total	190.18	254.57	3,26.93	254.08	3,25.26
Rural	99.28	110.46	1,11.54	110.06	1,10.21
Urban	90.90	144.11	2,15.39	144.02	2,15.05

Projections indicate that if the present growth trend of Delhi is allowed to continue it will reach a figure of 132 lakhs of population by the year 2001 AD. This requires deliberate and strict control of population in and into Delhi.

1.5.4 In an attempt to evolve a population estikate for Delhi which would be well under manageable limits the following assumptions have been used.

(1) that the net natural growth rate of population is declining and given various population control programmes, literacy levelaand adoptability of the metropolitans', the net annual natural growth would reach 12% by the year 2001. However only a marginal reduction in the same is envisaged till the year 1991. It is assumed to come down from the year 1971-81 decadel rate of 22% to 20% by 1991, and 12% during 1991-2001

(2) While accepting continued in-migration during 1981-91 of the same rate observed during 1971-81, a substantial reduction in inmigration is expected between in-migration is envisaged.

Under such assumptions Union Territory of Delhi's population would be 112 lakhs in 2001 of which 2 lakhs would be rural.

1.5.5 To restrict the population to such a figure are to be taken so that annual in-migration into the city is controlled to about 80,000 persons per year during 1991-2001 from the observed rate of 1.2 lakh persons annually during 1971-81 and expected 1.8 lakh persons annually during 1981-1991. It would bring down the proportion of migrants in the total population to 7.43 in the year 2001 from the observed (1971-81) 19.39% and expected (1981-91) 19.77%. Further, the overall

.... 22

decadal growth of Delhi would be 21% in 1991-2001 from the 1971-81 rate of 53% and expected 1981-91 rate of 48%.

1.5.6 Population projections for DMA:

The DMA which forms a contiguous urban area around Delhi has shown great potential for housing and industrial activities primarily owing to be its location around Delhi. This growth immediately outside the city limits is striking and has been sharply increasing indicating the spatial expansion of urban influence. This rapid growth in DMA has been directly related to industrial development around Delhi, creation of NOIDA township by Uttar Pradesh, proposed development of Kundli industrial township by Haryana, merging of Narela town in Delhi Urban Area, spurt in the concentration of industrial and institutional activities along the Delhi-Gurgaon National highway and Faridabad-Ballabgarh highway. While this increase to some extent would reduce the problems of Delhi, this would lead to greater problem in terms of stress on Delhi's services unless these areas are planned in a regulated and co-ordinated manner. Further, unless they are planned synchronously with Delhi and the surrounding National Capital Region, the DMA towns would identify themselves with the urban form of Delhi and become a single urban continuum.

1.5.7 Recognising the potential of DMA in solving the congestion problem in Delhi a modest growth has been proposed for the DMA towns (Table 15).

.... 24

TABLE 16: AREA AND POPULATION OF DMA: 1981-2001.

Sl. No.	Urban area and its surroundings	Area in sq.Kms.	Population 1981 (in lakhs)	Existing Density (per Sq. km.)	Population 2001 (in lakhs)	Proposed Density (per sq. km. in 2001)	Annual growth rate of population 1981-2001
1.	UT of Delhi	1485.00	62.20	4188	112.00	7542	4.00
2.	Faridabad-Ballabgarh	178.24	3.30	1856	10.00	5610	10.11
3.	Gurgaon	24.13	1.01	4180	7.00	29009	29.65
4.	Bahadurgarh	9.00	0.37	4165	2.00	22222	22.02
5.	Kundli	-	-	-	1.50	-	-
6.	Ghaziabad-Loni	68.40	2.97	4348	11.00	16081	13.49
7.	NOIDA	-	-	-	5.50	-	-
8.	Total Area of DMA	-	-	-	149.00	-	-

Presently DMA including Delhi accommodates 70.26 lakhs of population in which Delhi alone has 62.20 lakhs and remaining 8.06 lakhs in the other DMA towns. While Delhi has been projected to accommodate 110 lakhs of urban population, the other DMA towns would accommodate a total of 37 lakhs of population (Table 15). Delhi will have 2 lakhs of rural population and the rural areas of DMA part of Haryana and Uttar Pradesh are envisaged to accommodate 50,000 persons each.

1.5.8 Population assignments for rest of National Capital Region.

A significant fact about the migration into Delhi is that the immediate surrounding states of Delhi have been contributing majority of migrants. The excess population of 19 lakhs of persons who would otherwise be moving into Delhi by 2001 will have to be contained in the urban areas outside DMA but within National Capital Region. It is proposed to accommodate 5 lakhs, 1 lakh and 13 lakhs of persons in sub-regional areas beyond DMA of Haryana, Rajasthan and Uttar Pradesh.

The ultimate projected and assigned population for the National Capital Region is given in Table 16.

TABLE 16: POPULATION ASSIGNMENTS BY 2001 A.D. FOR DELHI, D.M.A. TOWNS AND N.C.R.

S. No.	Area	(in lakhs) POPULATION 2001 Projected			Assigned		
		Total	Urban	Rural	Total	Urban	Rural
1.	Region	325	234	91	325	234	91
2.	Delhi sub-region	132	129	3	112	110	2
3.	Haryana sub-region	72	38	34	77	42.5	34.5
4.	Rajasthan sub-region	12	3.5	8.5	14	5	9
5.	Uttar Pradesh sub-region	109	63.5	45.5	122	76.5	45.5
6.	Delhi Metropolitan area						
	a) Total	170	166	4	150	147	3
	b) Delhi	-	-	-	112	110	2
	c) Haryana	-	-	-	21	20.5	0.5
	d) U.P.	-	-	-	17	16.5	0.5
7.	DMA Towns	-	-	-	37	37	
	a) Ghaziabad including Loni	-	-	-	11	11	-
	b) NOIDA	-	-	-	5.5	5.5	-
	c) Faridabad	-	-	-	10	10	-
	d) Gurgaon	-	-	-	7	7	-
	e) Bahadurgarh	-	-	-	2	2	-
	f) Kundli	-	-	-	1.5	1.5	-
8.	Other towns outside DMA						
	a) Haryana	17	17	-	22	22	-
	b) Rajasthan	4	4	-	5	5	-
	c) U.P.	47	47	-	60	60	-

Settlement Pattern:

Rural Urban concentration

1. According to 1981 census, NCR accommodates a total population of 191.92 lakhs of which about 91 lakhs is urban. Urban population forms about 48% of NCR. Increasing urban proportion is evident from the fact that the proportion of rural population has declined from 65.32% in 1961 to 60.72% in 1971 and 52.60% in 1981. However such a substantial increase in urban population leaving aside Delhi in NCR is comparatively slower. The region beyond Delhi UT registered 16.55% in 1961 and it increased to 18.78% in 1971 and 25.6% in 1981. As such 75% of the population of NCR beyond Delhi remains predominantly rural.

has been mainly due to the rapid increase of urban population of Delhi. Increase in urban population

2. Among the Sub-regions, urbanisation process has been slower in Rajasthan over the years, compared to UP and Haryana Sub-regions. Against the present (1981) rural urban proportion of 52.6 : 47.4, NCR has been projected and envisaged to gain rural urban ratio of 72:28 by the year 2001. Urban proportion has been envisaged for the year 2001 to form 98.22%, 55.20%, 35.71% and 62.70% in Delhi, Haryana, Rajasthan and UP Sub-regions, against their projected proportions of 97.22%, 52.77%, 29.20% and 58.25% in the respective sub-regions.

Rural Settlement system:

3. As discussed, 75% of the population beyond Delhi resides in rural areas. There are 6677 villages (1981) in NCR. Villages are prodominantly medium sized with 55% of the villages having population between 500-1999 persons and 20.75% in the range of 2000 - 4999 persons. While large villages with population above 5000 formed

4%, that of smaller sized with populationless than 500 is 20% (Table 1). Rajasthan Sub-region however has 40% of its villages of smaller size. Delhi and UP Sub-regions have highest number of medium sized settlements.

With such large number of rural settlements, it is necessary to identify for the location of relatively higher order facilities some central basic villages which would be able to serve greater number of population and area.

Urban Settlement Pattern:

4. There are 94 towns is NCR with 6 in UT of Delhi, 58 in UP, 27 in Haryana, and 3 in Rajasthan Sub-region. There has been a spectacular increase in the number of towns during the period 1971-81, When the number increased from 48 to 94. During the decade 1961-71 there was an addition of only 4 towns (Table 2)

5. There are 11 class I towns including Delhi in NCR accommadating about 70% of Urban population. Delhi urban area has 57 lakhs of population and as such inspite of having higher number of towns they being smaller sized the Sub-regions accommodate lesser proportion of urban population. As much as 63.4% of the entire NCR urban population is concentrated in Delhi alone. Of the remaining, 21.42% is in UP Sub-region followed by 13.26% in Haryana and 1.92% in Rajasthan. Classwise proportion of urban population from class I to VI are 70.32%, 1.38%, 4.55%, 3.14%, 2.30% and 0.10% (Table 3).

Growth Pattern of Urban Areas:

6. Towns have been classified as very fast growing, fast growing and stagnating towns. Those that have registered annual growth rate less than the national average of 2.5% per annum, have been grouped as stagnating while the ones that registered double that of national average urban growth (4.5%) are very fast growing and those having above but less than double the national average under growth are considered as fast growing.

7. The very fast growing towns identified are Ghaziabad (124.88%) and Modinagar (101.67%) from UP Sub-region and Faridabad complex (169.40%), Halley Mandi (350.27%) and Ganaur (96.32%) from Haryana. The fast growing towns identified are Bulandshahr (73.83%) and Muradnagar (86.25%) from UP and Sonepat (75.29%) from Haryana Sub-region. Smaller towns seems to struggle for their growth owing to greater concentration of activities and associated population in bigger settlements. The Stagnating towns are Anupshahr (23.99%) Farid Nagar (20.89%) Bug Rasi (16.12%), Shahjahanpur (20.80%), Dankaur (14.78%), Jahangirpur (21.29%) from UP and Bawal (18.85%), Rewari (17.49%), Maham (11.20%), Beri (9.35%), Faruknagar (16.04) and Ferozpur Zirka from Haryana. Efforts to revitalise the economy of these towns by suitably providing the facilities depending on the potential available in such towns is necessary.

Major Urban Structure

8. Present migration being primarily from the surrounding States, it is imperative that any attempt for the control of population in Delhi has to be associated with developmental efforts in such regions from where maximum migrants come out. It is only logical

to reason that Delhi moving population should be contained in NCR beyond DMA by providing suitable employment opportunities since 'employment' and subsequent 'family movement' forms the major reasons for out migration. Being the centres that provide service to itself and also to the surrounding scattered rural population-the central places, their organisation in space requires utmost consideration. The Urban settlement structure with their higher order services and centralised functions form the backbone of any region. Such a form conceived to be conducive, should be based on the objectives and goals and ultimatily on the attained form of development.

9. Various conceptual physical forms that could be adopted for NCR have been analysed. Some of the factors that have been considered to evaluate them are that

i. Any intensified development should be reasonably away from Delhi so that population doesn't wish to stay in Delhi and commute to their work places in the region.

ii. The identified prime centres of any form are roughly equidistant from Delhi so that selection of settlements by the entrepreneurs or population becomes a question of direction rather than distance.

iii. Centres of such a form offer viability to accommodate projects on a larger scale that can attract population of a substantial amount, interms of resource availability in the vicinity both of skill and material.

iv. Such a physical form recognises the present development attained especially interms of linkages and activity concentration - in short the logical directions of growth and as such require minimal funds.

10. An analysis of various possible forms lead to the conclusion that a form which would involve 'developing a few selected centres on an intensified scale so that they can act as migrants capturing magnats and can form the highest hierarchical ladder of the settlements in the region is considered most viable. Such an approach and Urban form is expected to counteract the pull factors exerted by Delhi and this would create spatial points in which by providing for physical and social capital, revitalisation of the regional economy could be gained. Further greater volume of migration from the surrounding states and from moderate distance is the evidence and this is conducive to the establishment of Satellite communities/counter magnets of bigger magnitude at appropriate distance from Delhi to absorb the migrants from rural areas.

11. Availability of substantial amount of land for human habitation in the surrounding areas of NCR beyond Delhi is evident from the Table (4) while Delhi has only 0.24 sq.kms of land for 1000 poulation, Sub-regions of Rajasthan, Haryana and UP have 4.18, 2.71 and 1.56 sq.kms respectively. Low densities and availability of vast open spaces in the surrounding urban areas beyond Delhi too is evident from the higher urban land availability for 1000 persons. (Table 4).

12. Result of the search for such first order priority settlements are

i.	from Uttar Pradesh Sub-region	: Meerut, Hapur and Bulandshahr-Khurja
ii.	from Haryana Sub-region	: Panipat, Rohtak, Rewari-Daruhera and Palwal
iii.	from Rajasthan Sub-region	: Alwar and Bhiwadi

13. While adopting such a strategy and physical form, this plan envisages utilisation of the transport corridors as a tool to disperse the activities from the central city at sufficicently distant places rather than concentrating/encouraging development along any corridor. This backbone urban skeleton system would be linked amongst themselves by road and rail systems to facilitate their inter-nodal movement and should be well connected with higher standard roads by rapid transit systems.

14. This plan aims for a compact and orderly growth of urban Delhi with moderate and suppressed growth in DMA and a few priority settlements of first order which would be fully self contained in matters of activities, employment opportunities and associated infrasturcture, nevertheless having intense interaction with Delhi to gain rather than to lose to it. It is envisaged that these priority towns are developed rapidly and should be developed immediately so that they are able to absorb and retain not only their own natural increase but to arrest and contain potential migrants of their surrounding region.

15. The selected priority towns are expected to counteract the pull exerted by Delhi. It is proposed to achieve this by generating employment opportunities of a greater magnitude and other associated infrastructure facilities. Existing, projected and assigned

population for the priority towns is given in the table: 2.5

Table: 2.5 Assigned population for priority Towns:- 2001.

Pop. in Lakhs.

Town	Pop. 1981	Projected Population 2001.	Assigned population 2001.
Meerut	5.36	10.28	13
Hapur	1.02	2.03	6
Buland shahr	1.03	2.35	10
Khurja	0.67	1.21	
Palwal	0.47	0.63	~~3~~ 3
Panipat	1.38	2.86	5
Rohtak	1.68	2.97	5
Rewari Daruhera	0.52	0.77	3
Bhiwadi	-	-	
Alwar	1.47	2.85	5
Priority towns	13.60	25.95	50

Table : 4

Man - Land Ratio in NCR

Area/Sub region	Population 1981		Area in sq.km. 1981	Land for 1000 Population (insq.kms)		
	Rural	Urban		Rural	Urban	Total
1.Delhi	4,52,206	57,65,200	1483.00	1.97	0.10	0.24
2.U.P	50,19,579	19,49,067	10853.00	2.07	0.22	1.56
3.Haryana	37,31,837	12,06,704	13412.48	0.35	0.29	2.71
4.Rajasthan	8,99,553	1,73,956	4492.90	0.49	0.70	4.18
NCR	100,94,175	90,97,927	30241.38	2.85	0.16	1.57

TABLE : 1

Number of Villages in different Population Size-1981

Sub-region	No. of Villages	Population size range					
		< 200	200-499	500-1994	2000-4999	5000-4999	10000 and above
lhi U.T.	214	9 (4.20)	9 (4.20)	110 (51.40)	71 (33.20)	15 (7.00)	-
.P. Sub-egion	2989	149 (4.98)	283 (9.47)	1705 (5704)	742 (24.83)	107 (3.58)	3 (0.10)
aryana ub-region	2386	158 (6.62)	335 (14.04)	1287 (53.94)	508 (21.29)	93 (3.90)	5 (0.21)
ajasthan ub-region	1088	125 (11.49)	318 (29.23)	573 (52.67)	65 (5.97)	7 (0.64)	-
CR	6677	441 (6.60)	945 (14.10)	3675 (55.10)	1386 (20.75)	222 (3.32)	8 (0.13)

Note : Figures in brackets indicate proportions (%) to respective Sub-regions total.

Table 2: Distribution of Urban Settlements

Size Class	NUMBER OF TOWNS IN						
	1961	1971	1981				
	NCR	NCR	NCR	Delhi UT	UP Sub-region	Haryana Sub-region	Rajastha sub-regio
I	2	4	10	1	4	5	1
II	3	6	3	-	2	1	-
III	10	9	17	1	12	4	-
IV	12	13	28	1	17	8	2
V	13	14	33	4	20	9	-
VI	4	2	3	-	3	-	-
All Classes	44	48	94	6	58	27	3

ity Patterns of Classwise towns in NCR- 1981

Area: in Sq. Kms
Pop: in lakhs

Size	Delhi No.	Pop.	Area	Class Ave. Density	U.P. No.	Pop.	Area	Class Ave. Density	Haryana No.	Pop.	Area	Class Ave. Density	Rajasthan No.	Pop.	Area	Class Ave. Density
1	57.29	540.74	10595	4	10.30	161.81	6366	5	8.46	252.79	3346	1	1.46	80.00	1822
-	-	-	-	2	1.55	24.72	6261	1	0.53	6.26	8508	-	-	-	-
-	-	-	-	12	3.86	56.10	6518	4	1.35	37.09	4933	-	-	-	-
1	0.13	17.00	763	17	2.24	93.68	2393	8	1.09	35.47	3078	2	1.73	41.64	4159
2	0.26	34.44	770	20	1.63	74.62	2176	8	0.65	29.58	2195	-	-	-	-
-	-	-	-	3	0.11	8.73	1300	-	-	-	-	-	-	-	-
Classes																
6	57.68	591.88		58	19.49	419.74		27	12.07	350.99		3	3.19	121.64		

CHAPTER - C

Policy Regarding Development of Economic Activities in National Capital Region

Objectives : The plan advocates development of economic activities and creation of jobs in the various occupations in such a balanced manner so as to lend stability to the economy of the region as well as take advantage of the dynamic quality of the urban concentration in and around the National Capital.

The National Capital Region Concept has originated from the need to alleviate the pressures being built on the city of Delhi by the people who are flocking into the city from different parts of the country and more particularly from the neighboruing areas. It has been felt that urban concentration in and around Delhi hold potential for tremendous growth which have to be channelised suitably. Employment opportunities is the principal pull factor for heavy migration to Delhi from rural and urban areas. This can only be stopped if there are adequate employment opportunities in other growth centres existing or to be developed. Major employment generators for dispersal within the National Capital Region fall under three categories : Employment under central Govt. and Public Undertakings, whole sale and distributive trade and commerce and industries.

Policies : In order to achieve the objectives, the plan Proposes following policies :

A. Broad Regional Level Policies :

i) For the development of economic activities in NCR a three tier approach should be followed. A Policy of strict control on creation of employment opportunities within Union Territory of Delhi, moderate control outside Delhi within Delhi Metropolitan Area and encouragement with incentives in the rest of the region

is proposed for the balanced development of the region.

ii) The policy of development of economic activities in the region should take into account the impact of various proposals made in the regional plan regarding settlement pattern, transport structure etc. Moreover, it should be an integrated policy for NCR as a whole and should be pursued at the sub-regional level so as to effectuate the broader objectives of the Regional Plan. It should have the twin objective of fostering rapid economic growth and achieving balanced development of the region.

iii) There should be a definite attempt to change the basic character of the regional economy of the NCR from the agricultural and pre-industrial to a more diversified one, in order to raise the earning capacity of the people. By 2001 nearly 70% of the populatin would be living in urban areas. This would entail the creation of more jobs in non-agricultural population than at present. For this purpose there should not only be an injection of additional activities in existing and new centres outside urban Delhi but also development of agro-based industries in rural areas in order to support urbanisation on the one hand and to stabilise the rural economy on the other.

iv) In the region land is generally good for agriculture and hence selection of sites for the development of these activities should be done judiciously.

v) There is a need for streamlining not only the fiscal and other incentives given by the various state governments but also tax structure in the NCR. It should also be possible to rationalise the octroi and other taxes in Delhi and in the various towns for mutual benefits and in the overall interest of the region. This will also enable a free flow of goods and encourage economic development.

B. Specific Area Policies :

Delhi has experienced a great spurt in the industrial activity during the past two decades. The distribution of working force in urban Delhi from 1951 to 1981 (Annexure I) shows that in 1951 and 1961, Delhi being the capital of the country was mainly an administrative centre with about 44% and 46% workers respectively participating in other services. The percentage of workers in trade and commerce remained almost same in the last four decades whereas the participation in industrial sector has increased from 17% in 1961 to 30% in 1981. Thus Delhi which in 1951 and 1961 had predominant administrative function is becoming an industrial township. The growth of industies in Delhi followed a typical trend. With slow progress upto 1970-71, it started picking up from 1976 onwards. There was a sharp increase in the number of units from 26,000 in 1970 to 45,000 in 1981 i.e. 73% increase during the decade. The industrial employment increased from 2.15 lakhs in 1970-71 to 4.50 lakhs i.e. it has doubled in the decade 1971-81. The investments in this sector which were upto the tune of Rs.190 crores in 1970 have multiplied almost five times to Rs.965 crores. The spurt of activity in this sector has also been reflected in the production figures. The value of the production which was around Rs.380 crores in 1970-71 has multiplied

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7 times to become Rs.2196 crores in 1980-81 (Annexure II). The data available regarding registered factories, which constitute the organised sector of industrial activity shows that there were in all 3917 factories, registered under Factories Act against 2984 factories registered till 1979. Thus about 1000 factories have been added only in the span of four years. The number of daily workers added in this period being 22000 (Annexure III). It will not be out of place to mention here that large number of people who have migrated to Delhi have engaged themselves in the unorganised production and service activities known as the informal sector. It has also been observed that growth of employment in the informal industrial sector has taken place at a much faster rate than the growth in the organised sector i.e. formal sector in Delhi. In view of its linkages and contribution to employment generation as also the limited scope for expansion of employment in the organised sector, the informal sector cannot be neglected and allowed to remain outside the purview of planning. Availability of water and power at cheaper rates in comparison to other parts of the region added with infrastructure facilities and lower taxation rates are the main reasons which have attracted a large number of enterpreneurs in Delhi in the last two decades.

Locational aspects of Industry play a significant role as industrial locations

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directly influence the locational pattern of job-opportunities in commerce, transportation, construction and other services. The decisions regarding industrial locations are based on availability of economic infrastructure. Thus in order to decide about locations of each and every individual industry in the region, extensive growth potential surveys will have to be carried out.

There is a need to follow a well defined policy with regard to distribution and dispersal of industries in the region so as to harmonise the development of the region. It is proposed that all the cases of expansion and opening of new industries in Delhi and D.MA. towns should be referred to the 'Board' and a high level committee should be formed for the scruitiny of such cases. To ensure achievement of this objective a three tier system of policy of incentives and disincentives is proposed.

a) Strict Control within Union Territory of Delhi.

In the industrial growth of the region as a whole the industrial policy of Delhi would remain central. Industrial policy of the Govt. of India recognises the need to further prevent concentration of industries around metropolitan cities and Govt. has been following the policy of not issuing new licences for further industrial activity within the standard

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urban area of metropolitan cities. The first Master Plan for Delhi has prohibited certain types of industries, mainly large scale and obnoxious industries, from being set up in Delhi and this has been mainly responsible for the growth of only small scale industries in Delhi, generally manufacturing consumer goods of different kinds. Keeping in view the spurt of industrial employment in the last two decades, the check on large and heavy industries is not only sufficient but rather it calls for strict control to even small scale industries. As a principle no industry except what are essential for either feeding, servicing or maintaining Delhi's population be permitted in Delhi. The heavy and medium class of industries which are functioning in Delhi should also be encouraged to go outside Delhi and D.M.A. As regards industrial development a policy of disincentives should be followed in Delhi.

b) Control outside Delhi within D.M.A.

The towns falling on the periphery of Delhi U.T. also referred as Delhi Metropolitan Area towns viz. Faridabad, Gurgaon, Bahadurgarh, Ghaziabad and NOIDA have experienced a high rate of population growth and spurt in industrial activities. The impact of Delhi's policy of discouraging some industries and disallowing others is the Chief factor behind the growth of these industrial centres. It has also been felt that with the pace of industrial development in these towns during the last two decades adequate level of residential commercial and other facilities have not developed, which

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on one hand has given rise to large scale slums and on the other hand has enhanced commercial activities in Delhi. Due to lack of facilities higher and middle level executive class employed in various industries prefer to live in Delhi, whereas labour class have found shelter in the vicinity of these towns, giving rise to large scale slums around Delhi. The further growth of these centres to such a pace, alongwith establishment of obnoxious and pollutant industries at these places may prove to be deterrent factor for the clean and healthy development of Delhi. It is, therefore, felt that alongwith Delhi, even in these towns the location of industries creating problems of waste disposal, smoke, fumes, water pollution etc. should be discouraged. They are practically to be prohibited. As a policy no employment intensive large scale industry should be permitted to be set up in Delhi and the D.M.A. Only small scale units and rather preferably the units which are essential for either feeding, servicing or maintaining Delhi and D.M.A.'s popul ation should be allowed in these towns.

c) <u>Incentive outside D.M.A. within N.C.R.</u>

A policy aimed at providing alternative location of industries from urban Delhi and D.M.A. towns to wider areas in the medium sized regional towns and central place 'villages' and small towns where suitable infrastructure has to be provided,

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should be vigorously pursued. There should be consolidation of growth in the existing industrial towns, by improving the other sectors of the town economy. New growth points should be created farther away from urban Delhi so that a proper balance between the developed and undeveloped areas of the region is achieved.

The industrial policy of the States of Haryana, U.P., Rajasthan and Delhi be harmonised keeping the N.C.R. as integrated region. The State Govts. within their own States should draw an industrial programme for development of the sub-region keeping in view the optimum industrial development of the region as a whole. Since the areas of these States are adjoining to the Union Territory of Delhi the enterpreneurs which go for an alternative to Delhi are likely to be attracted to these areas. In this way State Govts. can take advantage of their being near to the Capital. By such programmes State Govts. are likely to be benefited in the long run.

The incentives like rationalisation of tax structure to enable N.C.R. to function as one common economic market system, development of both physical and social infrastructure at regional level, development of the transportation system, provision of high level of telecommunication service within the region, rationalisation of octroi/terminal tax and power water and other utility rates etc. should be provided.

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Annex. II

ANNEXURE IV I

DISTRIBUTION OF WORKING FORCE IN URBAN DELHI 1951 to 1981

Categories	1951 Workers	1951 Percentage	1961 Workers	1961 Percentage	1971 Workers	1971 Percentage	1981 Workers	1981 Percentage
1) Cultivators	3483	0.7	5178	0.7	5176	0.5	7227	0.39
2) Agri.Labours	584	0.1	1242	0.2	3603	0.3	4772	0.25
3) Livestock Forestry etc.	-	-	-	-	-	-	13091	0.70
4) Mining & Quarring	1521	0.3	5446	0.7	9091	0.8	4745	0.25
5) Manufacturing, Processing a)Household Industry	6632	1.3	12684	1.7	25107	2.2.	31349	1.69
b)Other than household	80639	15.7	155099	20.7	242733	21.7	510748	27.49
6) Construction	44948.	8.7	32540	4.4	61517	5.5	118699	6.39
7) Trade and Commerce	117338	22.8	143809	19.3	239719	21.6	413430	22,25
8) Transport of Comm.	34455	6.7	47387	6.3	107324	9.6	168457	9.07
9) Other Services	224426	43.7	343430	46.0	422867	37.8	584663	31.47
Total Workers	514026	100.0	746315	100.0	1116937	100.0	1857545	100.00
Population	1437134	-	2359408	-	3647023	-	5768200	-
Participation Ratio	27.96	-	31.65	-	30.62	-	32.20	-

ANNEXURE - VII

INDUSTRIAL PROGRESS IN DELHI

Item	70-71	76-77	77-78	78-79	79-80	80-81	81-82
No. of industrial units (in '000)	26	37	40	41	42	45	50
Investment (Rs.in crores)	190	550	600	650	700	847	965
Production (Rs.in crores)	388	1025	1200	1450	1700	2196	2350
Employment (in '000)	215	300	325	350	375	450	480

ANNEXURE III

REGISTERED FACTORIES IN DELHI - GROUP-WISE

Description	Number of factories				Workers (daily average in '000)			
	79	80	81	82	79	80	81	82
1. Food Products	114	124	130	142	7	9	9	10
2. Textiles and Textile products	457	520	545	622	43	46	46	49
3. Wood products	46	47	52	56	1	1	1	1
4. Paper Products and Printing	230	223	255	279	11	12	12	12
5. Leather, Rubber and Chemicals	396	429	434	495	12	14	14	16
6. Non-metalic muberal products	55	57	51	107	4	3	3	3
7. Metal and Engineering Products	763	807	856	970	23	26	26	28
8. Manufacturing of Electrical machinery	308	355	374	451	12	14	14	15
9. Manufacture of other Misc. of Transport Equipment	393	395	437	555	15	16	16	17
10. Generation of Transmission of Electrical Energy. Gas and water supply	21	21	18	21	6	5	5	5
11. Miscellaneous	201	215	200	219	7	7	7	7
Total	2984	3193	3402	3917	141	153	153	163

(b) POLICY REGARDING THE LOCATION OF OFFICES OF THE CENTRAL GOVERNMENT AND PUBLIC SECTOR UNDERTAKINGS IN THE NATIONAL CAPITAL REGION.

1. Delhi is a multifunctional city serving as a magnet to all sections of society from not only the immediate region but the entire country. Delhi has shown a spectacular growth in terms of employment, the major attraction here of course has been the employment in the government offices and public sector undertakings which have been expanding fast due to a change in states of the major metropolies from an almost dormant colonial law and order city to the capital of a welfare state. Government functions have expanded rapidly to cope with added essential functions, foreign embassies, research and cultural organisations and foreign missions have had their distinct impact on the growth of the city.

2. The employment in the various types of the government and quasi-government offices has been constantly increasing ever since 1921 (Annexure IV). The employment in Public Sector can be divided under four major categories viz. employment in central Government Offices, Delhi Administration, Local Bodies and quasi government undertakings. The employment in Central Government Offices which was only 8000 persons in 1921 grew to 2.31 lakh persons in 1982. There has been a nominal increase in terms of numbers in the first two decades it was only after 1941 onwards that major employment in Central Government Offices took place. While comparing the employment of 1941 with the present employment, it may be seen that almost two lakh new jobs have been created in this sector during the period just preceding independence and the post-independence period. This spectacular growth in Central Government employment can be attributed to the fact that Delhi, once a Tehsil of the district suddenly came into focus when it became capital of the second most-populous country in the world. For Delhi, in fact, it is central government employment which proveded a base for other

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activities to come up and thus helped in accelerating the growth to some extent. The alarming addition of 1.15 lakhs jobs in Central Government employment during the decade 1961-1971 caused concern to the planners and the administrators and a curb in the sector of employment by way of deflecting new job opportunities in other NCR towns and counter-magnets was envisaged in the NCR plan. Besides this it was also considered to shift some of the Central Government Offices outside Delhi in the priority towns of NCR and the selected counter-magnets where some infrastructure facilities already existed. The Government of India through the cabinet secretariat is aware of the need to check the proliferation of Central Government employment in the capital as apart from land for office space, land for housing and other facilities is getting costlier and can be provided more cheaply in the smaller cities over the country where urban benefits and other services are available.

The employment in Delhi Administration and local bodies largely grew with the size and enhanced responsibilities of the administration and the local bodies with increasing overheads of servicing of metropolitan city. In 1921 it had a meager 3000 persons employment which grew to 1.67 lakh persons in 1981.

The employment in quasi-government undertakings in Delhi poses an alarming situation. The employment figures were only 6 thousand persons in 1961 which grew to 1.41 lakh persons in 1981 adding nearly 1.35 lakh person in just two decades. In the decade 1971-81 above onelakh persons found jobs in these undertakings, which means an addition of roughly 5 lakh persons during the decade 1971-81 by employment in public sector undertakings. During the year 1981-82 alone 10,000 persons were employed in the sector in Delhi.

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Most of these quasi-government offices and undertakings have their projects and field offices operating in far flung areas of the country. Although they face problems with regard to exercising supervision and control over these units while sitting in Delhi but in the name of performing liaison function and to avail superior infrastructure facilities these undertakings instead of operating a small liaisoning unit [illegible] now looking to the costlier living and [illegible] space for office establishment and Housing needs in Delhi, have established their huge offices in Delhi. These undertakings operate on a commercial basis and are in position to seek built up space for office and housing from open market. The result is that Public Sector Undertakings are growing at a very rapid rate and making heavy demands on city services and facilities. The employment in these undertakings which was negligibly small in 1961 in comparison to Central Government employment is now expected to overtake it if this pace continues. From the growth trends of employment in Public Sector in Delhi it can be said that employment in Central Government, Delhi Administration and Local Bodies is showing some what stablised or constant trends whereas employment in Quasi-Government activities forsee a still high rate of growth.

The overall employment in Delhi till the year 1981 in public sector offices and undertakings was 5.33 lakh persons, which by taking average of four supporting members to one earning member, means population of 22 lakh persons approximately, which comes out to about 40% of the total population of Delhi generated from this sector alone.

3. The accelerated growth of population in Delhi during last three decades has to be kept within manageable limits. The urbanisation process needs to be rationalised by dispersing various economic

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activities especially that of Government Sector away from the metropolis. Among other measures to be taken, it is imperative that there should be a curb on the expansion of the existing central government and quasi-government offices and specially on the creation of new offices in the capital. This is essential not only for the efficient functioning of the metropolis but also in the larger interest of the development of the other towns of the region. Decentralisation of the government offices is an urgent and continuing task and should be pushed through purposefully.

4. To ensure that Central Government offices and Public Sector Undertakings do not add to further employment a three tier system of policy is proposed.

a. Strict control within Union Territory of Delhi.

i) A strict check with regard to expansion of offices and opening of new central government offices should be maintained in Union Territory of Delhi. The main criteria for the location of offices in the capital would depend upon whether they perform the National Capital functions i.e. Ministry's function, protocol function and liaisoning function for which they have to be in close contact with the main ministries of the government. The existing offices which do not perform any of these functions should be shifted from Delhi with immediate effect. All the cases of expansion and opening of new central government offices should be referred to the 'Board' and a high level cabinet committee should be formed for the scrutiny of such cases. This committee should also consider shifting of offices outside Delhi. There are a number of offices attached to various ministeries which do not directly perform any of the above functions and can also function independently elsewhere, such offices should be considered for shifting outside Delhi.

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ii) There should be a strict check on the opening of new offices of undertakings in the capital. Thus undertakings and quasi-government offices which have huge set up in Delhi should be asked to limit their size to a small liaisoning unit only. This liaisoning unit can perform the important liaisoning functions of the undertakings with the ministries and other departments of Delhi. All the cases of opening of new offices of undertakings should be referred to the Board and the committee set up by Board should also consider the shifting of undertakings and quasi-government offices from Delhi.

b. Control outside Delhi within D.M.A.

i. There should be a strict control on the opening of new central government offices in DMA towns. However; expansion of the offices which have ministries - function, protocol function and liaisoning function and are necessarily to be located in Delhi can be allowed in DMA towns. Even some of the offices which satisfy these criteria can function efficiently from one of the DMA towns with improved road, rail and telephone facilities between these towns and Delhi. The shifting of such offices from Delhi to DMA towns should be encouraged by providing better housing facilities, HRA, CCA etc. The shifting or expansion of such activities in DMA towns should also be screened by the Committee as suggested earlier.

ii) No Public Sector undertakings offices should be allowed in DMA towns except their liaisoning offices. The undertakings which want to have their liaisoning office in Delhi should be encouraged to have their liaison office in DMA towns - by providing space of their choice and sufficient infrastructure facilities.

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c. Incentives outside DMA but within NCR.

(i) The central government offices which are considered for shifting from Delhi and DMA towns should be located in other towns of NCR and incentives in the form of CCA, HRA etc. as given to employees working in Delhi, should also be given to these employees. A higher order of linkage of road, rail and telecommunication facilities should also be developed between the ring towns and Delhi.

(ii) The Public Sector Undertaking offices which deal with Northern region and are functioning in Delhi, can function in a better way at a place in the centre of North India. These offices need not be located in Delhi. Such offices of the northern region should be located in the other towns of NCR.

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Annexure VI IV

Employment in Public Sector in Delhi (1921-82)
(figures in lakhs)

Sector	1921	1931	1941	1951	1951	1971	1981	1982
1. Central Govt.	0.08	0.11	0.26	0.88	0.94	2.11	2.25	2.31
2. Delhi Adm.	0.01	0.03	0.03	0.07	0.24	0.53	0.58	0.62
3. Local Bodies	0.02	0.01	0.12	0.11	0.33	0.90	1.09	1.13
4. Quasi-Govt.	N.A	N.A	N.A	N.A	0.06	0.56	1.41	1.51
Total	0.11	0.15	0.41	1.06	1.57	4.10	5.33	5.57

Annexure-V

1. Central Government Offices

a.	Within Delhi	- Only those offices be allowed to remain in Delhi which are the essential part of the Central ministries and perform ministries protocol and Liaison function.
b.	Outside Delhi within DMA	- Expansion of existing ministries offices functioning in Delhi only be allowed.
c.	Outside DMA within NCR	- New offices, central government offices of Northern Region.

Annexure - VI

2. Quasi-Government offices -
(Public Undertakings etc.)

a.	Within Delhi	- Only liaisoning unit of the undertakings if it performs liaisoning function to be retained.
b.	Outside Delhi but within DMA	- Only liaisoning unit of the undertakings if it performs liaisoning function to be retained.
c.	Outside DMA but within NCR	- No restriction.

(C) POLICY REGARDING THE LOCATION OF DISTRIBUTIVE TRADES IN THE NATIONAL CAPITAL REGION.

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Distributive trades in Delhi is one of the basic activities of the city. This has been facilitated due to three determining factors which have been favourable to Delhi and given it dominance over the region (1) The spatial location of Delhi in relation to transport and communication net-work in the region. (2) The resources available in Delhi and its environs. (3) The functional specialisation of Delhi. Delhi being the centre of political and administrative power, the concentration of banking activities, godowns, transport and communication facilities including marshalling yards have all combined to help the growth of wholesale trade in Delhi, which now ranks as the third biggest distributive centre in the country, next to Bombay and Calcutta.

2. In 1951 Delhi had 22.8% of its working force in trade and commerce which was second to the services sector. In 1961, however, trade and commerce ranked third in order next to services and industries. The percentage of workers in this sector reduced to 19.3%. The total number of workers increased from 1,17,338 to 1,43,809 during the period. Again in 1971 the percentage of workers in trade and commerce increased to 21.46%. The net increase during the decade was 95,910 persons which is more than three times the increase during the decade 1951-61. In the decade 1971-81 in trade and commerce sector 41,3430 people were working which comes out to be about 22% of the total workers. The number of workers in trade and commerce sector has almost doubled during the decade 1971-81.

3. Most of the distributive trades in Delhi have been established in 19th and 20th centuary and are located in old Delhi area, where the majority of the

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markets are located in close proximity to one another. This may be mainly due to the fact that they had to be located close to the Delhi Railway station. This has the advantage that an outsider who comes to Delhi buy three or four kinds of commodity and also can move within a small area and make purchase.

4. As per information gathered through wholesale merchants association, in 1981 there were about 24,600 wholesale establishments in Delhi. During an exercise undertaken by the perspective Planning wing of DDA in 1981, while preparing second master plan of Delhi it has been revealed that out of the total 12,000 commodity handling shops surveyed, the largest number 2142 shops i.e. 17.8% are in textile and textile products. The other major commodities are auto-motor parts and machinery (1965 shops i.e. 16.3%), fruits and vegetables (858 shops i.e. 7.1%)hardware and building material (659 shops i.e. 5.5%)and paper, stationery and books (590 shops i.e. 4.9%) (Annexure - VIII)

5. The goods for many of the wholesale trades comes to Delhi from all over the country. The very fact that Delhi has emerged as the biggest consumption centre in whole of North India has made it a big distributive centre also. Due to its strategic location in North India with regard to transportation facilities almost every wholesale trade generated from North India finds its base in Delhi. The area of distribution also covers a wide field. It is not confined to Delhi and the National Capital Region but extends over the whole of North India and even for some commodities to whole of India(Annexure-VII).

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6. The major part of the commodities which are brought to Delhi is distributed outside Delhi. A survey conducted in 1981 with regard to distribution of wholesale commodities outside Delhi revealed that percentage exports outside Delhi, in some of the commodities like textiles and textiles products, Radio, T.V. parts, fruits and vegetables, electrical and electronics chemicals, food grains, cosmetics and toileteris, Dry fruits and spices, surgical and scientific instruments are as high as 80%(Annexure-IX).

7. The two important aspects which are to be considered while highlighting the distributive trades of Delhi are (1) The concentration of wholesale activity in central city has grown in an unplanned manner and has resulted into congestion, encroachment on public land, traffic bottlenecks and parking problems, besides causing excessive noise in the area, the reducing the quality of life of the resident population (ii) Due to strategic location and importance of Delhi, since the concentration of trade and commerce activities have taken place in Delhi, a regional imbalance has been created. The towns of the region are lacking in economic activities due to want of sound economic base. Their growth has not been upto the level that would divert the growth of population from Delhi.

8. The wholesale trade in Delhi is more regional in nature than local. It is, therefore, in the larger context of regional development and the necessity of limiting population of Delhi within manageable limits and the lack of heavy investments to improve the condition of all the trades, services consideration has to be given to the shifting of some of these distributive trades in the NCR alongwith such measures as decentralisation of central Government offices and industrial dispersal in the region.

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9. For selecting the trades suitable for decentralisation, the criteria of permitting/developing facilities for only those commodities which are directly used or consumed in Delhi be adopted. All other commodities, majority of which are not directly used in the city be marketed from outside Delhi Urban Area and DMA towns. A study of twenty five individual trades, have been done (Refer Annexure IX). The study reveals that in cases of certain commodities most of the bulk which is procured in Delhi is just exported outside Delhi and a very meagre portion is consumed in Delhi. The existence of these wholesale trades is not justified in Delhi. These trades can even function from other places efficiently provided reasonable infrastructure facilities are made available at these places.

10. In order to achieve the objective of harmonized development of the region as such and to curb population pressure on Delhi, restructuring the economy of the regionby way of relocating the distributive trades of Delhi in the various towns of NCR and the counter-magnets is necessary. A three tier approach in this direction is proposed to be adopted.

A study with regard to inward and outward movement of certain commodities in Delhi along the National Highway and major roads has been done by DDA in 1981 (Annexure X). The study also helps in identifying the areas from where these commodities are procured and distributed. For suggesting locations of the distributive trades in different towns of NCR extensive potential surveys of the towns and their economic linkages with Delhi will be necessary. This also envisages rerouting of the commodities in the new wholesale markets and the pattern of their distribution. Extensive studies in this regard with respect to each and every trade will have to be undertaken in depth

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before taking final decisions in this regard. However, based on the studies carried out as aforesaid and the suggestions received in this regard and also keeping in view the suggestions given in earlier NCR plan some of the tentative locations for locating distributive trades outside Delhi and DMA are as under :

1.	Cloth trade	-	Modinagar, meerut, Rohtak, Alwar
2.	Bicycle trade	-	Sonepat, Rewari
3.	Fruits and vegetables	-	Meerut, Alwar, Sonepat.
4.	Motor parts and machinery	-	Meerut, Alwar
5.	Dry fruits, spcies and herbs	-	Khurja, Rohtak, Alwar
6.	Hoisery	-	Panipat, Meerut
7.	Iron and steel	-	Alwar
8.	Fuel oil	-	Meerut, Alwar
9.	Food grains	-	Hapur, Meerut, Rewari, Alwar, Khairthal
10.	Timber	-	Alwar; Baraut, Jagadhari
11.	Furs and Skin	-	Alwar, Panipat
12.	Fodder	-	Rohtak, Khurja
13.	Pulses	-	Khurja, Rewari, Hapur, Khairthal.

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ANNEXURE-VII

DISTRIBUTIVE TRADES IN DELHI-ORIGIN & DESTINATION OF COMMODITIES(1969)

Sl.	Distributive trades	Procurement area	Distributive area
1.	Fruits & Vegetables	Afghanistan, T&K, UP, Haryana, Punjab, Bombay Rural Delhi, Jaipur, HP, Andhra.	Delhi Metropolitan area Kanpur, Lucknow, Bareilly Norther & Southern India.
2.	Foodgrains(Coarse)	Haryana, UP, HP, Punjab, Rajasthan.	Delhi, UP, MP, Maharahtra, Bihar, Gujarat, W.Bengal, AP, Kerala, Madras, Mysore.
3. (a)	Wheat and rice	-do-	Delhi
(b)	Fooder	Haryana, Punjab, MP, Rajasthan.	Delhi, UP, Rajasthan, Bihar.
4.	Cloth	Bombay, Ahmedabad, Indore, Kanpur, Delhi.	Punjab, Haryana, Rajasthan, HP, UP, MP, Bihar, Orissa, Assam, W.Bengal, Delhi.
5.	Bycycles, Tyres & Tubes	Modinagar, Punjab, Bombay, Calcutta, Kerala, Madras, Bengal Sonepat.	UP, MP, Assam, Haryana, Delhi, Punjab, Bombay.
6.	Dry fruits, spices, Herbs, etc.	Iran, Afghanistan, J&K, S.India, Maharashtra, UP, MP, Gujarat.	Delhi & area of 200 miles radius, J&K, Haryana, Rajasthan, W.UP.
7.	Hosiery	Delhi, Calcutta, Kanpur Ludhiana, Bombay	Delhi, Punjab, HP, Rajasthan, UP, MP, Kashmir, Bihar.
8.	Timber.	MP, J&K, HP, MP, Maharashtra.	Delhi, Punjab, Haryana, UP, Rajasthan.
9.	Cotton	Hissar and other districts of Haryana	Delhi, UP.
10.	Iron scrap and Junk	COD Cantt, Delhi, Rly Depot, Shakur Basti, and such other depots throughout India.	Delhi, Punjab, Haryana, Rajasthan, UP, MP.
11.	Old motor parts and machinery	Delhi, Bombay, Kanpur, Allahabad.	Delhi, Punjab, Haryana, UP, Rajasthan.

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1	2	3	4
12.	Iron and steel	Hindustan Steel TISCO ISCO, Calcutta, Govendgarh, Faridabad.	Delhi, UP, Rajasthan, Punjab, Haryana.
13.	Hardware	Delhi, Calcutta, Bombay	Delhi, Punjab, Haryana, UP.
14.	Furs, Skin and Wool	Delhi, Rajasthan, UP, Punjab, Jaipur.	Europe, America, Russia, Madras, Panipat, Delhi.
15.	Glass sheets.	Faridabad, Calcutta, Ahmedabad.	Delhi, Punjab, Haryana, UP, Rajasthan.
16.	Oil	-	-
17.	Electrical goods.	Delhi, Bombay, Calcutta Patna, Kanpur.	UP, Haryana, HP, Punjab, and neighbouring areas.
18.	Radio parts.	Delhi, Faridabad, Hyderabad.	Delhi, W.UP, Haryana, Punjab, Rajasthan, HP, UP,JK.
19.	Films	Bombay, Madras	Delhi,UP.
20.	Medicines	Bombay, Calcutta, Madras, Delhi	Delhi, Rajasthan, Punjab, UP, HP, J&K.
21.	Surgical Instruments	Jullunder, Delhi, Meerut, Ambala.	All India.

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S.No	Commodity	No. of shops	% age
1.	Textiles and textile products	2142	17.8
2.	Automotor part and machinery	1965	16.3
3.	Fruits and vegetables	858	7.1
4.	Hardware and building material	659	5.5
5.	Paper stationery and books	590	4.9
6.	General merchants and Kiryana	541	4.5
7.	Iron and steel	423	3.5
8.	Bicycles, tyres and tube	411	3.4
9.	Electrical and electronics	405	3.4
10.	Chemicals	365	3.1
11.	Rubber and plastic goods	333	2.8
12.	Scrap material (Kabari)	319	2.7
13.	Hosiery	299	2.5
14.	Leather, fur, skin and woollen products	289	2.4
15.	Other metal products	268	2.2
16.	Timber and plywood	263	2.2
17.	Food grains	252	2.1
18.	Other food material	230	1.9
19.	Radio, T.V parts and accessories	209	1.7
20.	Cosmetics and toiletories	201	1.7
21.	Furniture and fixture	185	1.5
22.	Dry fruits and spices	148	1.2
23.	Crockery and utensils	126	1.1
24.	Oil, ghee etc	110	0.9
25.	Foot wear	71	0.6
26.	Pan, beedi, cigarettes	69	0.6
27.	Water, clock,opticals	47	0.4
28.	Fodder and straw	34	0.3
29.	Medicines	28	0.2
30.	Surgical and scientific instruments	10	0.1
31.	Seeds	18	0.1
32.	Cotton	14	0.1
33.	Others	15	0.1
	Total	12,029	100.0

Distribution of wholesale ... Delhi - 1981

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S.No	Commodity	% Export Outside Delhi
1.	Textiles and textile products	95
2.	Radio, T.V. parts and accessories	90
3.	Fruits and Vegetables	80
4.	Electricals and Electronics	80
5.	Chemicals	80
6.	Food grains	80
7.	Cosmetics and toiletories	80
8.	Dry fruits and spices	80
9.	Surgical and scientific instruments	78
10.	Leather, fur, skin and woolen products	77
11.	Bicycles, Tyres and tubes	75
12.	Hosiery	75
13.	Watch, Clock, opticals	71
14.	Petroleum products	64
15.	General merchants and Kiryana	63
16.	Rubber and Plastic goods	60
17	Other metal products	60
18	Medicines	50
19.	Auto motor parts and machinery	50
20.	Paper stationary and books	50
21.	Furniture and fixtures	40
22.	Hardware and building material	40
23.	Timber and plywood	34
24.	Iron and steel	25
25.	Crockery and utensils	

Annexure X

Commodity - wise good movement by N.H/Major road in Delhi-1981

S.No.	Commodity	NH-1		NH-2		NH-9		NH-10		NH-24		Uni		Total	
		In-ward	Out-ward	In-ward	Out-ward	In-ward	Out-ward	In-ward	Out-ward	In-ward	Out-ward	In-ward	Out-ward	In-ward	Out-ward
1.	Building material	46	39	260	41	170	46	37	15	77	37	181	32	771	210
2.	Fruits & vegetables	445	84	31	180	80	115	7	43	26	223	39	16	628	669
3.	Cereals	58	76	115	50	100	140	76	21	110	37	32	6	491	330
4.	Iron and Steel	10	82	176	41	45	9	12	12	62	31	-	7	304	182
5.	Textiles	10	23	38	6	35	23	99	-	11	149	-	7	193	208
6.	Retail	60	146	68	51	194	162	42	58	190	179	16	20	570	616
7.	Coal	2	30	54	4	10	9	-	12	78	-	-	-	144	55
8.	Ind. raw material	33	65	139	65	111	50	13	30	84	94	8	25	398	320
9.	Commodities Miscellaneous	22	157	121	125	157	105	117	36	125	242	16	21	550	587
	Total	694	692	1001	571	902	660	403	227	765	992	292	135	4055	3277

WHOLESALE TRADES

a. Within Delhi — Only those wholesale trades be developed in Delhi which are directly used and consumed in Delhi. Consumption upto atleast 60% of the procured commodity.

b. Outisde Delhi within DMA — The wholesale trades directly ursed and consumed in Delhi and DMA towns and are of hazardous should be located in DMA towns including cold storage and godowns.

c. Outside DMA within NCR — The distributive trades which are functioning in Delhi are proposed to be developed in the following towns of NCR outside DMA.

1. Cloth trade	Modinagar, Meerut, Rohtak, Alwar.
2. Bicycle trade	Sonepat, Alwar.
3. Fruits and vegetable	Meerut, Alwar, Sonepat.
4. Motorparts, Machinery	Meerut, Alwar.
5. Dry fruits, spices and herbs	Khurja, Rohtak, Alwar.
6. Hosiery	Panipat, Meerut.
7. Iron and steel	Alwar.
8. Fuel oil	Meerut, Alwar.
9. Food grains	Hapur, Meerut
10. Timber	Alwar, Baraut, Jagadhari.
11. Furs and skin	Alwar, Panipat.
12. Foddar	Rohtak, Khurja.
13. Pulses	Khurja, Rewari, Hapur, Alwar, Khairthal.

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CHAPTER - D

REGIONAL LANDUSE

Regional Landutilisation in NCR:

1. In NCR, agriculture is the predominant user of land and covers 80% of the total reporting area. The area under the category of land put to non-agricultural use which includes built up area, roads and waterbodis constitute about 10% of the region(Table 1 and 2)

2. Land under Agriculture:

(i) Net area sown and fallow lands together constitute agricultural land. In 1981-82 out of the total reporting area about 75% was reported as net sown area. The net sown area is concentrated in the tehsils of Rohtak, Sonepat, Mahendragarh, Mewana, Sardhana, Bagpat Hapur and Bulandshahr where more than 80% of the reporting area is under this category(Annexure-1). While Ghaziabad and hilly tehsils of Rajasthan sub-region had less than 60% and Delhi being,the least, had 37% of the total reporting area under this category. This category of land should be protected as far as possible. Fallow land constitutes about 50% of the total reporting area in the Region. Delhi had very high concentration of fallow lands which constitutes 22% of the reporting area of Delhi Union Territory, while other tehsils of Sub-region had negligible proportion of fallow lands. Fallow land can be brought under cultivation by providing irrigation facilities.

(ii) Other - Uncultivated Land:

This category includes culturable waste, permanent pastures and other grazing land and land under miscellaneous tree crops and groves. Culturable waste constitute about 20% of the reporting area and distributed in Ghaziabad, Sikandrabad, Garmukteswar and Alwar tehsils. While most of tehsils of Haryana Sub-region and Mawana tehsil of UP Sub-region the area under this category reported nil. Area under pasture lands and other grazing lands constitute 1.14% of the total reporting area and sparsely distributed in the region.

(iii) Land not available for cultivation:

This category includes land put to non-agricultural use, barren and uncultivated land. The land put to non-agricultural use includes built up areas, areas under transport network and waterbodies. Ghaziabad tehsil (25%) and Delhi (24.51%) had the highest concentration of land under this category, other tehsils of high concentration were Gurgaon and Faridabad. This is mainly due to the high urbanisation. While Bulandshahr, Khurja, Sikandrabad had least areas under this category where urbanisation is low.

The proportion of barren and uncultivated lands is high in Tijara, Alwar, Ramgarh, Kishangarh and Mandawar tehsil of Rajasthan Sub-region and Delhi had more than 12% of the total reporting area under this category. Haryana and UP Sub-region had negligible area under this category. The land

not available for cultivation is increasing at an average of 25,000 hectares per year mainly due to urbanisation. The rational use of land for non-agricultural purposes thus becomes a matter of primary importance.

(iv) Land under Forest:

Forest forms a meagre proportion of the total reporting area in the region. The area under forest constitutes 2.64% of the total reporting area in the region. The forest is concentrated in Alwar tehsil of Rajasthan Sub-region and the stretches along the Ganga river in UP Sub-region.

2. Landuse: - A Regional Perspective.

(i) Landuse characteristics: Two main factors are responsible for the change of the landuse characteristics in the NCR. The first has been the continuous rapid increase in economic activity in Delhi Urban Area and the consequential rise in population within it mainly due to in-migration. In 1981, 63% of the total urban population of NCR lived in Delhi. This concentration of economic activity not only led to population concentration in Delhi but also to the economic impoverishment of the rest of the region.

(ii) The second factor has been the increase in the development of industries on the traffic arteries leading away from Delhi and the premature and speculative sub-division of land for residential and industrial purposes

outside Delhi. Development of such industries along the traffic arteries and the great imbalance of social infrastructure in the DMA town and low growth of other towns in the region have characterised the present landuse demands in the region.

(iii) The above development have had their effect on the pattern of urbanisation and employment trends. In 1981, the trends of urbanisation in and around Delhi indicated that out of the total population of 191.93 lakhs nearly 48% lived in urban areas of which Delhi urban Area, accounted for about 30%. Thus the region is predominantly rural, both in population component as well as in its occupational structure with more than 50% of the working force employed in primary sector.

(iv) The dominant role of the economic development of Delhi Urban area has influenced to a large extent the present urban structure within the region. The preponderance of Delhi's growth is reflected in its interlinkages with other centres both within and outside the region and in the country as a whole. Thus the road and rail routes converge on Delhi and diverge in the opposite direction for movement outside Delhi. This has resulted in flourishing wholesale market in Delhi for the entire North-Western India. This reflected in the present endowment of landuse viz main urban centres along the arteries and to certain extent industrial agglomeration.

(v) In the agricultural sector the perennial sources of water from Yamuna and Ganga along with its distributaries which flow within the areas has shaped the agricultural economy of the Region with its concomitant development of rural settlements. The availability of fertile land and vast underground resources of water and also irrigation schemes is bound to play a part in the development in the rest of the Region.

3. Future landuse Trends in NCR:

(i) During the Plan period, the primary Sector and agricultural economy will continue to form the main stay in the region, although the urban structure in the future perspective would continue to play more dominant role. The major employment opportunities will continue to be in the primary sector, although by dispersal of economic activity away from Delhi, a different hierarchial order of urban centres will emerge which will increasingly provide employment opportunities to non-agricultural sector.

(ii) The proposed Transport and Communication system which signifies a new development strategy based on the Radial Corridor Pattern provides the key for rationalisation and reorganisation of landused in the Region. The urban centres along the corridors would create more employment in secondary and tertiary sector and thereby bringing about concentration of urban population in these centres. Consequently, there will be a shift in the land requirements from non-agricultural to urban purposes.

(iii) Apart from the above developments, there will be the development and investment in industries to provide the necessary economic opportunities for the anticipated urban population of 234 lakh in the Region. As a major aspect of the regional Policy, these industrial areas are to be developed in the selected priority urban centres. On this basis the requirement of land for industries will become a part of the requirement of urban landuse.

4. Future Regional Landuse:

(i) Land for Agriculture:

In view of the anticipated changes in landuse there would be a major impact on land requirements of the agricultural sector. To the extent that new employment opportunities are proposed in non-agricultural sector and consequent concentration of new population, the existing urban expansion would have to be met mostly from the existing agricultural land. This obviously necessitates a rational policy of utilisation of less valuable agricultural land for urban expansion and as far as possible unproductive or barren land for urban expansion/new urban centres. The second cause of change in the agricultural land would be on account of creation of lakes, reserviors, flood protection works, urban water supply, schemes and irrigation network within the region. This calls for intensive utilisation of available agricultural land for production purposes; such land as well as those that would be reclaimed by flood protection have to be reserved for agriculture.

(ii) Land for urban centres:

It has been proposed that out of the assigned population of 325 lakhs by 2001, about 234 lakhs would be accommodated in the urban areas which accounts 72% of the total population in the Region. In order to ensure balanced regional development three themes have been proposed, (i) Delhi's growth would be restricted to 112 lakh population (ii) dispersal of 37 lakh population to the towns under Delhi Metropolitan area and (iii) Development of urban centres by way of location of industrial, commercial, Govt. offices and other employment opportunties to accommodate 87 lakhs urban population outside the DMA. The major share of population would be gained by the selected priority towns. To accomodate the total 50.00 lakhs population in the selected 8 Priority urban centres/ urban complex outside DMA, the total land of 40,000 Ha.(400 sq.km)would be required for urban expansion. Thus the additional land of 20,000 Ha.(200 sq.km) would accommodate the additional population of 36.40 lakhs.

(iii) Land for Regional Recreational Purposes:

Recreation as an amenity has to meet four competing types of demand: from the urban population of the region using country side as an amenity, from a wide urban population coming to the region for recreational purposes from the agricultural community and from the physical development of the region itself.

89

The landuse policy on recreational areas will meet the demand in the following way:

1. Areas of general level amenity as regional park in the proximity of the metropolis.

2. River front 'as recreational areas' by developing them and making them more accessible for such use.

3. Historical monument as Tourist attraction.

4. Parks in rural areas noted for their landscape and scenic beauty which could be used as picnic spots.

5. National park in the vicinity of the Region.

① Total land requ = Propn Popn × / 125 (density)
Additional land requ = Total land requ − Existing

② Total land requirement for additional population = Addl. Popn / 125

Table: LAND REQUIREMENT FOR URBAN DEVELOPMENT IN PRIORITY URBAN AREAS-2001

Urban Centre/urban Complex	Exsting Area (in Hac)	Population 1981 (per Hac)	Density 1981 per ha)	Assigned population 2001 (in lakh)	Additional population to be accomoadated	Total Land required (in Ha.)	Additional Land Required hactares
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Meerut	8082	5.37	66.4	13.00	7.63	10,400	2398
2. Hapur	583	1.03	176.4	6.00	4.97	4800	4217
3. Bulandsharh Complex	1975	1.70	86.1	10.00	8.30	8000	6025
a)Bulandsharh							
b)Khurja							
4. Palwal	552	0.47	85.7	3.00	2.53	2400	1848
5. Panipat	2082	1.38	66.2	5.00	3.62	4000	1918
6. Rohtak	2203	1.67	75.9	5.00	3.33	4000	1797
7. Rewari Complex							
a)Rewari	606	0.52	85.0	3.00	2.48	2400	1794
b)Dharuhera							
c)Bhiwadi(in Rajasthan)							
8. Alwar	8000	1.46	18.2	5.00	2.54	4000	Nil
	24,083	13.60	56.5	50.00	36.40	40,000	19917

approx 20,000 hac

: Density assumed 125 persons per hectares.

Additional Population to be accommodated

TABLE:

LAND REQUIRED FOR URBAN DEVELOPMENT IN THE DMA TOWNS - 2001

Name of the DMA TOWN	EXisting popolation (in lakhs)	Existing area in Hectares	Population assigned for 2001 (in lakhs)	Total land required (in Hec)	Additional land required (In hec)	Remarks
1	2	3	4	5	6	7
Ghaziabad including LONI	3.00	~~6300~~ 6840	11.00	8.00 3300	~~2000~~ 1960	Density assumed as 125 persons per hectare
NOIDA	0.75	600	5.5	4.75 4400	3300	
Faridabad	3.31	~~16444~~ 17824	10.00	6.69 8000	nil	
Gurgaon	1.00	~~2400~~ 2413	7.00	6.00 5600	3200	
Bahadurgarh	~~0.40~~ 0.37	900	2.00	1.63 1600	700	
Kundli	0.25	200	1.50	1.25 1200	1000	
Total	~~8.71~~ 8.68	~~27344~~ 28777	37.00	28.32 29600	~~10706~~ 10660	

Table-1 LAND UTILISATION IN NCR

Landuse Catagory	Sub-region				
	Delhi U.T.	Haryana	Uttar Pradesh	Rajasthan	NCR
Forest	0.97	2.94	2.08	2.35	2.65
Not available for cultivation					
a) Land put to non-agri cultural use	24.51	9.67	11.09	4.73	9.85
b) Barren and Uncultivated land	12.68	1.61	3.90	13.47	4.35
Other Uncultivated land					
a) Permanent Pasture and other grazing land	0.54	0.94	0.43	2.70	1.44
b) Land under misc. tree crops and groves.	0.77	-	0.51	0.02	0.10
Culturabe waste	0.58	1.45	2.54	1.69	1.56
Fallow Land					
a) Fallow land other then Current fallow	22.10	2.83	2.15	2.41	3.75
b) Current fallow	-	-	2.29	4.72	1.00
Net areas sown	37.85	8056	75.04	67.92	75.55
Total Reporting Area	100.00	100.00	100.00	100.00	100.00

* Figures indicate the percentage to total Reporting Area.

Table: 2

Existing Landuse in the National Capital Region-1981-82

(Area in Hectare)

Sub-region	Reporting area	Forest	Not available for Cultivation		Other uncultivated Land		Culturable waste	Fallow Land		
			Land put to non-agricultural use.	Barren and uncultivated land	Permanent pastures and other grazing land	Land under misc. tree crops and groves		Fallow other than current fallow	Current fallow	Net area sown
1	2	3	4	5	6	7	8	9	10	11
Delhi	147488	1434 (0.97)	36149 (24.51)	18707 (12.68)	793 (0.54)	1137 (0.77)	856 (0.58)	32589 (22.10)	- -	55822 (37.85)
Haryana	1800,000*	53000 (2.94)	174000 (9.67)	29000 (1.61)	17000 (0.94)	- -	26000 (1.44)	51,000 (2.83)	- -	1450000 (80.56)
Uttar Pradesh	304362	6333 (2.08)	33716 (11.09)	11875 (3.90)	1302 (0.43)	1551 (0.51)	7731 (2.54)	6497 (2.15)	6971 (2.29)	228386 (75.04)
Rajasthan	420348	9870 (2.35)	19875 (4.73)	56618 (13.47)	11325 (2.70)	91 (0.02)	7101 (1.69)	10128 (2.41)	19856 (4.72)	285484 (67.92)

Area * Figures in brackets indicate percentage to total reporting area.
*Includes the Panipat District.

Source: 1. Statistical Abstract of Haryana-1982-83
2. Bulandshar, Meerut and Gaziabad Districts.
3. Statistical Abstract-1981 Govt. of Rajasthan.

ANNEXURE-I

Lnad Utilisation in NCR-1981-82

(Area in Hectare)

Dist/ Tehsil	Reporting area	Forest	Not available for Cultivation	Other uncultivated Land		Culturable waste	Fallow Land		
			Land put by to non-agricultural use.	Barren and uncultivated Land	permmanent pastures and other grazing land	land under misc. tree crops and groves	Fallow other than Current fallow	Current fallow	Net Sown Area
1	2	3	4	5	6	7	8	9	10	11
U.T. of Delhi	147000	1434 (0.97)	361439 (24.51)	18707 (12.68)	788 (0.54)	1137 (0.77)	856 (0.58)	32589 (22.10)	"	55822 (37.8
Gurgaon	279000	12,000 (4.30)	40,000 (14.33)	3000 (1.50)	2000 (0.72)	"	"	"	18000 (6.45)	202,0 (72.4
Faridabad	213000	4,000 (1.60)	29,000 (13.60)	8,000 (3.70)	3,000 (1.40)	"	"	"	1,000 (0.7)	16,00 (78.8
Mahendragarh	321000	3000 (2.50)	38000 (10.2	10,000 (3.10)	4,000 (1.25)	"	"	"	2000 (0.95)	263000 (81.9
Panipat**										
Karnal	394000	14000 (3.56)	31,000 (7.87)	4,000 (0.50)	6000 (1.52)	"	8,000 (0.51)	"	14,000 (3.55)	325,00 (82.5
Rohtak	374,000	7,000. (1.87)	25,000 (6.68)	2,000 (0.53)	"	"	14,000 (0.75)	"	3,000 (2.14)	317,00 (84,76

1	2	3	4	5	6	7	8	9	10	11
7. Sonipat	219,000	8000 (3.65)	15000 (6.85)	2000 (0.91)	2000 (0.91)	- -	10,000 (4.57)	- -	7000 (3.20)	175000 (79.91)
Haryana Sub-region	1800,000	53,000 (2.94)	174000 (9.67)	29000 (1.67)	17000 (0.94)	- -	26000 (1.44)	- -	51000 (2.83)	1450,000 (80.5)
8. Meerut	14477	829 ((573)	1,544 (10.67)	432 (2.98)	34 (0.23)	6 (0.04)	223 (1.54)	272 (1.88)	394 (2.72	10743 (74.21)
9. Mawana	19721	716 (3.63)	1791 (9.08)	166 (0.84)	- -	- -	- -	139 (0.71)	161 (0.82)	16748 (84.92)
10. Sardhana	17403	- -	1580 (9.08)	162 (0.93)	73 (0.42)	32 (0.18)	107 (0.61)	101 (0.58)	407 (2.34)	14941 (85.85)
11. Bagpat	17540	177 (1.00)	2253 (12.85)	364 (2.08)	4 (0.02)	5 (0.03)	62 (0.35)	217 (1.24)	215 (1.23)	19293 (81.20)
12. Bulandshahr	22723	29 (0.13)	2556 (9.93)	626 (2.75)	52 (0.23)	178 (0.78)	132 (0.58)	178 (0.78	478 (2.10)	18494 (81.39)
13. Khurja	28692	818 (2.85)	2316 (8.07)	2296 (8.00)	77 (0.27)	407 (1.42)	1780 (6.20)	392 (1.37)	559 (1.95)	20047 (69.87)

1	2	3	4	5	6	7	8	9	10	11
15. Sikandrabad	37230	157 (0.40)	2879 (7.70)	2605 (7.00)	803 (2.16)	295 (0.80)	1125 (3.20)	791 (2.10)	900 (2.40)	27675 (74 .24)
16. Anupshahr	28,354	2516 (8.87)	2567 (9.07)	599 (2.11)	39 (0.14)	85 (0.30)	667 (2.35)	485 (1.72)	494 (1.74)	20902 (73.72)
17. Gaziabad (Loni)	2822 6	80 (0.28)	7133 (25.25)	642 (2.25)	19 (0.07)	91 (0.32)	1624 (5.75)	1574 (5.58)	828 (2.93)	16235 (57.50)
18. Garmukteshar	33841	971 (2.87)	3419 (10.10)	1713 (5.06)	- -	226 (0.67)	1242 (3.67)	1620 (4.79)	1407 (4.16)	23343 (68.68)
19. Hapur	33380	- -	3793 (11.37)	283 (0.85)	2 (-)	136 (0.41)	229 (0.69)	278 (0.83)	458 1.37)	28201 (84.48)
20. Dadri	22775	40 (0.18)	1885 (8.28)	1987 (8.72)	199 (0.87)	90 (0.40)	540 (2.37)	450 (2.00)	670 (2.94)	16914 (74.27)
U.P.Sub-region	304362	6333 (2.08)	33716 (11.08)	11875 (3.90)	1302 (0.43)	1551 (0.51)	7731 (2.54)	6497 (2.15)	6971 (2.29)	228386 (75.04)

1	2	3	4	5	6	7	8	9	10	11
21. Alwar	92372	7657 (8.30)	6054 (6.55)	14753 (15.97)	1897 (2.05)	43 (.04)	3019 (3.25)	2039 (2.20)	3107 (3.36)	53803 (58.25)
22. Ramngar	59351 (57948)	6 (*)	2953 (4.98)	8154 (13.75)	2663 (4.50)	8 (*)	1229 (2.00)	3666 (6.20)	2184 (3.70)	38488 (64.85)
23. Bahror	72971	228 (0.3)	2681 (3.67)	6743 (9.24)	3123 (4.28)	2 (*)	180 (0.24)	1428 (1.96)	5129 (7.03)	53457 (73.26)
24. Kishangarh	74775	1127 (1.50)	3563 (4.75)	9925 (13.25)	848 (1.30)	9 (*)	585 (0.78)	1271 (1.70)	3584 (4.80)	53863 (72.00)
25. Tijara	63555	472 (0.75)	2770 (4.36)	10173 (16.00)	364 (0.57)	29 (0.5)	1817 (2.86)	1087 (1.71)	4222 (6.64)	42621 (67.06)
26. Mandawar	57324	380 (0.70)	1854 (3.23)	6870 (11.98)	2430 (4.24)	- -	271 (0.47)	637 (1.11)	1630 (2.84)	43252 (75.45)
Rajasthan Sub-region	420348	9870 (2.35)	19875 (4.73)	56618 (13.47)	11325 (2.70)	91 (0.02)	7101 (1.69)	10128 (2.41)	19856 (4.72)	285484 (67.92)

** Figures in brackets indicate percentage to total reporting Area.
** Area includes Kharnal District

Source:
1. Statistical Abstract of Haryana- 1982-83 Sankhya Patrika
2. Bulandshar, Meerut and Gaziabad Districts.
3. Statistical Abstract-1981 - Rajasthan.

C H A P T E R - E

TRANSPORT AND TELECOMMUNICATION PLAN FOR NCR

1.1. NCR Plan has been conceived to gain optimum growth of the region through planned development and also to mould and re-fashion the region both physically and economically, for a fuller realisation of wider and deep social values. Traffic system has been identified as one of the basic factor determining the type of development in terms of its spatial organisation and concentration. While existing transport network structure attracts further activities and envisages concentrated development, new lines would aid dispersal of activities and subsequently balanced development. This calls for a strategy to gain an organised transport network in conformity to the objectives attained in the NCR.

1.2. The determinants that should form the base for such an organised transport structure are :

(i) location of settlements in space with their volume of population - present and destined.

(ii) probable activity centres wherein induced development is expected on an intensified scale.

1.3. The approach adopted to evolve a viable settlement system in NCR involves identification of a four-tier system of settlements in which while the nearby same order centres would be linked directly, efforts would be to link the lower order centres with the nearby higher order centres. It envisages developing a few selected centres on an itensified scale which would form first order settlements irrespective of other settlements which may be identified later and selection/identification of such centres would be based on their ability to attach and accommodate greater volume of activities and population. Such centres identified are :

(i)	from Uttar Pradesh sub-region	Meerut, Hapur, Bulandshahr-Khurja
(ii)	from Haryana sub-region	Panipat, Rohtak, Rewari-Dharuhera and Palwal
(iii)	from Rajasthan sub-region	Alwar and Bhiwadi

1.4. Transport development in NCR has been essentially of corridor type. There are nine corridors in the NCR region which have formed the backbone of the region. There has been a substantial increase in the volume of activities, work force and population along these corridors over the period and as such it is only logical that these activity and population attracting corridors are utilised to gain the prime objective of NCR of controlling the growth of Delhi and encouraging or promoting regional towns by taking away such developmental activities to the distant regional towns.

1.5. Some of the salient fectures that could indicate growth trends of concentration along these corridors is presented in the map and Table 1.

(i) Though there has been a marginal reduction in the proportion of urban population in the corridor towns to total urban population of the region, with 80.94% in 1981, concentrated along these corridors against 82.7% in 1961. In absolute sense, net increase in urban population along these corridors is 190.5 lakhs which represents a growth of 174.85% during the period 1961-81.

(ii) The corridors Faridabad-Ballabhgarh-Palwal-Hodal-Hathin-Hasanpur, Gurgaon-Jharsha-Pataudi-Bawal and Loni-Khekra-Aggarwal mandi-Baghpat-Baraut-Tikri-Doghat have registered substantial increase in terms of proportion of region's urban population they accommodate while in others there has been a marginal reduction in that proportion.

(iii) Even though there has been a marginal reduction in the proportion of region's urban working force along these corridors, they have gained in absolute sense a total of 44.73 lakhs of urban working force registering a growth of 140.35% during the period 1961-81 indicating the excess volume of traffic that should be carried over by the existing lines. Every increase in the work force volume results in the associated manifold increase of dependent population.

100

TABLE - 1

Corridor Towns in the NCR with population and working Force - 1981.

Corriders	Towns	Population in corrider Towns (in 000's)	% to urban population of NCR	Working force in corrider towns (in 000's)	%tof urban working force of NCR	Work force in Non-Agri activities	% to urb: Non-Ari. working of NCR
1	2	3	4	5	6	7	8
1.	Ghaziabad-Muradnagar(GE)-Muradnagar-Modinagar-Niwadi-Meerut.	957.7	28.78	277.6	29.54	262.8	32.00
2.	Pilkhawa-Hapur-Babugarh-Garmukhteswar.	161.0	4.83	41.9	4.46	36.9	4.49
3.	Dadri-Sikandrabad-BulandShahr-Khurjha.	233.4	7.00	59.2	6.30	53.2	6.48
4.	Faridabad-Ballabhgarh-Palwal-Hodal-Hathin-Hosanpur.	408.6	12.28	132.7	14.12	124.4	15.16
5.	Gurgaon-Jharsha-Pataudi-Bawal	125.4	3.76	31.9	3.40	30.8	3.75
6.	Sohna-Nuh-Ferozpur-Jirka-Alwar.	173.9	5.22	46.5	4.96	43.2	5.27
7.	Bahadurgarh-Rohtak-Meghan-Kalanaur.	228.3	6.86	60.8	6.48	56.3	6.87
8.	Sonepat-Ganaur-Samalkha-Panipat	277.3	8.32	81.1	8.63	75.5	9.20
9.	Loni-Khekra-AggarwalMandi(Tasivi) Baghpat-Barawt-Tikri-Doghat	129.3	3.99	34.0	3.62	23.9	2.92
	Total	2993.1	80.94	756.0	81.51	707.5	86.14

(iv) Reflecting the concentration trend of total population along selected corridors, concentration of working force also has been along Faridabad-Ballabhgarh-Palwal-Hodal-Hathin-Hosanpur and Loni-Kekhra-Aggarwal mandi-Baghpat-Baraut-Tikri-Doghat corridors.

(v) Concentration of work force in non-agricultural activities is higher among the corridors, along Ghaziabad-Faridabad and Sonepat corridors. Volume generated by non-agricultural work force for transportation, in terms of service population and continuous goods traffic flow need not be over emphasised.

Traffic Flow Characteristics in NCR

Detailed traffic flow/volume characteristics of the NCR roads are yet to be done. At the interim plan level, it has been felt and decided that studies undertaken for 1973 plan could be taken as a base for determining the minimum requirements. Some of the details which have been collected while preparing 1973 plan or from various agencies recently is given in the forthcoming paragraphs (also Table 2). Regional transport for NCR has been analysed in three parts i.e., (i) intra-urban transport for Delhi, (ii) Transport facilities for Delhi metopolitan area and (iii) Transport facilities for the rest of the Region.

Intra-urban Transport

The Delhi-Urban Area extends from Menrauli in the South to Model Town in the North and Rangroi in the west to U.P. border in the east encompassing an area of 447.77 sq.km. with a radial distance of approximately 12 to 15 kms. in all directions.

At present major traffic load is taken by roads i.e., by buses and private vehicles. Nearly 7.5 million passenger trips are carried by major roads of Delhi through private and public transport daily. Projection studies done by DDA indicates that if no other mode of transport is developed, 12 million vehicular trips would be required

to be carried by roads in 2001. The capacity of roads is limitd and as such they would be incapable of taking traffic load beyond their capacity. Moreover, the time in journey to work place is increasing day by day due to more and more congestion on Delhi roads. As such, there is an urgent need to think over some rapid mass transport which may help in :

i) decongesting the Delhi urban roads
ii) lessening the journey time
(iii) lessening the risk of accidents on roads, and
iv) controlling the atmospheric and noise pollution

Delhi Metropolitan Area Transport

(a) Delhi Metropolitan Area (DMA) has been designated to comprise of Delhi U.T., Faridabad-Ballabhgarh Complex, NOIDA, controlled area Gurgaon, Bahadurgarh, Kundli and extension of Delhi ridge in Haryana encompassing an area of 3182 sq.kms. These surrounding towns are developing so fast that they tend to become a compact urban agglomeration with Delhi and as such need such transport facilities that can provide fast and efficient interaction between them and the U.T. of Delhi.

Delhi is the converging point of seven railway lines and five national highways. Unless strong measures are taken in the development pattern of the surrounding towns in NCR and the regional railways and road-linkages, the converging existing transport routes will create chaotic conditions in Delhi. The peripheral towns of Delhi U.T. such as NOIDA controlled area, Faridabad, Gurgaon, Bahadurgarh, Kundli etc., are developing very fast. But as these towns neither have loading and un-loading facilities at their railway stations for regional movement of freight nor inter-connection through proper roads and railways among each other in addition to lack of adequate booking facilities for passengers travelling within the NCR or out of the Capital Region,one has to reach Delhi main stations for the movement of freight as well as for passengers movement even if one does not have any business with Delhi Urban Area. In other words, the traffic which can easily byepass Delhi has to pass through Delhi

roads crowding them un-necessarily before it reaches its destination. About 7 to 8 lakh commuters and long distance travellers arrive and leave Delhi daily by three modes of transport, i.e., rail, road and air.

(b) Passenger Movement by Roads

Passenger movement by inter-state buses in the year 2001 - both incoming and outgoing has been projected to be 7,25,000 and the number of buses to be 14,000 in number.

(c) Freight Movement

Table 2 shows the movement of commodities in and out of Delhi. It indicates the following points :

i) Maximum movement of incoming trucks carrying building materials through NH-2(260 trucks) and through Loni road (181 trucks). Out of total incoming trucks of 771, only 210 are out going i.e., there is maximum consumption of building materials in Delhi.

ii) There are 628 trucks loaded with fruit and vegetable coming into Delhi (maximum through NH-1) and 668 are outgoing (maximum through NH-24). It shows that there is least consumption of fruits and vegetable which comes from north side in Delhi and most of the loaded trucks passing through Delhi are destined to U.P. side.

iii) Out of 491 trucks of cereals coming from outer areas to Delhi, 330 trucks are going out. This shows only 33% of the total cereals coming from outside is consumed in Delhi and 66% is meant for other areas of the Region that can easily bypass Delhi if facilities are available.

iv) Of the industrial raw material 320 trucks out of 338 incoming trucks go out i.e., 82% of the industrial raw material of the total incoming to Delhi is destined for outside DMA

v) Of the total annual gross freight to and from Delhi, nearly 80% is handled by road transport.

vi) About 14,500 trucks enter and leave Delhi daily. Of this nearly 50% is handled by NH-2 and NH-24.

vii) Of the 14279 trucks movement to and from Delhi on all regional roads 4572 are empty.

viii) Of the total truck traffic moving into Delhi, 25% is by passable

TABLE 2

COMMODITY WISE GOODS MOVEMENT BY N.H. /MAJOR ROADS IN DELHI - 1981

MODITY	N.H.1		N.H.2		N.H.8		N.H.10		N.H.24		LONI		TOTAL	
	In-ward	Out ward	In-ward	Out ward	In-ward	Out ward	In-ward	Out ward	In-ward	Out ward	In-ward	Out ward	In-ward	Out ward
Building material	46	39	260	41	170	46	37	15	77	37	181	32	771	210
Fruit & Vegetable	445	81	31	188	80	115	7	43	26	223	39	16	628	669
Cereal	58	76	115	50	100	140	76	21	110	37	32	6	491	330
Iron & Steel	10	82	175	41	45	9	12	12	62	31	-	7	304	182
Textiles	10	23	38	6	35	23	99	-	11	149	-	7	193	208
Retail	68	146	68	51	194	162	42	58	90	179	16	20	578	616
Coal	2	30	54	4	10	9	-	12	78	-	-	-	144	55
LNE raw material	33	55	139	65	111	50	13	30	84	04	8	26	388	320
Commodities Miscellaneous	22	157	121	125	157	106	117	36	125	242	16	21	588	687
TOTAL:	694	692	1001	571	902	660	403	227	763	992	292	135	4055	3277

Source: Survey conducted by Perspective Planning Wing, DDA .

(d) By Rail

Passengers:

According to studies conducted by Perspective Planning Wing of DDA, three rail terminals of Delhi cater to about 78,000 passengers daily going into and out of Delhi by rail as given below :

Delhi main station	50,000
New Delhi railway station	25,000
Nizamuddin	3,000

Total incoming and outgoing passengers handled at all 33 stations of Delhi suburbs including commuters are about 3,62,000 (1,92,000 commuters and 1,70,000 long and short distance passengers) through 261 trains (137 long distance and 124 short distance within NCR). The inter-city passenger movement in Delhi has been growing @ 4% per annum and as such the projections for 2001 are as below :

Daily total passenger	6,72,000
Commuters	3,54,000
Long and short distance passengers	3,18,000
Total trains	4000

As stated earlier, out of these 6,72,000 passengers a large number do not have any business in Delhi but have to pass through Delhi due to existing pattern of regional railways.

Freight

On an average about 1000 loaded wagons enter Delhi and about 150 loaded wagons leave DMA. The total freight handled by the rail in the region is estimated to be 25,000 tons per day. Of the total gross annual freight to and from Delhi, only about 20% is handled by railways and the rest by roads.

(e) By Air

Passenger

The International Airport Authority of India (IAAI) have projected the international air passengers and domestic air passengers at the following rates as recommended by the committee on Air Transport Policy, Ministry of Tourism and Civil Aviation.

	Annual growth rate	Number of passengers in 2001
International passengers	12.0%	163 lakhs
Domestic passengers	12.0%	191 lakhs

Cargo traffic : The Cargo movement projected by IAAI for for 2001 is as below :

	Passenger rate of increase	Volume in 2001
International cargo	15%	6.4 tonnes
Domestic cargo	12.5%	7.9 tonnes

Strategy for Development

A. For roads :

To cater to the transport needs of the Region, the strategy for the development of the regional roads is that :

(i) It may encourage efficient and safe interaction between Delhi and the regional towns through roads by elevating the hierarchical load of important roads from their present standard.

(ii) It may relieve Delhi roads from byepasses passenger and good traffic, and

(iii) it may encourage interaction between the intra-regional towns by developing effient rail and road inter-lines.

Proposals for the Road Network

1. Development of the stretches of NH-1 (Delhi-Panipat), NH-2 (Delhi-Palwal), NH-10 (Delhi-Rohtak), NH-8 (Delhi-Gurgaon), NH-24 (Delhi-Ghaziabad) and existing State Highway between Ghaziabad-Meerut to four lane divided c/w to be known as M-1 motorway with acquisition of r/w, of 100 mts, within NCR including development of service roads in the built up area.

2. Development of an inner Grid** of M-2 motor way connecting Sonepat-Baghpat-Meerut-Hapur-Bulandshahr-Sikandrabad-Faridabad-Gurgaon-Jhajjar-Rohtak-Gohana and Sonepat.

This grid has been envisaged mainly to inter connect all the inner ring towns in the region. It would also serve to by-pass the inter-regional movement from Delhi Urban Area.

This would require :

On the Uttar Pradesh side

i) Strengthening from Yamuna Bridge to Baghpat and to Meerut

ii) Widening and strengthening between Sikandrabad and Dankaur (the stretch between Bulandshahr to Sikandrabad is already covered).

iii) Construction of Yamuna bridge and missing links in the stretch of Dankaur - Yamuna Bridge - Sikandrabad - Faridabad.

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* The M-1 motor way to be of dual carriageway of sufficient lane width, all intersections grade separated and at intervals 3 to 5 kms (2 to 3 miles) apart. Access controlled with no frontage access, with full restrictions on standing vehicles and designed for a speed of 100 kms per hour. The bridges should be designed for the prescribed highest IRC loading.

** The inner and outer grid roads of M-2 motorway category would be of two lane c/w initially with acquisition of full r/w of 60 metres (within Seventh and Eighth Plan period) and two four lane c/w finally (by 2001 A.D.)

On the Haryana side

i) Strengthening complete (20 km) and widening part of (12 km) of the road from U.P. Border to Sonepat

ii) Strengthening and widening of the complete stretch (35 km) between Sonepat-Gohana.

iii) Strengthening complete (45 kms) and widening part of (38 kms) the Jhajjar-Gurgaon stretch.

iv) Strengthening complete (38 km) and widening part of (31 km) the Gurgaon-Faridabad stretch.

v) Strengthening and widening of the complete stretch (18 km) between Faridabad to U.P. Border (upto Yamuna river).

3. Development of an Outer Grid*

Development of an outer grid of M-2 motorway connecting Panipat-Muzaffar Nagar-Meerut-Hapur-Bulandshahr-Palwal-Rewari-Jhajjar-Rohtak-Gohana and Panipat. The stretches from Meerut to Bulandshahr and Jhajjar to Gohana are common to outer and inner grid and a part of the proposed outer grid lies beyond NCR boundary.

This would require :

From U.P. side

i) Widening and strengthening of the stretch between Yamuna bridge - Muzaffar Nagar (54 kms) and strengthening of the stretch between Muzaffar Nagar and Meerut (53 kms)

ii) Widening of the stretch between Meerut-Hapur

iii) Widening and strengthening of Hapur-Bulandshahr stretch

iv) Widening and strengthening of the stretch between Khurja and Yamuna bridge (Bulandshahr-Khurja stretch is already covered)

i) Widening and strengthening :
Panipat, Panipat-Gohana, Gohana-Rohtak, Rohtak-Jhajjar, Jhajjar Rewari, Rewari-Sohna, Sohna-Palwal and Palwal-Yamuna Nagar (a total of 270 kms)

ii) Construction of new bridges and widening of some existing bridges.

4. Development of M-1 motorway between Rewari and Alwar

Besides the development of M-1 motor-ways, inner and outer grids, the transport problems of the first priority towns have been looked into. First action proposed in this direction is the Organisaion of bye-passes.

i) At present the roads from Delhi, Hapur, Garh, Parichhatgarh, Bijnor, Muzaffar Nagar, Sardhana and Baraut converge at Meerut before continuing towards different directions. Immediate completion of the bye pass on the western side of Meerut which would take off from the Delhi-Meerut road at Partapur towards North instead of the present line of North east that enters the city and join the Meerut-Muzaffar Nagar road near Modipuram North of Meerut.

ii) Completion of a bye-pass on the Eastern side of Meerut which should take off from the Delhi Meerut road, follow a circle around the eastern side of the city and join again Meerut-Muzaffar Nagar road. This would connect the roads coming from the towns such as Hapur, Garh, Parichhat Garh and Bijnor and join Meerut. Careful alignment of this line would enable, even though with a higher travel distance a minimal construction length by utilising the existing utilisable lengths.

Details of proposed works in U.P. sub-region

i) M-1 Motor-ways

Delhi-Ghaziabad-Meerut (47 kms)

a)	widening from two lane to four lane	23.50 kms
b)	Strengthening required	47.00 kms

ii) Outer Grid

Widening and strengthening (of entire length)

i)	Panipat-Muzaffar Nagar (upto Yamuna Bridge)	
ii)	Meerut to Hapur-Bulandshahr	69 kms
iii)	Khurja-Jewar	33 kms
iv)	Jewar-Palwal	12 kms

iii) Inner Grid

Widening and strengthening

i)	Sonepat-Meerut via Baghpat	55.80 kms
ii)	Bulandshahr-Sikandrabad-Dankaur	18 kms
iii)	Dankaur-Yamuna bridge-Sikandrabad-Faridabad	

iv) Cost of Yamuna Bridge

Detailed cost estimates are awaited.

Details of proposed works in Haryana sub-region

Name of the proposed outer circle :

Sanauli-Panipat-Gohna-Rohtak-Jhajjar-Rewari-Sohna-Palwal and Yamuna Bridge

Total length 270 kms

Type of work	(Cost as estimated by the respective State Govts.) (Rs. in lakhs)
1. Widening	
i) 18' to 22' - 216 kms	Rs. 216.00
ii) 12' to 22' - 27 kms	Rs. 74.25
2. Strengthening	
i) Length of 270 kms	Rs. 945.00
ii) Improving geometric and raising of roads(10% of total length)	Rs. --
3. New construction	
i) Bye passes/four laning at Rohtak, Jhajjar, Gohana Rewari, Sohna	Rs. 277.50
ii) Replacement/improvement of existing weak 2nd narrow bridges	Rs. 200.00
iii) Cost of bridges (on Agra Canal) and re-alignment of Palwal-Yamuna Bridge road including approaches	Rs. 500.00
iv) Cost of railway over bridge (five)	Rs. 1250.00
4. Land acquisition and others	
i) Cost of land acquisition for 270 kms (average 175' extra width)	Rs. 2295.00
ii) Providing junctions, sign boards and traffic signals	Rs. 270.00
iii) Street electrification of roads, side footpaths, drains etc.	Rs. 360.00
	Rs. 6576.75

Name of proposed inner circle :

U.P. Border-Sonepat-Gohana-Jhajjar-Gurgaon-Faridabad and upto U.P. Border (Yamuna river)

Total length : 156 kms.

	Type of work	Cost(Rs. in lakhs)
1.	Widening	
	i) 18' to 22' - 84 kms	Rs. 84.00
	ii) 12' to 22' - 44 kms	Rs. 121.00
	iii) 10' to 22' - 6 kms	Rs. 18.00
2.	Strengthening	
	i) Length 156 Kms.	Rs. 546.00
	ii) Improving geometric and raising of roads (10% of total length)	Rs. 112.00
3.	New Construction	
	i) Four laning at cities Faridabad Gurgaon and Sonepat	Rs. 166.50
	ii) Major bridges over river Yamuna and remodelling of existing bridge	Rs.1000.00
	iii) Railway over-bridges (3)	Rs. 750.00
4.	Land acquisition and others	
	i) Land acquisition for 156 kms (Average 175' extra width)	Rs.1326.00
	ii) Road junctions, sign boards and traffic signals	Rs. 156.00
	iii) Street electrification of roads including foot paths and side drains	Rs. 216.00
	iv) Construction of inter-state link roads (8.90 kms)	Rs. 60.90
	Total	Rs.4556.40

ROADS :

Intra-Urban Transport - Delhi

Delhi Transport Corporation [DTC] anticipates a modal split of 60% by the end of 7th Plan period (1989-90) and envisages fleet requirement of 9556 buses of which 60% would be of its own by that year. Further, DTC has envisaged construction of 34 additional depots, development of nodal exchange, terminals and sub-nodal terminals, addition of one workshop in each of four regional centres, construction of bus queue shelters and time-keeper booths, starting of an integrated training school for employees, construction of staff residential colonies, development of head complex, modernisation and computerisation of DTC operations and to undertake additional research and development activities driving the 7th Plan period. This would require an amount of Rs. 194.31 crores. However, the Planning Commission has agreed for a provision of Rs. 100 crores.

It is proposed that in the first phase programme, the augumentation of bus fleet, construction of additional bus depots, development of nodal exchange, terminals and sub-nodal terminals with provision of additional workshops and bus shelters may be taken up as interim plan programme for the improvement of intra-urban traffic of Delhi.

RAIL :

Development proposals in railway services have been made with a view :

i) to provide efficient rail links between DMA towns and other priority towns of NCR falling on outer grid with Delhi and also among each other.

ii) to facilitate the sub-urban traffic

iii) to provide an efficient service for intra-regional commuter traffic coming into Delhi by providing fast movment trains through electrification, dieselisation and doubling of railway tracks.

iv) to relieve Delhi railway station from bye-passable passenger and goods traffic by evolving suitable bye-pass lines in the region.

v) To relieve Delhi railway station of transhipment problems caused by the M.G. railway line from Delhi to Jaipur.

vi) To achieve co-ordination between the rail and road transport system so that they remain complementary to each other.

On the basis of the ~~strategy~~ stated above, the following proposals have been made in the NCR Plan :

i) Doubling, electrification and operation of high capacity EMU Service along Delhi-Panipat, Delhi-Ghaziabad-Meerut, Delhi-Palwal and Delhi-Rohtak corridors.

ii) Recognition of the proposed intra-urban rail system for Delhi urban area and development of four directional railway terminal in D.U.A. integrating intra-urban and inter-regional rail systems.

iii) Development of a new regional by-pass line connecting Bulandshahr-Palwal-Rewari-Jhajjar-Rohtak-Gohana and Panipat.

iv) Conversion of Delhi-Jaipur M.G. railway line into B.G. railway line.

Metropolitan Railway Transport

the MTP(R) had prepared a detailed project report on Mass Rapid Transit System based on various surveys. The Working Group set up by the Ministry of Works and Housing in 1977 to go into the details of intra-urban and inter-city transport systems of the National Capital Region had discussions and evaluated the above report and recommended that the same may be approved in principle to meet the sub-urban traffic.

The MRTP proposals envisaged improvement of line capacity, electrification and improvement of terminal capacity besides others and operation of sub-urban services. It recommended electrification and operation

of EMU services along the following radials :

i) Delhi/New Delhi-Ghaziabad-Khurja
ii) Ghaziabad-Meerut
iii) Delhi/New Delhi-Panipat
iv) New Delhi-Palwal

It also recommended services by Diesel hauled conventional coaches for Hapur-Delhi-Rohtak and Patel Nagar-Gurgaon section. It suggested that this programme may be completed in three phases by 1985. It also provided that this programme of sub-urban rail network and introduction of EMU operation would cost about Rs. 126 crores. Considering this, the Study Group-1977 recommended that this could be taken up in a phased manner and accordingly recommended a short range sub-urban rail service programme. This include rail service initially to start with electric locomotive hauling conventional starts in the lines of :

i) Delhi/New Delhi-Ghaziabad
ii) New Delhi-Ballabhgarh
iii) Delhi-Sonepat

Intra Urban Ring Railway with spurs to Shakurbasti(in West) and Tuglakabad(in the South) has since been commissioned in August, 1980 and the other segments of the scheme is inter-urban rail link between Delhi/New Delhi-Palwal and Sonepat needs to be commissioned. The project reports for electrified commuters service for Delhi-New Delhi-Sonepat, Delhi-New Delhi-Ghaziabad and New Delhi-Palwal sections are already completed and available with M.T.P. and as such need action now. Considering these things the following action plan is suggested for implementation during the interim period.

i) Immediate replacement of all passenger shuttle service by EMU in the three radials, i.e., Delhi/New Delhi-Ghaziabad, Delhi/New Delhi-Palwal and Delhi-Sonepat.

ii) Creation of new sub-urban station as proposed by M.T.P. for E.M.U. service.

iii) Commissioning of entire system on the desired frequency norms of all the three radials proposed by M.T.P.

Present ring railway is found not to connect all the major work centres in Delhi and as such, reservations were expressed about the utilisation of the action plans prepared by the ring railway. It is felt that a well knit structure of DTC route lines should be adopted to feed these stations with the work centers. It is felt that DTC should work out its future programmes in such a manner to integrate the railway services and commuters needs.

The idea that a unified transport authority in the region may help in rationalising the inter-city and intra-city, fair structures between railway, EMU and the road transport and also may help in facilitating the inter-change from rail to road and road to rail as well as from regional trains to intra-urban railway in Delhi gained appreciation and felt that there is an urgent need to go into the details of this. However, for the I-Phase programme the following programmes are identified to be taken up.

i) Development of regional by-pass.

ii) Completion of electrification along radial corridors and operation of EMU service of desired frequency (the short range programme proposed earlier by the Committee under the Chairmanship of Shri Chopra, Hon'ble Additional Member, Railway Board and agreed to be as 5th Plan programme).

iii) Development of atleast one additional terminal within the DUA.

PROPOSALS OF M.R.T.P. FOR THE INTERIM PLAN PERIOD :

1.	Delhi-Ghaziabad	This route require 2 additional tracks of which one is under construction. Running of EMU services (27 coaches, 9 MC, 18 TC) is required between Ghaziabad-Meerut section.
2.	Delhi-New Delhi-Palwal	There are 2 tracks existing which are electrified. One more tract is required. Two EMUs with one up and one down are on the rail. Running of 5 Rakes - 15 M.C., 30 T.C. required.

3.	Delhi-Sonepat	It is a double line but is not electrified Hence EMUs are not used. This requires electrification of the lines and operation of EMU services.

4. Doubling of the single line between Patel Nagar-Azadpur and provision of two stations in this line.

5. Raising of platforms, provision of F.O.Bs and accessibility including signalling installation and operation of EMU stock (4 rakes) in the Ghaziabad-Khurja corridor.

6. Doubling and electrification of Dayabasti-Azadpur section.

TELECOMMUNICATION FACILITIES IN NCR

The foremost need of the region is the adequate and effective telecommunication network which would provide impetus to the dispersal and development of economic activities away from Delhi to out-lying areas. The National Capital Regional Plan advocates a three tier system for the development of economic activities in the region as a broad policy and has also recommended development of eight towns and complexes in the region on priority basis. Provision of reliable and adequate telecommunication facilities in the Delhi Metropolitan Area and in these selected towns as input has been considered necessary for preparing a realistic plan.

The following objectives are considered desirable for provision of telecommunication facilities in the selected towns and the towns falling in DMA.

- Full automatisation of telephone services
- Replacement of all life expired exchanges and other equipments
- Provision of telephone and telex connection practically on demand
- Provision of subscribers dialling facilities between Delhi and the priority towns and DMA towns
- Connection of priority towns and DMA towns with Delhi by reliable cable and radio media

- Provision of reliable trunk services either by direct dialling facilities or through demand service among the priority towns and DMA towns
- Provision of telegraph offices as justified

An integrated telecommunication system adopted on the above lines, in a way, is also likely to supplement the transportation network in the region thereby reducing the pressure on the transportation arteries proposed in the Plan.

CHAPTER F

PHYSICAL INFRASTRUCTURE

Availability and quality of infrastructure has a direct relationship with the quality of life in any settlements. This necessitates the planned development of cities and towns in a manner that adequate infrastructure is made available to the people.

The planning of National Capital Region has necessitated improvement in the level of physical infrastructure such as water supply, power supply, sewerage, drainage, solid waste disposal etc.. Union Territory of Delhi had been receiving migrant population - besides other important factors - because of the better living conditions. Therefore, if the migration of population to the mother city of Delhi is to be reduced/checked, level of these services has to be improved substantially in the priority towns - though it may be difficult to bring them at par with Delhi.

Present Level of Services:

There are 94 urban settlements in N.C.R. as per 1981 census, of these 58 are in U.P., 27 in Haryana, 3 in Rajasthan and 6 in Union Territory of Delhi. Detailed table indicating the source of water supply, water storage, capacity alongwith system of storage, sewerage system, number and type of latrines and method of disposal of night soil for all the urban settlements of U.P., Haryana and Rajasthan sub-Region is given in Tables 1 to 3. These figures are of 1981 census but pertain to the year 1979.

An analysis of the table indicates that the level of services available in almost all the towns is very poor. For example, out of 88 urban settlements

only 11 have underground sewerage system. Even of these 11 towns ten are partly covered by underground sewerage system and partly by open surface drains - Faridabad being the only exception which is completely covered by underground sewerage system.

The method of disposal of night soil in most of the settlements is very un-hygienic and primitive such as through Head Loads (H.L.), Baskets (B), Wheel Barrows (W.B.) Septic Tank Latrines (S.T.) and Sewer (S) as a system disposal of night soil is available only in 13 towns. Even in most of these 13 towns the S.T./S. system is supplemented by B, W.B. and B. System.

For protected water supply system, 37 out of 88 settlements, do not have any water storage system. Of these 37 towns, 4 have population size of more than 20,000, 3 have population between 10,000 to 15,000, 9 have popula tion between 10,000 to 15,000 and the rest i.e. 19 settlements have population below 10,000.

From the above analysis of census data published in 1981 (pertaining to the year 1979) there is no hesitation in drawing a conclusion that physical infrastructure in most of the 88 towns is very poor. Though there may have been some improvements between the years 1979 and 1985 but it cannot be substantial enough to come to the desired levels.

Existing Deficiencies and Estimated Demands for Priority Towns:

As mentioned in the earlier parts of the report that because of limited resources, it is proposed to develop eight towns on priority basis

and these towns are Meerut, Bulandshahr and Hapur /Panipat in U.P. sub-Region, / Rewari, Rohtak and Palwal in Haryana Sub-region and Alwar in Rajasthan Sub-region.

A questionaire was designed and with the help of the Town Planning Departments of the state governments, data was collected from secondary sources for these priority towns. This data relates to infrastructural facilities such as water supply, sewerage and garbage disposal. An attempt is being made to evaluate the level of present services and assess requirements for the assigned population of 2001 for each of these priority towns.

Watter Supply:

It may be observed from Table No.1 that daily per capita water supply in priority towns varies from 30.2 litres at Rewari to 131.6 litres at Panipat. The existing available supply is much below the minimum level of 227 litres (50 gallous) per capita daily for all the towns. The table indicates existing deficiency town-wise and total deficiency of all the priority towns taken together is estimated at 1664.2 lakh litres daily. An attempt has also been made to work out additional requirements of water supply for the assigned population of these towns for year 2001. Total additional requirement in these 8 towns for 2001 is estimated at 10,200 lakh litres daily.

Sewerage System:

It may be observed from Table No.2 that underground sewerage system covers only part of each of the priority towns and Bulandshahr does not have underground sewerage at all. Sewerage is disposed of after primary treatment in the open fields except

in Rewari where it is utilised for irrigation purposes after full treatment.

To check environmental pollution it is suggested that underground sewerage facility may be extended and all the priority towns should be fully covered by this scheme. It is further suggested that the sewerage should be fully treated before it is disposed off, otherwise it will result into environmental pollution. After treatement the sewerage should be utilised for irrigation purposes, wherever possible.

The areas where regular sewerage cannot be introduced in the near future, as a stop gap arrangement, low cost sanitation by individual family should be adopted. The Local Authorities should be empowered to enforce the system while sanctioning building plans submitted by individuals.

TABLE No.1 Present Water Supply Position and Projected Demand(Additional) for 2001 in Priority Towns

Name of Towns:	Meerut	Hapur	Bulandshahr	Palwal	Rewari	Rohtak	Panipat	Alwar
Population in 1981:	536,615	102,837	103,436	47,328	51,562	166,767	137,927	145,795
Population Covered:	70%	50%	30%	75%	75%	60%	100%	N.A.
Source of Supply:								
1.Canal:	0.40%	-	-	-	-	100%	-	-
2.Tubewall:	99.60%	100%	100%	100%	100%	-	70%	100%
3.Others:	-	-	-	-	-	-	30%	-
Total supply daily (Lakh litres daily)	636.6	116.9	74.0	25.0	15.6	100.0	181.5	175
Per capita supply (Litres daily)	118.5	113.7	71.5	57.0	30.2	59.9	131.6	120.0
Present deficiency (Lakh litres daily)	581.5	116.5	160.0	82.4	102.0	278.6	131.5	210.9
Population Assigned for 2001(in Lakhs)	13.00	6.00	10.00 (Complex)	3.00	3.00 (Complex)	5.00	5.00	5.00
Total addition of requirement (lakh litres daily)	2314.4	1245.1	2136.0	656.0	665.4	1035.0	953.5	1015.0

Note: The deficienty and future requirement of water have been worked out on the basis of 50 gallons per capita daily (227 litres). Of the 50 gallons per capita daily 35 gallowns is for domestic consumption, 10 gallons commercial and 5 gallongs fire and others.

TABLE No. 2 Existing Sewerage Facilities in Priority Towns

Type:	Bulandshahar	Meerut	Hapur	Panipat	Palwal	Rewari	Rohtak	Alwar
	Open Surface Drainage	Underground + OSD	Underground (25%) + OSD(75%)	Under ground (25%) + OSD	Under ground (10%)+ OSD	Under-ground + OSD	Under-ground + Covered Drainage	NA
Type of Disposal:	Open fields	Open fields	Open fields	Open fields	Open field & Nala	Open field Bund irrigation Septic tanks	N.A.	N.A.
Treatment Given:	Primary	Primary	Primary	Primary	Untreated	Fully treated	N.A.	N.A.

Table : 3

	Name of Town	Population	System of Sewerage	No. of Latrines				Method of Disposal Night Soil	Protected Source of supply	Water Supply System of storage with capacity in ——— litres
				Water Borne	Service	Others	Total			
	1	2	3	4	5	6	7	8	9	10
1.	Bahadurgarh	37,488	SOSD	84	2350	-	2434	S,W B	T,T K	I.G. 45,500,000
2.	Beri	13490	OSD	5	30	-	35	W B	T,T W	IG-(227,500) OHT 150,150
3.	Bawal	7,760	OSD	30	100	10	140	B,W B	TW, T	OHT (60,000) BWP-NA
4.	Faridabad Complex	330,860	S	5576	8,000	-	13,676	S T, S	TW,TK	OHT (6,370,000 SR (1,37,500)
5.	Faruk Nagar	6,367	OSD	10	600	-	610	W B	T,T W	OHT (227,500)
6.	Ferozpur Jhirka	9400	OSD	50	500	5	555	W B	T, W	SR (409,500) OHT (182,000)
7.	Ganaur	16,489	OSD	-	995	2	997	WB, B	T,T W	OHT (227,500)
8.	Gohana	26,188	OSD	-	-	4500	4500	W B	T,T W	OHT (135,500)

1.	2	3	4	5	6	7	8	9	10
19.	Pataudi	8,422	OSD,PT	-	620	2	622	HL,WB	T,TW	—
20.	Rewari	51,562	S	250	6000	-	6250	WB,S	TW,T	O(2,730,000) OHT(455,000)
21.	Rohtak	166,767	SOSD	1270	28,004	-	29,274	HL,WB	T,TW	O(1,090,000,000) SR(3,458,000)
22.	Samalkha	13,352	OSD	-	-	-	-	B,WB	TW	—
23	Sohna	12,667	SOSD	290	525	-	815	WB,S	T,TW	S.R(227,500)
24.	Sonipat	109,369	SOSD	-	863	16,848	17,711	WB	T,TW	SR(435,800) OHT(173,000)
25.	Taoru	6912	OSD,PT	8	10	19	37	WB	TW	OHT(63,250) B.P(N.A).
26	Panipat	137,927	OSDS	1700	2500	-	4200	WB,B	W,TW	OHT(1,05,750) B.P (N.A)
27	Kalanaur	12,380	OSD	10	950	2	962	BB,WB	T,TW	IC(364,000) B.P(N.A)
28.	Rewinagar Sahar	6,837	OSD	-	-	-	-	B/B.W	T/T.W	OHT(1,00,000)

1	2	3	4	5	6	7	8	9 10	10
29.	Agarwal Mandi 9353	OSD	-	-	-	-	HL	T/TW	OHT (15,000)
30.	Aurangabad 11,622	OSD	-	-	-	-	B	TW/W	-
31.	Abdullapur 6383	OSD	-	8	-	8	WB	TW/W	-
32.	Anuprahar 15,193	OSD	-	-	-	-	B	TW/W	-
33.	Bhavan 6,779	OSD	-	-	-	-	B	TW/W	-
34.	Bahadurnagar Bugrari 8307	OSD	-	-	-	-	WB/B	TW/W	-
35	Bulandshahar 103,436	OSD	-	-	-	-	WB	T/TW	OHT(1,592,500)
36.	Bilaspur 4,661	OSD	-	-	-	-	B	TW/W	-
37.	Babugarh 2,389	OSD	-	-	-	-	B/WB	TW/W	-
38.	Bahsuma 7,906	OSD	-	-	-	-	WB	TW /W	-
39.	Baghpat 17,157	OSD	-	4	-	4	WB	TW/T	OHT(4,50,000)
40.	Baraut 46,292	OSD	-	5	-	5	WB	T/TW	OHT(2,50,000)
41.	Chhaprauli 13,805	OSD	-	-	-	-	WB	T/TW	OHT(22,500)
42.	Doghat 10,019	OSD	-	-	-	-	B/WB	TW/W	-

1	2	3	4	5	6	7	8	9	10
43.	Daurala	9,146	OSD	-	-	-	-	HL	TW/W	-
44.	Dadri	19,723	OSD	-	3	-	3	B/WB	TW/W	-
45.	Dankaur	7,935	OSD	-	-	-	-	WB/B	TW/W	-
46.	Chhatari	5,862	OSD	-	-	-	-	WB/B	TW/W	-
47.	Debai	22,430	OSD	-	-	-	-	WB	T/TW	OHT(227,500)
48.	Gulaothi	24,416	OSD	-	-	-	-	B	TW/W	-
49.	Garhmu-kteshwar	17,914	OSD	-	8	-	8	WB/ST	TW/T	OHT(280,000)
50.	Faridnagar	9,116	OSD	-	-	-	-	B	TW/W	-
51.	Hapur	102,337	OSD	-	4	-	4	WB/ST	T/TW	OHT(75,000)
52.	Ghaziabad	287,170	S/OSD	33	85	-	118	WB/S	T/TW	OHT(11,442,500)
53.	Hastinapur	11,637	OSD	-	-	-	-	B/HL WB	T/TW	OHT(182,000)
54.	Khekra	2,691	OSD	-	-	-	-	HL	T/TW	OHT(50,000)
55.	Karnawal	9,895	OSD	-	-	-	-	HL	TW/W	-
56.	Kakod	4,299	OSD	-	-	-	-	B	TW/W	-
57.	Khurja	67,119	OSD	1	3	-	4	WB	TW/T	OHT(1,474,200)
58.	Jewar	15,275	OSD	-	-	-	-	WB/B	TW/W	-
59.	Jahangirpur	6,447	OSD	-	-	-	-	B	TW/W	-
60	Jahangira-bad	29,301	OSD	-	4	-	4	WB	TW/W	-

1	2	3	4	5	6	7	8	9	10
61.	Khanpur	8,311	OSD	-	-	-	-	B	TW/T	-
62.	Nar.ra	9,573	OSD	-	-	-	-	HL	T.I/W	-
63.	Niwadi	7,078	PT/OSD	-	-	-	-	WB/ST	T/TW	OHT(180,000)
64.	Loni	10,259	OSD	-	-	-	-	HL/WN	T/TW	OHT(132,000)
65.	Kithaur	13,791	OSD	-	-	-	-	WB	TW/W	-
66.	Muradnagar	26,042	OSD	-	-	-	-	B/WB	TW/T	OHT(341,250)
67.	Modinagar	87,665	OSD/PT	-	20	-	20	B/WB ST	TW/W	OHT(1,27,000)
68.	Meerut	536,615	OSD	40	24	-	64	HL/WB	TW/W T/-	OHT(144,380,000)
69.	Mawana	37,620	OSD	-	4	-	4	WB	TW/W	OHT(N.A)
70.	Lawar	11,535	OSD	-	-	-	-	HL	TW/W	-
71.	Sardhana	30,138	OSD	-	-	-	-	WB	TW/W	OHT(250,000)
72.	Parikshitgarh	11,328	OSD	-	-	-	-	HL	TW/W	-
73.	Phalauda	10,357	OSD	-	-	-	-	HL	TW/W	-
74.	Shahjahan-pur	8,387	OSD	-	-	-	-	HL	TW/W	-

1	2	3	4	5	6	7	8	9	10
75.	Sewalkhar	10,278	OSD	-	-	-	-	HL	TW/W	-
76.	Ordinance Factory Muradnagar	13,147	Not Available							
77.	Patala	7,847	OSD	-	-	-	-	WB/ST	T/TW	-
78.	Pilkhua	37,384	OSD	4	7	-	11	B/WB	W/TW	OHT(227,500)
79.	Sikandra-bad	43,135	OSD	-	-	-	-	WB	TW/W	OHT(1250,000)
80.	Siana	22,410	OSD	-	-	-	-	WB	TW/W	-
81.	Shikarpur	21,499	OSD	-	-	-	-	WB	TW/W	-
82.	Pahasu	9,016	OSD	-	-	-	-	WB	T/TW	-
83.	Rabupura	8,999	OSD	-	-	-	-	HL	T/TW	OHT(341,250)
84.	Tikri	11,315	OSD	-	-	-	-	B	TW/W	-
85.	Khanoda	8,708	OSD	-	-	-	-	WB	T/TW	OHT(2,00,000)
86.	Alwar	1,45,795	OSD	N.A	N.A	N.A.	-	WB/ST	TW/W	SR(22,45,000)
87.	Khairtal	15,962	OSD	100	77	8	185	WB/B	W	OHT(225,000)
88.	Tijara	12,199	OSD	55	4	4	63	WB	TW/W	SR(450,000)

1	2	3	4	5	6	7	8	9	10
9.	Gurgaon U.A	100,877	SOSD	3310	10,422	13732	W B,S,	WB,S H.L.	T,TW	SR (1592,500) OH (1,214,850) B.P (N.A)
10	Hailey-Mandi	10,140	SOSD	28	320	-	348	WB,S	T,TW	B.P (N.A)
11.	Hassanpur	5109	OSD	-	1200	-	1200	W.B	T,TW	—
12.	Hathin	6553	OSD	-	100	-	100	WB	W,TW	—
13	Hodal	18,740	OSD PT	31	360	-	391	WB	W,TW	SR (796,250) B.P (N.A).
14.	Jhajjar	24247	SOSD	-	4050	-	4050	WB,B	T,TW	OHT (136,500) B.P (N.A)
15.	Jharsa	8412	-	-	45	-	45	H L	T,TW	BPH (N.A)
16.	Maham	11,722	OSD	-	1500	500	2000	WB	T	PT(10,269,350) SR(182,000)
17.	Nuh	5992	OSD	25	350	2	377	B	TW,TK	SR (409,500) OHT (136,500)
18.	Palwal	47,328	OSD,PT.	-	4000	500	4500	WB,B	TW,TK	SR (2,275,000) OHT (245,700)

S	=	Sewer
OSD	=	Open Surface Drains
Pt	=	Pit System

HL	=	Head Load
B	=	Baskets
WB	=	Wheel Barrows
ST	=	Septic Tank Latrines
S-	=	Sewerage

TW	=	Tubbe-well Water/ Handpumps
T	=	Tapwater
W	=	Well water
TK	=	Tank Water
OHT	=	Overhead Tank
SR	=	Service Reservoir
IG	=	River Infltration Gallery
B.P	=	Borewell Pumping System
PT	=	Pressure Tank
O	=	Others

CHAPTER F

POWER DEVELOPMENT

Electricity, one of the most important forms of energy, is the life-blood of modern society. It is indispensable for the development of industry and agriculture and for improving the living standards of the people.

Generation

The Region falls within the Northern Power Zone which is supplied power through the grid system. The power requirement of Delhi is met mainly by the Rajghat and I.P. Estate power-generating stations owned by the Delhi Electricity Supply Undertaking and Badarpur Thermal Station owned by the National Thermal Power Corporation. All these stations are located within Delhi. In addition to these three stations, Delhi receives assistance from Baira Siul Hydro Electric Power Station, Singrauli Thermal Power Station and from the Northern region grid including the Bhakra Beas Management Board system, to meet its demand for power.

The U.P. Sub-region receives power from the integrated grid of the U.P. Power System and the Northern Region Grid. It may be noted that all the hydel and thermal power stations in U.P. are inter-connected with each other and the system runs as an integrated grid. Further, the U.P. Power System is being operated in synchronism with Northern Region Grid comprising Jammu & Kashmir, Punjab, Himachal Pradesh, Haryana, Delhi Rajasthan and part of Madhya Pradesh. Haryana, in addition to receiving power from its own generating

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stations, receives power from Bhakra Beas Management Board system; Pong, Dehar and Baira-Siul hydel stations and Indraprastha (Delhi), Badarpur (Delhi) and Singrauli (U.P.) thermal stations to meet its demand. It is, thus, clear that the Haryana Sub-region receives power from various sources.

Rajasthan's power demand is met by the generating stations owned by the Rajasthan Electricity Board and power made available from the BBMB System, Singrauli super thermal system and power imported from the neighbouring states. The Rajasthan Sub-region, which forms part of the State, has, therefore, to depend on many sources to meet its power demand.

The Region does not have any power resources within its boundary. However, it does have some generating-stations. As per the statistics made available by the constituent States/U.T., there are five power-generating schemes within the Region with a total installed capacity of 1431.5 MW. All these schemes are thermal (Table 1) [illegible]. The U.P. and Rajasthan Sub-regions do not have any generating station.

Five schemes with a total installed capacity of 1215.3 MW are under construction in the Region. Among these; one is atomic, two are thermal, one is hydel and one is gas-based. All the schemes are expected to be completed by the end of 1988, that is before the end of the Seventh Plan. Hence, by the end of the Seventh Plan, the

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National Capital Region
(As on 31.3.85)

Name of Scheme	Location (Taluk only)	Type	Units Rated* capacity(MW)	Total ins-talled Capacity(MW)	Probable date of commissioning, if not already commissioned
1	2	3	4	5	6
I.Existing					
1.Rajghat	Delhi	Thermal	1 x 14	14.0	
2. I.P.Estate	Delhi	Thermal	1 x 35 + 3 x 62.5 + 1 x 60	282.5*	
3. Badarpur	Delhi	Thermal	3 x 100 + 2 x 210	720.0	
4.Panipat-Stage-1	Panipat	Thermal	2 x 110	220.0	
5. Faridabad	Ballabh-garh	Thermal	1 x 15 + 3 x 60	195.0	
Sub total				1431.5	
II. Under Construction					
1.Rajghat	Delhi	Thermal	2 x 67.5	135.0	1st Unit - May 88 2nd Unit - Sep.88
2. Gas Turbine Scheme near I.P.Stn. (I.P.Estate)	Delhi	Gas	6 x 30	180.0	1st Unit to be commissioned in April 86 and one unit per month thereafter.
3.Panipat - Units 3,4,5 States II & III	Panipat	Thermal	2 x 110 + 1 x 210	430.0	Unit 3 - Oct.85 Unit 4 - Aug.85 Unit 5 - Dec.87
4.Kokroj	Sonepat	Hydel	3 x 1	0.3	1986-87
5. Narora	Anup-shahr	Atomic	2 x 235	470.0	I Unit - Dec.87 II Unit - Dec.88
Sub total :				1215.3	
III.Proposed in the Seventh Plan					
1.Muradnagar	Ghazia-bad	Thermal	4 x 210	840.0	1st - 1992-93 2nd - 1993-94 3rd & 4th-1994-95
Sub total :				840.0	
GRAND TOTAL :				3486.8	

* Includes share of Haryana of 62.5 MW

Source : (1) Data obtained from the State/UT governments.
(2) Central Electricity Authority

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total installed capacity, including that of the existing schemes, would increase to 2646.8 MW. Among the schemes that are under construction, Kokroi is the only hydel scheme and that too with an installed capacity of only 0.3 MW. No doubt, the Region does not have any hydel potential. The Narora atomic project is the biggest among the projects that are under construction.

Among the Seventh Plan proposals relating to generation schemes, only one fall in the Region, - the Muradnagar thermal scheme. This scheme falls in the Central sector and would be executed by the National Thermal Power Corporation. As per the information received from the Central Electricity Authority, the Muradnagar scheme would have four units of 210 MW each. Thus the total installed capacity of the scheme would be 810 MW. The first and the second units are expected to be commissioned by the end of 1994 and the remaining units by the end of 1995. Thus all the units are proposed to be commissioned by the end of the Eighth Plan. The Muradnagar scheme has been proposed to meet the growing demand for power of Delhi. As per the present indications, the scheme is meant for Delhi alone. However, if any surplus is left after meeting the demand of Delhi, it would be fed into the Northern grid.

Assuming that the Muradnagar scheme would materialise and would be completed by the end of the Eighth Plan, the total installed capacity (including the existing and under-construction) in the Region would increase to about 3500 MW.

Transmission and Distribution

The Region has network of 400 KV, 220 KV, 132 KV, 66 KV, 33 KV and 11 KV and low tension lines for

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Table :- 2 Rural Electification Land Energisation of Pumpsets - As on 31.3. 1985.

Area	Total No. of Inhabited Villages	Villages Electrified As on 31.3.85	Villages Proposed to be Electrified During VII Plan	Villages to be Electrified by the End of VII Plan	Pumpsets Energised As on 31.3.85	Pumpsets Proposed to be Energised During VII Plan	Pumpsets to be Energised by the end of VII Plan
2	3	4	5	6	7	8	9
elhi U.T.	214	214 (100.0)	Nil	214 (100.0)	15732	2500	18232
.P Sub-region							
. Meerut Distt.	1045 *	1045	Nil	1045	37715	4882	42597
. Ghaziabad Distt.	791 *	711	78	789	7109	3388	10497
. Bulandshahr Distt.	1467 *	1364	103	1467	36298	7195	43493
ub-total (II)	3303	3120 (94.4)	181	3301 (99.9)	81122	15465	96537
aryana Sub-region							
. Sonapat District	331	331	Nil	331	11584	2000	13584
. Gurgaon District	673	673	Nil	673	25185	2000	27185
. Faridabad Distt	425	425	Nil	425	15510	1000	16510
. Rohtak District	438	438	Nil	438	11054	3000	14054
Panipat Tehsil	167	167	Nil	167	N.A	N.A.	N.A
Rewari and Baval Tehsils	352	352	Nil	352	N.A.	N.A.	N.A.
Sub-total(III)	2386	2386 (100.0)	Nil	2386 (100.0)	63333	8000	71333

2	3	4	5	6	7	8	9
sthan Sub-on							
, Behror, war, ngarh, a and rh Tehsils	1063	856 (80.5)	N.A.	**856**	N.A	N.A	N.A.
Total	6966	6576 (94.4)	181	**6757** (96.9)	160187	25965	186152

* Includes uninhabited villages

Note: Figures in brackets indicate percentage to the total number of villages in the respective sub-region/region.

carrying power to the loadcentres from the generating stations.

Rural Electrification

Electrification of villages is indispensable for improving the living standards of rural people. Emergisation of pumpsets goes a long way in increasing agricultural production. In the Region as a whole, about 94% of the villages are electrified (Table 2). All the villages in the Union Territory of Delhi and in Haryana Sub-region are electrified. The position of rural electrification is quite unsatisfactory in the Rajasthan Sub-region. In the Rajasthan Sub region only about 80.5% of the villages had been provided with electricity till the end of March '85. As far as the U.P. Sub region is concerned, all the villages in Meerut district are electrified. In Ghaziabad district, 10% of the villages are yet to be electrified and in Bulandshahr district 7% of the villages remain to be electfified. The overall percentage of rural electrification for the U.P. Sub-region works out to about 94%. The position is therefore, better than that of the Rajasthan Sub-region.

During the Seventh Plan period, all the un-electrified villages in Bulandshahr district are expected to be electfified. In Ghaziabad district, all unelectrified villages except two, are proposed to be electrified during the Seventh Plan period. As far as the Rajasthan Sub-region is concerned, the number of villages proposed to be electrified during the Seventh Plan period is not known.

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About 1.6 lakh pump sets have been energised in the Region so far (as on 31.3.85). The figure is expected to reach 1.8 lakhs by the end of the Seventh Plan. It may, however, be noted here that Panipat, Rewari, Bawal tehsils of Haryana and the whole of Rajasthan Sub-Region have not been taken into account as figures pertaining to these areas are not available (Table 2).

Energy Consumption (Aggregate)

During 1984-85, the total energy consumption in the Region was about 5045 million units. A A look at the pattern of energy consumption (Table 3) shows that industrial sector accounted for the highest proportion (about 33%) and was followed by the domestic sector (about 25%).

Analysing the position of individual Sub-regions, it is seen that in Rajasthan Sub-region, the proportion of industrial consumption is very high (79%). In Haryana Sub-region, industrial sector ranks first in terms of energy consumption, but the proportion is not very high. Agriculture sector occupies first place in the UP Sub-region. In the case of Union Territory of Delhi, domestic sector accounts for the highest proportion of energy consumption. Since commercial activities dominate as much as industrial activities in Delhi's economy, the proportion of energy consumption in the commercial sector is much higher in Delhi than in other Sub-regions. In none of the Sub-regions of U.P., Haryana and Rajasthan, the proportion of energy consumption in the commercial sector exceeds 5%, whereas in Delhi, the proportion is about 21%.

The pattern of consumption clearly indicates high concentration of industries in the U.T.of Delhi, Faridabad district and Rajasthan Sub-region (Alwar distt.)

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Table : - 3 Energy Consumption in the NCR - 1984-85

(Figures in million units)

o. Area	Domestic	Commercial	Industrial	Agriculture	Others	Total
Delhi U.T.	1090.00	752.00	941.00	22.00	745.00	3550.00
Sub- total (I)	1090.00 (30.7)	752.00 (21.2)	941.00 (26.5)	22.00 (0.6)	745.00 (21.0)	3550.00 (100.00)
U.P. Sub-region						
1. Meerut District	11.23	3.75	12.35	25.77	0.86	53.96
2. Ghaziabad Distt	7.95	2.95	38.99	14.84	1.39	66.12
3. Bulandshahr Distt	2.97	0.23	4.66	27.44	0.16	35.46
Sub-total (II)	22.15 (14.2)	6.93 (4.4)	56.00 (36.0)	68.05 (43.8)	2.41 (1.6)	155.54 (100.0)
Haryana Sub-region						
1. Sonepat District	21.19	3.55	72.54	39.68	1.40	138.36
2. Gurgaon District	19.34	4.76	41.83	47.71	4.85	118.49
3. Faridabad Distt	46.82	12.88	245.34	54.83	8.69	368.56
4. Rohtak District	38.90	9.36	57.90	51.71	3.81	161.68
5. Panipat Tehsil	26.09	6.19	25.94	158.04	2.30	218.56
6. Rewari and Bawal Tehsils	8.49	1.87	8.25	22.28	3.57	44.46
Sub-total (III)	160.83 (15.3)	38.61 (3.7)	451.80 (43.0)	374.25 (35.6)	24.62 (2.4)	10 (

IV Rajasthan Sub-region*						
1. Alwar, Behror, Mandawar, Kishangarh, Tijara and Ramgarh Tehsils	12.43	6.78	227.79	22.85	18.71	288.56
Sub-Total (IV)	12.43 (4.3)	6.78 (2.3)	227.79 (79.0)	22.85 (7.9)	18.71 (6.5)	288.56 (100.0)
Grand Total (I+II+III+IV)	1285.41 (25.5)	804.32 (15.9)	1676.59 (33.2)	427.15 (9.7)	790.74 (15.7)	5044.21 (100.0)

* In case of Rajasthan Sub-region, since tehsilwise figures were not available consumption has been estimated distrwise figures. It has been assumed that in case of agriculture, the Sub-region's consumption is about 60% of the district's consumption. In case of others, it has been taken as 90%. This is because percentage of rural population of the Sub-region is about 60% of the district's rural population and the sub-region's urban population constitutes about 90% of the urban population of the district.

Note:- Figures in brackets indicate percentage to the respective total.

Per Capita Energy Consumption

Per capita energy consumption is a good indicator of economic development. In the Region as a whole, the per capita energy (aggregate) consumption was 263 units in 1984-85. The per capita industrial consumption was only 87 units (Table 4).

A look at Table 4 shows that per capita aggregate consumption is alarmingly low (only 22 units) in the UP Sub-region, which indicates that this Sub-region is highly backward in the Region. The per capita consumption in the UP Sub-region is not even one-tenth of that of Delhi. The poisition of Haryana and Rajasthan Sub-regions are much better than that of UP Sub-region. However, these Sub-regions are also much behind Delhi. In case of Delhi, the high per capita energy consumption can be attributed to two reasons. Firstly, it has a satisfactory power supply position and secondly, it is economically much developed than other areas of the Region.

Looking at the per capita industrial consumption, it is observed that Rajasthan Sub-region ranks first and is followed by Delhi. As far as UP Sub-region is concerned, it not only occupies the last position, but its per capita is also very low-only 8 units. In case of Haryana also, the per capita is much lower than that of Delhi. This is perhaps because of inadequacy of power supply in Haryana.

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Table :- 4 Per Capita Consumption of Electricity in the N.C.R. - 1984-85

(Unit : Kwh)

Sl.No.	Sub-region	Per Capita Consumption (Total)	Per Capita Consumption (Industrial)
I	Delhi	571	151
II	U.P.	22	8
III	Haryana	213	91
IV	Rajasthan	271	214
	N.C.R.	263	87

Note: Per capita has been worked out on the basis of 1981 census population.

Power Supply Position

Delhi is definitely better placed as far as power supply is concerned. This has been one of the factors that attracted entrepreneurs to set up business in Delhi. As far as other Sub-regions are concerned, the power supply position is highly unsatisfactory in Haryana. This is evident from the following statement which gives power supply position in various States/UT, parts of whose areas fall in the Region.

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Power Supply Position During April '85-March '86
(Figures in million units)

State/UT	Requirement	Availability	Shortage	% age
1.Haryana	5507	4223	1284	23.3
2.Rajasthan	7100	6573	527	7.4
3.U.P.	17633	15477	2156	12.2
4. Delhi	4880	4869	11	0.2

Source: Central Electricity Authority

It may be seen from the figures given above that the position of UP and Rajasthan also was not satisfactory.

During 1984-85, the power supply position in Haryana, Rajasthan and UP was worse than what it was during last year (1985-86). The energy shortage (percentage) (monthwise) during 1984-85 can be seen in Table 5. Haryana experienced an average daily shortage of about 28% during 1984-85 and was followed by Uttar Pradesh which faced an average daily shortage of about 26%. Rajasthan's position was better as it faced an average daily shortage of only about 14%. Delhi had practically no shortage during 1984-85.

Looking at the monthwise position, one observes that Haryana, Rajasthan and U.P. faced shortage throughout the year. At no time of the year, the shortage was less than 20% in Uttar Pradesh. The shortage in U.P. ranged from about 22% in September 1984 to 34% in March, '85. The position of Haryana is more or less similar to that of Uttar Pradesh. Only in two months, i.e.June and July, '84, the shortage was less than 20% in Haryana. In fact, the position of Haryana is worse than that of Uttar Pradesh as it faced a shortage of atleast 35% in four months (December 84 - March '85) during 1984-85.

contd...

The position of Rajasthan is definitely much better than that of Haryana and Uttar Pradesh. Though Rajasthan faced shortages throughout the year, the extent of shortage has been quite less

Table :- 5 Percentage of energy shortage (average daily shortage) during 1984-85.

Month/Year	Haryana	U.P.	Rajasthan	Delhi
April '84	28.0	23.0	29.0	0.1
May '84	25.7	28.0	17.7	0.3
June '84	14.0	23.1	6.9	0.7
July '84	15.3	24.0	2.9	0.5
August '84	27.1	23.9	6.4	0.1
Sep. '84	23.9	22.3	1.8	0.1
Oct. '84	29.4	24.1	6.3	0.2
Nov. '84	23.9	25.7	14.7	0.1
Dec. '84	34.9	23.2	21.8	Nil
Jan. '85	39.5	26.6	19.0	0.8
Feb. '85	38.4	28.5	22.2	0.1
March '85	35.8	34.0	13.3	Nil
1984-85	28.2	25.8	14.3	Nil

Source: Annual Administration Report (1984-85) of Northern Regional Electricity Board.

(less than 10%) during June, '84 to October, '84. Further the shortage never reached 30% in any of the months during 1984-85. The maximum shortage was about 29% which was experienced in April '84.

Delhi faced only a negligible shortage throughout the year. In fact, the shortage was recorded as 'nil' during December, '84 and March, '85. The overall percentage for the year was also recorded as 'nil'.

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Proposals Submitted by the State Governments

From the proposals submitted by the State Governments of Haryana, U.P. and Rajasthan, it is observed that a total of Rs.684 crores would be required in the Seventh Plan to improve the quality of power supply in the Region. The statewise break-up is as follows.

Figures in Rs.crores

State	Amount required for		Total
	Generation	Transmission & Distribution lines and Sub-stations.	
1.Haryana	420.00	85.00	505.00
2.Rajasthan	-	23.00	23.00
3.U.P.	-	156.00	156.00
	420.00	264.00	684.00

Haryana Govt. has indicated that the present peak demand in the NCR portion of Haryana is 200 MW and this would increase to 650 MW by 1989-90. To meet this demand, an installed capacity of 1000 MW would be needed. It has, therefore, been suggested by Haryana Govt. that 2 units of 210 MW each should be added at the Panipat Thermal Complex or should be installed at a new site near Gurgaon. They have indicated that this would cost about Rs.420 crores. As far as UP and Rajasthan Sub-regions are concerned, the State Governments have not submitted any proposal relating to generation schemes.

It may be noted that as far as laying of transmission and distribution lines and construction of Sub-stations are concerned, the amount required for the U.P. Sub-region is in addition to what would

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be available from the State's normal plan. As far as other Sub-regions are concerned, it seems from the proposals submitted by the concerned State Governments that the amount indicates the total requirement. Broad details of the transmission and distribution lines and Sub-stations proposed by the State Governments are given below.

I. Haryana

Sl.No.	Item	Amount (Rs.crores)
1.	220 KV works including Sub-stations and lines	30.00
2.	132 KV works including Sub-stations and lines	18.00
3.	66 KV works including Sub-stations and lines	28.00
4.	33 KV works including Sub-stations and lines	9.00
	Total	Rs. 85.00 crores

II. Uttar Pradesh

Sl.No.	Item	Amount (Rs.crores)
1.	220 KV works	
	i) Sub-station	16.50
	ii) Lines	3.80
2.	132 KV works	
	i) Sub-station	14.25
	ii) Lines	6.85
3.	33 KV works	
	i) Sub-station	16.70
	ii) Increasing Capacity	3.82
	iii) Lines	7.80
	iv) Misc.	5.26
4.	11 KV works	
	i) Sub-station	8.02
	ii) Lines	14.09
	iii) L.T. Lines	23.99

contd...

5.	Tools and Plants	2.69
6.	Spares	5.00
7.	Communication	1.35
8.	Establishment, Cost of Building, Contingency and other charges.	25.90
	Total	156.02

3. Rajasthan

The following works have been proposed. The schemewise cost has not been indicated by the State Government.

1. 132 KV line form Alwar to Shahjahanpur via Khairthal and Mandawar with the following 132 KV Sub-stations.

i) 132/33 KV Sub-station at Khairthal
ii) 132/33 KV Sub-station at Mandawar
iii) 132/33 KV Sub-station at Shahjahanpur

2. 132/33 KV Sub-station at Malakhera by looping in and looping out 132 KV line from Alwar to Rajgarh

3. 33 KV line from Shahjahanpur to Mandhan.

4. 33 KV line from Mandawar to Sodawas

5. 33 KV inter-connections to 33/11 KV Sub-stations - Shahjahanpur, Mandawar, Khairthal and Malakhera.

6. 220 KV line from Alwar to the proposed gas-based Thermal Power Station at Sawai Madhopur (already taken up in central sector) via Dausa and strengthening its links with the northern regional grid 220 KV line from Panipat to Alwar.

TOWN PROFILES

MEERUT

Meerut Urban Agglomeration, which comprises of Meerut Municipal Board, Meerut Cantonment, Kanker Kheda and Baksar Kheda, is the largest town in the National Capital Region , only next to Delhi.

It is situated at 28° 59° lattitude and 77° 42° longitude, at a distance of 66 km from Delhi. It is well connected to the National Capital and to other urban centres of UP and Haryana particularly by road and by rail to a lesser extent.

Topographically Meerut is on the gangetic Plain, with virtually no undulation. Its temperature vary from a maximum of 45° to a minimum of 0.40°. The rainfall recorded in this area average to 814.o mili metres area.

Area:

Meerut urban agglomeration extends to an area of 80.82 sq. km through 90% of this area constitutes the Meerut Municipal board (37.03 sq km) and Meerut Cantt (35.69 sq. km). The area of Kankar Kheda and Baksar Kheda within the Urban agglomeration are 3.77 sq. km and 4.33 sq. km respectively.

Population:

2. Meerut urban agglomeration registered a population of 5,36,615 person in 1981. While the population within the Municipal limits was 4,17,39 contained in an area of 37.03 sq. km the population of Meerut Cantt was 84,210 sq. km in an area of 35.69 sq.kms indicating high proportion. There is disparity in density within the urban agglomeration area. Table No. 1 gives the population of Meerut Urban agglomeration as recorded by the census in 1981.

The trends in population growth in Meerut Urban agglomeration indicate a consistant increase between 1921 and 1951. In the decade 1951-61 there is a fall in growth rate from 27.40% in 1941-51 to 17.87% in 1951-61 period. But again in the decades subsequent until 1981 there is a consistant increase, recording higher growth rate of 31.46% in last 82 years.

The growth rate in Meerut Municipal Board area however has been 35.7% in 1971-81 as compared to 26.01% in 1961-71 which is higher than that of the urban agglomeration area. The following table gives the Growth rates of population in Meerut Urban Agglomeration:

-2-

Table:1 Area, Houses, Households, Population & Literacy in Meerut Urban Agglomeration

	Meerut (U.A.)	Meerut M.B	Meerut Cantt	Kanker Khoda (T.A)	Baksar Khoda (T.A)
Area (in sq.km)	80.82	37.03	85.69	3.77	4.33
Occupied Residential Houses	1,01,222	70,400	26,004	4,198	620
No. of House hold	1,01,584	70,741	26,010	4,208	625
Persons	5,36,615	417,395	94,210	20,716	4294
Males	2,90,370	2,22,961	54,967	10,187	2,225
Females	2,46,245	1,94,434	39,243	10,529	2,039
Literates	2,96,900	1,96,297	58,603	13,489	1,411
Males	1,69,664	1,21,785	38,601	8,352	926

Table: 2 Growth of Population in Meerut Urban Agglomeration Between 1901 and 1981.

Year	Meerut City U.A (Persons)	(%)	Meerut M.B (Persons)	(%)	Meerut Cantt (Persons)	(%)	Others Persons	(%)
1901	1,18,539	0.0	1,18,539	0.0	-	-	-	-
1911	1,16,631	-1.63	1,16,631	-1.63	-	-	-	-
1921	1,22,609	+4.8	1,22,609	+4.8	45,528	-	-	-
1931	1.36,709	+10.31	91,181	-34.4	45,528	-	-	-
1941	1,69,290	+19.24	1,17,182	+22.18	52,108	-	-	-
1951	2,33,183	+27,40	1,58,407	+26.02	74,776	-	-	-
1961	2,83,997	18.87	2,00,470	+20.98	75,334	-	8193 Malyana	
1971	3,67,754	22.77	2,70,993	+26.0	85,415	-	11346 Kanker Kheda	
1981	5,36,615	31.46	4,17,395	+35.07	94,210		25,010 Bakdarkhela	

various industrial category and non-workers. ... constitute 28.25% of the total U.A Population. Of the total workers, 86.49% of them are concentrated in other workers cate-gory.

	Meerut U.A	Meerut M.B	Meerut cantt	Kenker khede (T.A)	Bakaar khede(T.A)
Total main workers	151655	110729	34073	5747	1100
...ons a % to total population	28.26%				
Males	144500	105307	32696	5444	1053
Females	7155	5422	1377	303	53
Cultivators:- Persons	2658	2324	129	182	23
% to total main workers	1.75%				
Males	2585	2257	123	182	23
Females	73	67	6	0	-
Agricultural Lab: Persons	3686	3339	89	115	143
% to total main workers	2,43%				
Males	3307	2996	84	93	134
Females	379	343	5	22	9
Household industry,(Va) Manufacturing, Processing, Servicing & repairs	14136	13075	734	303	24
% to total main workers	9.32%				
Males	13300	12300	691	288	21
Females	836	775	43	15	3
Other Workers: Persons					
III,IV,Vb VI to IX	131175	91991	33121	5147	916
% to total main workers	86.49%				
Males	125308	87754	31798	4881	875
Females	5867	4237	1323	266	41
...rginal Workers:					
Persons	334	309	34	9	2
...les	241	249	27	5	-
Females	103	90	7	4	2
Non-Workers:					
Persons	334576	306327	30103	14960	3136
% to total population	71.66%				
...les	145529	117405	22244	4733	1202
Females	239937	189922	37359	10227	1934
Participation Proportion	29.33				

3. Trade functions:- Meerut has a thriving market. Essentially its excellent infrastructure, has promoted its status in trade. The annual value of the Total turnover from both wolesale and retail trade is to the tune of Rs.43,18,00 000. In the wholsale trade, farm products account for large proportion of followed by / shop building material and textile shops. Among retail trade, as typical of any large town, the largest no. of shops are of General merchandise followed by food items and restaurants.

4. There is a Mandi Samithi (esteblished in 1967) in the town which maintains a regulated market where all the agricultural commodities produced in Meerut's hinterland is marketed. The major products handled here are foodgrains, pulses, rice, Gur and Khanda Sari. The annual arrivals in 1983-84 amounted to 11,88,354 quiantals valued at Rs.25,08,19088. (say Rs.25 crores).

5. Credit Institutions: There are a total of 59 banks in Meerut UA. Besides there are 48 non-agricultural credit societies and 3 Agricultrual Society.

6. Utilities & Services

(i) Water Supply: The source of water as in most of U.P towns is the tube wells and wells, water is supplied by the Municipal board and is pumped and stored in the overhead tanks with total storage capacity of 13,870,000 liters while Meerut Cant has an OHT with a

Table:6

Trade, Commerce, Industry & Banking

Import	Baksar Kheda	Kankar Kheda	Meerut M.B	Meerut Cantt
Name of 3 important Commodities				
Imported	Sugar	Cloth	Sugar-cane	Coal
	Mustard Oil	Kerosene	Cotton	Cloth
	Food grains	Food grains	Vegetable oils	Iron ore
Export				
Name of 3 major commodities				
Exported	Vegetables	Wine	Sugar	Steel Utensils
	Wheat	Potatoes	Hand-loom	Iron Furniture
	Bats, Shuttle-cock	Vegetable	Sports goods	Sports goods
Names of 3 Important Commodities				
Manufactured	Bats, Shuttlecock	Wine	Sugar	Steel Utensil
	-	-	Handloom cloth	Iron Furniture
	-	-	Sports goods	Sports goods

storage capacity of 5,68,000. Per capita water consumption in Meerut works out to 0.225 K.L/day. The present consumption of water reported by the Municipal board is to the tune of 59310.KL/day. Following table gives the quantity of water used under various uses.

Table:7

Type of uses	Quantity (in K.L)
House connections	29655 K.L
Public Taps	11862 "
Others	17793 "
Total	59310 K.L

ii) Drainage and Sewrage: Most of the drainage in the town are open drains, while there are also a few covered drains. The length of drains in the town works out to 37.6 kms. There is no sewrage treatment plants hence the untreated wastes are disposed into water course and on land.

iii) Electric Supply:-

Table:8 Following table gives the Nos. of Electric Connections in Meerut U.A. under various heads.

Classified use	No. of Connection				
	Meerut U.A	Baksar Kheda	Kankar Kheda	Meerut M.B	Meerut Cant
Domestic	42,312	19	650	34,838	6805
Industries	1541	-	10	1531	-
Commercial	6639	5	124	6352	158
Road Lighting	8643	12	205	4926	3500
Others	-	-	-	-	-
Total					

iv) Health Services:- Meerut has fairly good medical services but a lot of demand for these services comes from the district's rural areas. Besides the large number of Govt. hospitals dispensaries and maternity centres, facilities for treatment are also available in private nursing homes. Meerut has 13 Govt. hospitals with a total capacity of 1373 beds and 93 doctors to attend, besides 278 maternity/child welfare centres and 21 dispensaries. The town also house a 'leper home' with 40 beds capacity.

v) Education: Meerut is an important educational centre in the region. It provides facilities for higher education. The town has one medical college and

7 degree colleges of arts, science and commerce. There are a total of 36 junior colleges in the Urban agglomeration area.

vi) Entertainment & Recreational facilities:-

Cinema is a major source of entertainment in Meerut. There are 22 cinema halls catering to a population of 5.36 lakh persons. The town also has 14 botanical parks, 3 auditoriums and 5 public libraries.

H A P U R T O W N

Hapur is located at a distance of 57 kms from Delhi Metropolis on National highway No.24. It is the main commercial centre for the surrounding areas and tehsil headquarter for administrative purposes. This town is the centre for grain storage, training and research work. Hapur grain mandi has a name in the entire northern India and in fact commodity rates prevailing at Hapur have a greater bearing on Trade. Hapur is the second largest town in Ghaziabad district and third in the U.P. sub-region of N.C.R. Being situated at busy transport routes, this town is also developing as a transport centre.

2. Demographic Characteristics:- Although historically this town has been famous for its commercial and trading activities, the growth in its population has been slower than the other towns of U.P. Sub-Region. Following table indicates the population growth during last three decades :

Table : Growth of population during last three decades:

Year	Population	Growth
1961	55,248	12.16
1971	71,266	28.99
1981	102,837	44.30

Source : Census of India

Density of population in the town has been increased from 9,476 persons per sq. km. in 1961 to 17,639 persons per sq. km. in the year 1981.

3. Literacy:- Literacy rate of the town has increased from 40.45% in 1971 to 48.16% in 1981.

4. Working Force:- Working force participation rate has increased marginally from 25.43% in 1971 to 25.85% in the year 1981. Both male and female participation rates have also increased over the last decade. Following table shows total,

Cont..2/-

male and female participation rate for the last two decades.

Table : Working force participation rate 1971 and 1981.

Year	Total workers	Males	Females
1971	18,123	17,528	595
	(25.43)	(45.82)	(1.80)
1981	26,585	25,386	1,199
	(25.85)	(46.10)	(2.50)

Source : Census of India 1971 & 1981

Working Force Classification: Secondary and tertiary occupations absorb 90.00% of the total working force, in 1981. Share of primary occupation has decreased from 14.10% in 1971 to 10.00% in 1981. Following is the distribution of working force among three sectors of the town's economy.

Table : Distribution of working force among various sectors 1971 and 1981.

Sectors	1971	1981
Primary	2522 (14.10)	2657 (10.00)
Secondary	4492 (24.70)	23928 (90.00)
Tertiary	11109 (61.20)	

Source : Census of India

5. Economic Base of the town:-

Industrial function : Traditionally this town has been famous for its Trading and Commercial functions particularly for its grain mandi but gradually some small scale industrial units are also coming up. There are 100 small scale industries employing 813 persons. Medium and large industrial units are yet to come up in the town. Manufacturing of sewing machines and its parts is the main industrial activity in the town. There have been 47.60% growth of industrial units and 38.20%

Cont...3/-

in industrial employment during 1971-81. Following table indicates the detailed break-up of industries:

Table : Number of industrial units and employment in 1971, 1981 and 1983.

Type	1971		1981		1983		% Growth	
	Units	Employment	Units	Emp.	Units	Emp.	Units	Emp.
Registered factories								
Small scale	40	256	84	670	100	813	47.60	38.2
Medium scale	-	-	-	-	-	-	-	-
Large scale	-	-	-	-	-	-	-	-
Unregistered factories	Not applicable							
Household industries	Not applicable							

Source : General Manager District Industries Centre Ghaziabad.

Printing and publishing units account 35.3% of the total industrial units followed by machinery units 21.5% where as machinary units had engaged 48.4% of the total industrial workers followed by food articles units 15.5%.

6. Trading functions:- Hapur town is the famous commercial centre for Western U.P. Grain and Gur mandi of this town is famous all over India. There had been 173 whole sale grain shops engaging 48.3% of the total whole sale trading activities working force in the year 1974. Following table illustrates the number of units and persons employed in trading activities in the year 1974.

Cont..4/-

Table : Trading units and employment in 1974

Main trades	Retail trade			Wholesale trade		
	No. of shops	Workers	% of works	No. of shops	No. of workers	% of works
Food items	865	1280	30.9	173	1385	48.3
Soft goods	249	394	9.5	48	433	15.1
Hard goods	368	712	17.3	115	937	32.7
General stores	97	203	4.9	–	–	–
Repairing	179	262	6.4	–	–	–
Service	404	800	19.4	–	–	–
Service yards	96	287	6.9	30	111	3.9
Others	64	197	4.7	–	–	–
Total	2322	4134	100.0	366	2866	100.0

Source : Hapur Master Plan 1979-2001

7. Specialised functions:- There is one Krishi Utpadan Mandi Samiti operating in the town since November, 1967 which handles the transaction of cereals, pulses, oil seeds, yarn, tobacco, fodder, vegetables, fruits, animal husbandry products and some forest products like wood, tender leaves, katha etc. Annual value of arrival in the mandi had been at the tune of 16062 tonnes with a value of Rs.34.88 crores.

8. Urban Planning and Development:- U.P. Town Planning Department has prepared Master Plan for 1979-2001 which also includes 31 peripheral villages of the town, with an area of 61.72 sq. kms.

9. Utilities and services:-

(i) Water Supply:- Drinking water supply is provided by the local body in the town. There are 9 tube wells for the supply and 4 overhead tanks for the distribution of fully treated drinking water, and

Cont...5/-

95% of the towns population have been benefited by the drinking water facilities. There are 7,648 house connections and 194 public taps with an average daily consumption of 1,75,000 gallons. The total water shortfall for all the uses is 22,00,000 gallons. There is a proposal for augmenting water supply for a population of 15,000.

( ) Sewerage and Drainage:-

(ii) Sewerage:- Sewerage facility in the town is available in the form of waterborne latrines and septic tanks but no facility exists for sewerage treatment. There exists one sewerage dumping station in the town. Sewer is disposed of untreated in the land. At present there is no proposal for extending sewerage facility.

(iii) Drainage:- Drainage facility in the town also exists there is separate storm water drainage with a length of 207.876 kms.

(iv) Electricity Supply:- Following table shows the total number of electricity connections for various uses in the town. Information regarding usewise consumption is not available.

Table : Number of electricity connection.

Domestic	668
Industrial	25
Commercial	870
Road lighting points	1257
Others	-

Source : Census town directory 1981.

(v) Transport facilities:- The town is well connected by both road and rail routes. This town is situated at N.H. 24 and S.H. 18.

(vi) Hapur town has adequate educational, medical/ health and recreational facilities to cater to the present needs of the town population.

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Unregistered factories	Not applicable							
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Source : General Manager District Industries Centre Ghaziabad.

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Cont..4/-

Table : Trading units and employment in 1974

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	No. of shops	Workers	% of works	No. of shops	No. of workers	% of works
Food items	865	1280	30.9	173	1385	48.3
Soft goods	249	393	9.5	48	433	15.1
Hard goods	368	712	17.3	115	937	32.7
General stores	97	203	4.9	-	-	-
Repairing	179	262	6.4	-	-	-
Service	404	800	19.4	-	-	-
Service yards	96	287	6.9	30	111	3.9
Others	64	197	4.7	-	-	-
Total	2322	4134	100.0	366	2866	100.0

Source : Hapur Master Plan 1979-2001

7. Specialised functions :- There is one Krishi Utpadan Mandi Samiti operating in the town since November, 1967 which handles the transaction of cereals, pulses, oil seeds, yarn, tobacco, fodder, vegetables, fruits, animal husbandry products and some forest products like wood, tender leaves, katha etc. Annual value of arrival in the mandi had been at the tune of 16062 tonnes with a value of Rs.34.88 crores.

8. Urban Planning and Development:- U.P. Town Planning Department has prepared Master Plan for 1979-2001 which also includes 31 peripheral villages of the town, with an area of 61.72 sq. kms.

9. Utilities and services:-

(i) Water Supply:- Drinking water supply is provided by the local body in the town. There are 9 tube wells for the supply and 4 overhead tanks for the distribution of fully treated drinking water, and

Cont...5/-

95% of the towns population have been benefited by the drinking water facilities. There are 7,648 house connections and 194 public taps with an average daily consumption of 1,75,000 gallons. The total water shortfall for all the uses is 22,00,000 gallons. There is a proposal for augmenting water supply for a population of 15,000.

( ) Sewerage and Drainage:-

(ii) Sewerage:- Sewerage facility in the town is available in the form of waterborne latrines and septic tanks but no facility exists for sewerage treatment. There exists one sewerage dumping station in the town. Sewer is disposed of untreated in the land. At present there is no proposal for extending sewerage facility.

(iii) Drainage:- Drainage facility in the town also exists there is separate storm water drainage with a length of 207.876 kms.

(iv) Electricity Supply:- Following table shows the total number of electricity connections for various uses in the town. Information regarding usewise consumption is not available.

Table : Number of electricity connection.

Domestic	668
Industrial	25
Commercial	870
Road lighting points	1257
Others	-

Source : Census town directory 1981.

(v) Transport facilities:- The town is well connected by both road and rail routes. This town is situated at N.H. 24 and S.H. 18.

(vi) Hapur town has adequate educational, medical/ health and recreational facilities to cater to the present needs of the town population.

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BULAND SHAHR

1. Bulandshahr town is situated at a distance of 71 kms South-east of Delhi. It is linked with S.H.18 and besides being District Headquarter is also one of the important commercial centre in the U.P. Sub-region of NCR. As per 1981 Census the town had an area of 9.39 sq.km and a population of 1.03436. In the decade 1971-81 the town registered a higher growth rate of 73.83% in comparison to the earlier decades. The following table gives the growth of population of Buland Shahr.

Year	Population	Decadal variation	Variation in %
1901	18,959		
1911	19,383	+ 424	+ 2.2
1921	19,509	+ 126	+ 0.6
1931	24,898	+5389	+27.6
1941	29,701	+4803	+19.3
1951	37,496	+7795	+26.2
1961	44,163	+6667	+17.8
1971	59,505	+15342	+34.7
1981	1,03,436	+43931	+73.83

2. The participation ratio for Bulandshahr in 1981 had been 25.05% which is marginally higher in comparison to 1961-71 decade but it is much less than the decade 1951-61 when the participation ratio was 30.11%. This may be attributed partly to the higher participation in 1961 in primary activities and partly to the change in the definition of workers. Being the seat of administration

for the District, as per 1971 census (1981 census details have not been released) so far) Wrokers engaged in tertiary sector dominated primary and Secondary Sectors. The details are shown in the table below:

Industry	1961 Workers	Percent-age	1971 Workers	Percent-age	1981 Workers	Percent-age
Primary Sector						
Total	776	5.8	882	5.9		
Cultivators	599	4.6	580	3.9	973	3.77
Agriculture Labourers	84	0.6	221	1.5	599	2.32
Forestry, Housing Mining	93	0.6	81	0.5		
Secondary	3110	23.4	3454	23.2		
Household Industry	655	4.9	386	2.6	1287	4.9
Manufacturing	1824	13.7	2565	17.2		
Construction	633	4.8	503	3.4		
Tertiary	9412	70.8	10539	70.9		
Trade & Commerce	3262	24.5	4072	24.7		
Transport Storage & Communication	1073	8.1	1715	11.6		
Others	5077	38.2	4752	31,9	22940	88.9
Marginal Workers					119	
Total Workers	13298	100	14875	100	25918	
Non Workers	30865	70%	44630	75.0	18258	7405
Total Population	44163		59505		103436	
	30.11		24.99		25.05	

In the decade 1961 and 71 the percentage of workers in the three sectors have remained almost consistant, with 30% in Primary sector, 23% in secondary and 71% in teritiary sector. It can also be observed from the table above that there has been an increase in the proportion of agricultural labourers, household industry and a major increase in the commerce, trade and transport which is included in the 'Others' category.

PHYSICAL ASPECTS (1979) Buland Shahr

Rainfall (in Mm)	814.0	
	Max.	Min.
Temperature(in centegrade)	45.00	0.4

3. Industries:

Industrial development-wise , Bulandshahr's role is less conspicuous than those of Sikandrabad and Khurja which are tehsil quarters of Bulandshahr district. There are two large and medium sized industries employing 905 workers.

4. Trade & Commerce:

As mentioned earlier, ttrade and commerce is a dominant activity in this town. Bulandshahr serves its Hinterland as a market centre, hence the people from neighbouring villages and towns come here for marketing.

5. Bulandshahr has a Mandi Samiti which deals with wholesale trade of agricultural commodities. Wheat, Jaggery, Potato, Khandasari and Maize occupy a major place in the produce

and trade from the hinterland. The total annual arrivals accounted in 1983-84 to 6,63 lakhs [illegible] s with a value of Rs.10.20 crores.

The table below gives both the Annual arrival in quantity and value and the major products marketed.

Mandi

	1970-71	1980-81	1983-84
Annual Arrival			
Quantity in	88864	521639	663140
In Rupees	1,11,28,360	6,58,34,671	10,20,98,194

5 main Products marketed:

	Quantity	Rs.
Wheat	2,50,086	3,76,88,976
Jaggery	70,337	1,48,84,720
Khandasari	20,334	81,33,600
Potato	1,56,440	1,12,06,585
Maize	24,985	33,97,860

6. (i) UTILITIES & SERVICES

Water Supply

The source of water in the town is through tubewells. The Municipal board supplies fully treated water. The town has two overhead storage tanks with a capacity of 34,50,000 litres.

There is a proposal for augmentation of water supply to the tune of 5400 litres/minute by Jal Nigam at an estimated cost of 49.536 lakhs(at 1981-82 prices).

The present per capita supply of water in the town amounts to 103 litres per head which falls short of recommended planning standards by 122 litres per person.

(ii) Drainage & Sewerage:

Bulandshahr has a very poor network of open drains which is disposed into pits. A proposed plan to provide drainage to the entire town has been prepared by Jal Nigam at an estimated cost of 430 lakhs.

(iii) Electricity:

Supply of electricity is quite satisfactory in the town. It is linked by State Electricity grid and has two distribution centres with sub stations of 11 K.V and 14 K.V respectively.

There are 8892 domestic connections in the town. The list of connections under various head is given below:

Type	No. of connection
Domestic	8892
Industrial	552
Commercial	2586
Road lighting points	2228
Others	25

Source: Census 1981

Domestic and industrial consumption in the town is 18 lakh KWH and 12 lakh KWH.

(iv) Educational Facilities:

Bulandshahr being a district head quarter has fairly good educational facilities which is adequate not only to the town but also to the neighbouring towns and villages.

(v) Health Facilities:

Medical and health facilities in the town are not adequate, as it has to serve the population of the town and its hinter land.

7. TRANSPORT

(i) Railways:

Bulandshahr is connected by rail to Meerut in the north and Khurja in the south.

(ii) Roads:

The major road network of Bulandshahr is composed of four regional roads. State Highway No. 18 connecting Meerut and No.22 linking Delhi and the road connecting Garhmukteshar, Anupshahar and Shikar Pur are major roads.

ROHTAK

1. BASIC INFORMATION:

1. Physical Setting:

Rohtak is situated at a height of 219 metres above mean sea level at 28° 22' East latitude and 29° 17' North longitude. It is located at a distance of about 70 kms. from East of Delhi on National Highway No. 10.

2. Climate:

The climate of the town is healthy and dry with an intersely hot summer and a cold winter. Only during the three monsoon months of July, August and September moist air of oceanic origin penetrates to make the weather comparatively milder. Average annual rainfall as per State Town Directory is 781.4 m.m. (1979).

3. Area and Population:

As per 1981 census total area of Rohtak Municipal Committee is 22.08 sq.kms. Population of the town in 1981 was 1,66,767 and it is the fourth biggest town of N.C.R. next to Meerut, Faridabad-Ballabhgarh Complex and Ghaziabad respectively. Between 1971-81, the population of Rohtak town had shown a growth of 33.68% whereas the town had witnessed a growth rate of 41.46% between 1961-71. This indicates that the growth rate of population of the town has declined between 1971-81 when compared with the previous decade.

As per 1981 census density of the town is 7550 persons per sq. km. which is highest when compared with other towns of the district, lowest being 217 persons per sq. km. at Kalanaur. During Census year 1981 there were 867 famales per thousand males.

4. Workers:

As per 1971 census 37.82% of the total working population was engaged in 'other services', 29.44% in trade and commerce and only 16.77% in household and manufacturing industry. As per 1981 census 26.67% of the total population of Rohtak were main workers. Out of these workers only 2.84% workers were engaged in household industries 3.98% workers were cultivators of agricultural Labours. The remaining 93.18% workers have been shown as other workers.

II. PHYSICAL FACILITIES:

1. Transport:

1 (a) Rail: Rohtak is an important railway junction on Delhi-Bhatinda broad gauge railway line. There is a circular railway connection between Rohtak-Gohana-Panipat-Jind and Rohtak. There is a railway connection between Delhi-Rohtak & Bhivani as well.

1 (b) Road: Rohtak town has very good road connections. One National Highway i.e. No.10 connecting Delhi with Bhatinda and Ferozpur and five state Highways namely Sampla-Kharkhoda, Sampla-Chhada, R.K.D.B. Road, Bahadurgarh-Jhajjar and G.L.M.B. Road connect Rohtak with all neighbouring towns and important distant towns.

2. Power Supply:

The town gets its power supply through Regional Grid. Detailed sectorwise number of electric connection alongwith average monthly consumption is indicated in the following table:

Category of Use	'Number of connections' Within municipal limits	Outside Municipal limits	Average Monthly consumption Within M.C. limits K.W.H.	% to total	Outside M.C. limits K.W.H.	% to total	Total for town K.W.H.	% of total
1. Domestic	27767	12581	19,74,230	41.80	2,42,339	45.38	21,16,569	39.46
2. Commercial	8132	632	9,33,295	19.32	23,479	4.40	9,36,774	17.46
3. Industrial	1272	349	18,01,841	38.07	2,00,174	37.48	20,38,915	38.01
4. Irrigation/ Public	180	695	2,64,630	0.30	64,399	12.06	79,029	1.47
5. Water Works	11	4	87,714	1.82	328	0.06	88,042	1.64
6. Street Lighting	11	47	19,846	0.42	2,500	0.47	22,346	0.42
7. Others	5	24	81,653	1.69	819	0.15	82,472	1.54
Total	37,378	15,332	48,30,179	100.00	5,34,038	100.00	53,64,217	100.00

From the table given above it may be seen that there is fairly equal distribution between domestic and industrial use commerce occupies the third place in total consumption.

It may further be stated that 100% of the town area even the slums is served by electricity.

Total demand for power is 120 Amts whereas total avilable supply is 50 Amts and this results in regular load shedding to the extent of about 58.3%. This uncertainty about power supply is main hurdle for the fast development of town in general and industry in particular.

Water Supply:

The main source of water supply is Yamuna Canal. Sub soil water is brackish and is unfit for human consumption. For drinking purposes piped fully treated water is supplied by the Municipal Committee of the town.

Sewerage & Drainage

Only abo ut 40% of Rohtak municipal area is served by sewerage open and storm water drains cover only about 20% of the area. There is a scheme to extend the area with open drains.

About 60% of sewerage is pumped out in drain No.8 the rest is utilised for irrigation purposes.

The town is highly flood prone although speedy measures are being taken to overcome the calamity. However, it may be stated that floods cannot be avoided completely in Rohtak town as surface of the town is saucer type. As a result whenever there are rains,

discharge of water through gravity does not take place and water is automatically drained towards centre of the town. Thereafter the rain water is pumped out of the city in three to four stages.

COMMUNICATION:

Post and Telegraph office: Rohtak has adequate post and telegraph facilities as there is one Head Post Office, 15 sub-post offices and 3 Extra Departmental Post Offices. There is one main telegraph office and this facility is available at two more post offices of the town.

Telephone Facilities:

The town has its own telephone exchange with 3325 number of connections as on 31.8.1984. There were 465 persons on wating list as on 31.8.1984, to have new connections and the number of such persons as on 31.3.84 was only 365. This indicates that the demand of telephone connections is increasing.

1. Industrial Estates:

Rohtak town has one Industrial Development Colony which is spread over an area of 63.45 acres.

2. Existing Industries:

As per information given in action plan of Distric Industries Centre for 1981-82 to 1986-87, details/ particulars of large and medium scale industrial units as on 31.3.1981 is as given below:

Sl No	Name and address of Unit	Items manufactured	Total capital investment (Rs. crores)	Production in crores (Rs. crores)	Employing No. of Persons
1.	M/s. Haryana Dairy Development Federation Ltd, Rohtak	1. Ghee 2. Butter 3. S.M.P.	1.47	2.16	212
2.	Laxmi Precision Tools, Rohtak	Precision Screws	0.94	2.22	189
3.	Hafed Cattle Feed Plant Rohtak	Cattle & Poultry Feed	0.76	1.43	95
4.	Mohan spinnning Mills, Rohtak	Cotton Yarn	0.75	3.68	944
5.	Haryana Coop. Sugar Mills Ltd., Rohtak	Sugar	3.765	3.89	676

As per information published in the action plan for Distric Industries Centre, Rohtak, there were 1983 S.S.I units as on 31.3.81 in Rohtak circle. Detailed information, major category wise, for these units may be stated as under:

Nature of Industry	No. of Units	Capital Investment (Rs. in lacs)	Production (Rs. in lacs)	Employment
1. Engineering units	70	70.75	125.25	548
2. Furniture	99	20.00	125.00	495
3. Rubber Products	28	12.00	28.00	120
4. Building Material	60	5.00	30.00	240
5. Electrical goods	44	8.00	15.00	220

6. Casting foundary	27	12.50	20.00	270
7. Nuts and Bolts	19	9.50	10.00	115
8. Repair workshops	68	6.80	13.60	392
9. Chemical & pesticides	108	54.00	250.00	452
10. Leather goods	124	12.00	20.00	508
11. Agr. implements	306	6.12	612.00	1630
12. Textile & Allied	194	35.84	119.20	978
13. Food and food products	70	105.00	210.00	307
14. Others	766	186.24	717.90	4290
	1983	543.75	2295.95	10365

Agricultural implements, leather goods, textile and allied products and chemicals and pesticides account for about 37% units (732 units out of a total of 1983 units) and 32.5% of employment in S.S.I. sector (3368 persons out of 10365 persons).

These four categories account for about 20% of the total capital investment in S.S.I. units and 45% of production. Agricultural implements is the most labour intensive industry which accounts for only about 1% of capital investment and provides employment to more than 15% of workers and produces goods worth more than 26% of the goods produced in the S.S.I. sector.

3. Medical facilities: In Haryana, Rohtak town possesses almost the best medical facilities. The town has one medical college and Hospital and one Ayurvedic College.

4. Educational facilities:- Rohtak town is a centre of educational activities. Besides fulfilling needs of the local population it also caters to educational and recreational requirements of its hinter land.

Markets:-

There is one regulated mandi at Rohtak. Arrival of important commodities during 1983-84 are mentioned as under:-

Sl.No.	Commodity	Quantity of arrival (quintals)
1.	Wheat	2,58,533
2.	Rice	50,561
3.	Sarasan	32,480
4.	Binola	44,417

89.0% have been shown as other workers.

Total persons enrolled in the live register (L.R.) of the Employment Exchange as on 31.6.1984 = 14531

II. PHYSICAL FACILITIES :-

1. Transport :

Delhi. The town is located on metre guage which connects Delhi-Jaipur-Ahmedabad.

2. Power Supply :

For power supply purposes Rewari is connected with Regional Grid and has one sub-station with 132 K.V. and connected load of 14480 K.W. as on 31.8.1984. Details, indicating major category-wise number of connections and average monthly consumption are indicated as under:-

Sl. No.	Major use	No. of connections	Average of monthly consumption k.w.h.	% of total consumption
1.	Domestic	8664	5,14,818	36.95%
2.	Commercial	3427	2,03,547	14.61%
3.	Industrial	527	4,96,096	35.61%
	i) Small scale	484	1,68,240	
	ii) Medium scale	31	1,20,013	
	iii) Large scale	12	2,07,843	
4.	Irrigation	116	21,254	1.74%
5.	Street lighting	4	12,733	0.91%
6.	Others			
	i) Public Water Works	7	1,800	0.13%
	ii) Railway station	1	1,39,985	10.05%
	iii) Railway colony	1		
	TOTAL		13,93,233	100.00%

Power supply position at Rewari is extremely tight as

Cont..3/-

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connected load is more than 57 M.V.A. whereas installed capacity is 25 M.V.A. Thus there is short fall of morethan 60%

3. Water supply:-

water for drinking purposes.

4. Sewerage and drainage:-

Rewari has underground sewerage system and sewerage is disposed off on land after treatment. Storm water drains and sewerage are available in places where sewerage facility is available.

The Municipal Committee has drawn a proposal to extend the sewerage facility and also to have separate storm water drains.

The town has regular garbage disposal system and about eight tonnes of garbage is disposed off daily by Municipal Committee of the town.

5. Communication:-

Rewari town has a telephone exchange with capacity of 1000 lines. As on 27.9.1984 there were 965 telephone connections and 200 applications for fresh connections were pending.

There is one main post office, 4 sub-offices and 23 branch offices in September, 1984. Telegraphic facility was available at the main post office.

6. Housing conditions and land prices:-

Housing Board of Haryana has developed a Housing colony of 68 L.I.G., 132 M.I.G. and 16 H.I.G. houses. At the time of survey the houses had been constructed, water line had been laid, electric fittings completed, sewerage work and internal road net work was in progress (October, 1984).

H.U.D.A. is also developing a residential locality covering an area of 190 acres. Housing Board colony spread over an area of 6 acres was also in progress.

Cont.,4/-

Land prices (Market rate) for different uses at different places in 1984 were as under:-

	Residential	Commercial	Industrial
1. Central part of town	Rs.150-200 (Rs.40-60 in 1970-71)	Rs.200-250 (Rs.50-70 in 1971)	Rs.30.50
2. Outlying areas	Rs.50.00	N.A.	N.A.
3. Newly developed areas	Rs.100.00	N.A.	N.A.
4. Others	Rs.25.00	N.A.	N.A.

In 1981 there were in all about 117 industrial units employing about 2500 workers. The manufactured items were mainly metal based engineering goods, chemicals and textile goods.

5. Medical facilities:-

Rewari has adequate medical facilities. There is one Civil Hospital of the State Government with 50 beds. Maternity and child welfare centre is part of the Civil Hospital.

Rewari town has also been selected by the State Government under intensive child development scheme.

4. Recreational facilities:-

For the recreation of the residents of Rewari town, Municipal Committee of the town maintains six parks one play-ground and one reading room. There are three cinema houses and one private club as well.

5. Market:-

Rewari town has one of the biggest regulated Grain Mandis (Anajmandi) of the area. Arrivals of important commodities

Cont...5/-

for the year 1983-84 are as below:-

Sl. No.	Name of the commodity	Arrival
1.	Wheat	3,63,578
2.	Barley	1,87,992
3.	Bajra	44,986
4.	Gram	25,166
5.	Methie	2,525
6.	Sarson	1,13,145
7.	Toria	1,295
8.	Bindi	63,018
9.	Groundnut	2,546
10.	Gowar	16,962
11.	Fodder	15,189
12.	Potato	36,994
13.	Shakarkandi	1,199
14.	Onion	9,373
15.	Vegetables	49,217
16.	Fruits	Not in one denomination (Orange, Mango, Watermelon, Apple banana etc.
17.	Chillies	3,514
18.	Gur	26,887
19.	Shakar	5,909
20.	Khandsari	28,542

Cont...6/-

DEVELOPMENT PLAN OF REWARI

The Development Plan of Rewari has been prepared for year 2001 for an estimated population of 1.10 lakh (and 75,000 for 1991).

In the preparation of the Development Plan as attempt has been made to integrate the proposed plan with the existing set up of the town. Major areas for development have been proposed on South-East side of Delhi-Jaipur Main Railway Line firstly because it lies at comparatively higher altitude than the other areas and secondly to restrict development of the town on that side. Total proposed areas of the town by 2001 would be 1400 hectares as compared to the present 510 hectares. Major land use proposals will be as indicated below:-

(Area in Hectares)

Land use	In controlled area	In Municipal area	Total Area
1. Residential	356.00	289.5	645.5
2. Commercial	40.5	60.5	101.0
3. Industrial	174.0	-	174.0
4. Transport & Communication	261.0	44.5	305.5
5. Public utilities	4.0	1.0	5.0
6. Public & Semi-public uses	54.5	48.5	103.5
7. Open space	-	66.0	66.0
Total	890.0	510.0	1400.00

A ring road around the town has been provided in a manner that it separates industrial area from other areas and passes mainly through agricultural zone without affecting any kind of development. Keeping in view the N.C.R.Plan, proposals for effective functioning of outer ring road namely Rewari - Jhajjar, Rewari - Bawal and Rewari - Delhi roads, have been upgraded to the level of National Highways.

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6. Casting foundary	27	12.50	20.00	270
7. Nuts and Bolts	19	9.50	10.00	115
8. Repair workshops	68	6.80	13.60	392
9. Chemical & pesticides	108	54.00	250.00	452
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2.	Rice	50,561
3.	Sarasun	32,480
4.	Binola	44,417

5.	Chana	22,446
6.	Jowar	10,237
7.	Bajra	5,933
8.	Gowar	6,875
9.	Fodder	3,08,884
10.	Potato	38,605
11.	Vegetables	1,26,937
12.	Fruits	99,438
13.	Gur	26,572

The city mandi has emerged as the second largest grain market of Haryana.

Rohtak is a very important centre of wholesale trade for cloth and timber. Cloth market of Rohtak is the biggest in Haryana. It is perhaps the second largest cloth market of North India, next only to Delhi.

5. Financial Institutions:

There is a very strong banking base in Rohtak district in general and Rohtak town in particular.

Local Administration:

Rohtak town is the district head quarter of Rohtak district. Local administration of Rohtak town is being run by Municipal Committee. Important services being provided by the Municipal Committee are drinking water, sewerage and drainage, cleanliness and maintenance of roads, medical facilities, educational facilities, maintenance of parks and play grounds, street lightling, collection and disposal of garbage etc.

Statement of Account of Rohtak M.C for 1983-84

Income Major Head	(in rupees)	% to total	Expenditure Major Heads	(in rupees)	% to Total
1. House Tax	20,40,690	11.09%	1. Establishment	66,43,981	44.25%
2. Octroi	52,91,512	28.75%	2. Contigency	15,60,678	10.39%
3. Water Rate	10,70,995	5.82%	3. Developmnot works	11,17,470	7.45%
4. Rent	2,41,975	1.31%	4. Grant, Slums, works, Floods etc	25,74,980	17.15%
5. Stamp Duty	5,68,469	3.09%	5. Repayment of loans	20,74,193	13.81%
6. Teh Bazar	1,51,515	0.82%	6. Misc.	10,43,060	6.95%
7. Grants	62,55,000	33.99%			
8. Loans	5,80,000	3.15%			
9. Misc.	22,02545	11.97%			
Total	1,84,02,701	100.00%	Total	1,50,14,362	100.00%

Development Plan of Rohtak & its Major recommendations:

Development plan of Rohtak town become effective in March 1982 and the plan has been prepared for 2001.

Development Potential:

About the development potential of Rohtak it is generally said that it is a self-sustaining town and will develop even without induced development inspite of the fact that it has to face many problems and scarcities:

The positive points for the growth potential of the town are:

i) Excellent educational facilities,
ii) Excellent medical facilities,
iii) Good transport net-work,
iv) Old town with deep rooted trade and commerce activities;

The negative points which have been responsible for slow growth of the town may be mentioned as:

i) Floodability;
ii) Scarcity of electricity;
iii) Scarcity of water

R E W A R I

I. BASIC INFORMATION:

1. Physical setting:

Rewari town is located at 28°-15' North Latitude, 76°-40' East Longitude on Delhi-Jaipur-Ahmedabad Metre Guage Railway Line at a distance of 93 Kms from Delhi towards its south-west. Delhi-Jaipur National Highway No.8 passes at a distance of 13 Kms. from Rewari town.

2. Climate:-

Climate of the town is dry and healthy. The average annual rainfall of the town is 516.2 m.m.

3. Area and population:-

As per 1981 census Rewari town was spread over an area of 6.06 sq.kms. and had a population of 51,562. The density of population of the town as per 1981 census was 8509 persons per sq. km.

The town has witnessed very slow and inconsistent growth of population in the past. Between 1971-81 population of the town increased by 17.49% whereas, the increase in the decade 1961-71 was 18.63%. However, the population growth rate between 1951-61 was only 8.54%.

4. Workers:-

As per 1971 census, out of total population of 43885 persons, 10506 were workers and that shows participation rate of 23.94%. The town was dominated by tertiary sector activities as 73.12% of the total working force was engaged in this sector in 1971. Trade and Commerce was the most important profession as it employed 35.09% of the total workers during the year, "other services" employed 21.7% workers and transport and communication employed 16.33%. Industrial activity had a very low profile comparatively as it employed only 14.96% of working force in 1971. As per 1981 census 26.68% of total population were main workers, out of this 8.50% workers were engaged in house-hold activities, 2.41% were cultivators and agricultural labours and the rest

Cont..2/-

09.09% have been shown as other workers.

Total persons enrolled in the live register (L.R.) of the Employment Exchange as on 31.6.1984 = 14531

III. PHYSICAL FACILITIES:-

1. Transport:

Rail: The town is located on metre guage which connects Delhi-Palanpur-Ahmedabad.

2. Power Supply:

For power supply purposes Rewari is connected with Regional Grid and has one sub-station with 132 K.V. and connected load of 14480 K.W. as on 31.8.1984. Details, indicating major category-wise number of connections and average monthly consumption are indicated as under:-

Sl. No.	Major use	No. of connections.	Average of monthly consumption k.w.h.	% of total consumption
1.	Domestic	8664	5,14,818	36.95%
2.	Commercial	3427	2,03,547	14.61%
3.	Industrial	527	4,96,096	35.61%
	i) Small scale	484	1,68,240	
	ii) Medium scale	31	1,20,013	
	iii) Large scale	12	2,07,843	
4.	Irrigation	116	21,254	1.74%
5.	Street Lighting	4	12,733	0.91%
6.	Others			
	i) Public Water Works	7	1,800	0.13%
	ii) Railway station	1	1,39,985	10.05%
	iii) Railway colony	1		
	Total		13,93,233	100.00%

Power supply position at Rewari is extremely tight as

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connected load is more than 57 M.V.A. whereas installed capacity is 25 M.V.A. Thus there is short fall of morethan 60%

3. Water supply:-

water for drinking purposes.

4. Sewerage and drainage:-

Rewari has underground sewerage system and sewerage is disposed off on land after treatment. Storm water drains and sewerage are combined. In places where sewerage facility is available.

The Municipal Committee has drawn a proposal to extend the sewerage facility and also to have separate storm water drains.

The town has regular garbage disposal system and about eight tonnes of garbage is disposed off daily by Municipal Committee of the town.

5. Communication:-

Rewari town has a telephone exchange with capacity of 1000 lines. As on 27.9.1984 there were 965 telephone connections and 200 applications for fresh connections were pending.

There is one main post office, 4 sub-offices and 23 branch offices in September, 1984. Telegraphic facility was available at the main post office.

6. Housing conditions and land prices:-

Housing Board of Haryana has developed a Housing colony of 68 L.I.G., 132 M.I.G. and 16 H.I.G. houses. At the time of survey the houses had been constructed, water line had been laid, electric fittings completed, sewerage work and internal road net work was in progress (October, 1984).

H.U.D.A. is also developing a residential locality covering an area of 190 acres. Housing Board colony spread over an area of 6 acres was also in progress.

Cont..4/-

Land prices (Market rate) for different uses at different places in 1984 were as under:-

	Residential	Commercial	Industrial
1. Central part of town	Rs.150-200 (Rs.40-60 in 1970-71)	Rs.200-250 (Rs.50-70 in 1971)	Rs.30.50
2. Outlying areas	Rs.50.00	N.A.	N.A.
3. Newly developed areas	Rs.100.00	N.A.	N.A.
4. Others	Rs.25.00	N.A.	N.A.

In 1981 there were in all about 117 industrial units employing about 2500 workers. The manufactured items were mainly metal based engineering goods, chemicals and textile goods.

3. Medical facilities:-

Rewari has adequate medical facilities. There is one Civil Hospital of the State Government with 50 beds. Maternity and child welfare centre is part of the Civil Hospital.

Rewari town has also been selected by the State Government under intensive child development scheme.

4. Recreational facilities:-

For the recreation of the residents of Rewari town, Municipal Committee of the town maintains six parks and play-ground and one reading room. There are three cinema houses and one private club as well.

5. Market:-

Rewari town has one of the biggest regulated Grain Mandis (Anajmandi) of the area. Arrivals of important commodities

Cont...5/-

for the year 1983-84 are as below:-

Sl. No.	Name of the commodity	Arrival
1.	Wheat	3,63,578
2.	Barley	1,87,992
3.	Bajra	44,986
4.	Gram	25,166
5.	Mothie	2,525
6.	Sarson	1,13,145
7.	Toria	1,295
8.	Bin[illegible]	63,018
9.	Groundnut	2,546
10.	Gowar	16,962
11.	Fodder	15,189
12.	Potato	36,994
13.	Shakarkandi	1,199
14.	Onion	9,373
15.	Vegetables	49,217
16.	Fruits	Not in one denomination (Orange, Mango, Watermalon, Apple banana etc.
17.	Chillies	3,514
18.	Gur	26,887
19.	Shakar	5,909
20.	Khandsari	28,542

/Cont...6/-

DEVELOPMENT PLAN OF REWARI

The Development Plan of Rewari has been prepared for year 2001 for an estimated population of 1.10 lakh (and 75,000 for 1991).

In the preparation of the Development Plan as attempt has been made to integrate the proposed plan with the existing set up of the town. Major areas for development have been proposed on South-East side of Delhi-Jaipur Main Railway Line firstly because it lies at comparatively higher altitude than the other areas and secondly to restrict development of the town on that side. Total proposed areas of the town by 2001 would be 1400 hectares as compared to the present 510 hectares. Major land use proposals will be as indicated below:-

(Area in Hectares)

Land use	In controlled area	In Municipal area	Total Area
1. Residential	356.00	289.5	645.5
2. Commercial	40.5	60.5	101.0
3. Industrial	174.0	-	174.0
4. Transport & Communication	261.0	44.5	305.5
5. Public utilities	4.0	1.0	5.0
6. Public & Semi-public uses	54.5	48.5	103.5
7. Open space	-	66.0	66.0
Total	890.0	510.0	1400.00

A ring road around the town has been provided in a manner that it separates industrial area from other areas and passes mainly through agricultural zone without affecting any kind of development. Keeping in view the N.C.R.Plan, proposals for effective functioning of outer ring road namely Rewari - Jhajjar, Rewari - Bawal and Rewari - Delhi roads, have been upgraded to the level of National Highways.

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P A L W A L T O W N

Palwal is situated about 65 Kms from Delhi on National Highway No.2 as well as the main rail head on New Delhi - Mathura Section of the broad guage. As per 1981 census it had about 47328 population as against 36207 in 1971 and 27863 in 1961 - showing a growth rate of 29.95% during 1961-71 and 30.72% during 1971-81. The town has an area of 5.52 kms and a population density of 870 persons per sq.km. It has a municipal committee which was founded in 1891.

The total number of workers in the town during 1971 were 8,800 which increased to 12,733 in 1981. The participation ratio was 24.30% and 26.9% respectively in 1971 and 1981.

I. INDUSTRIAL FUNCTION:-

The town is not much developed industrially. At present 327 small scale units are in the town employing about 8011 persons. Broad classification of those units is as follows:-

Type	No	Employment
i. Agro-based	65	306
ii. Forest based	17	83
iii. Mineral based	3	[illegible]
iv. Textiles	5	13
v. Chemicals	13	61
vi. Animal husbandary based	27	68
vii. Building material & ceramics	13	110
Total	327	8011

Till now the industrial development on this side has been confined to Faridabad-Ballabhgarh complex but now it has reached a satuaration point. As industrial development along the N.H.2 is expanding southward, the next focal point beyond Ballabhgarh can be only at Palwal. It has a great potential for development as industrial town in future.

Cont..2/-

II. TRADING:-

The town is having local markets to provide durable as well as non-durable consumer items though they are not much developed due to the existence of Faridabad and Delhi in its vicinity.

It has a well organised mandi where food grains, vegetables, fruits etc., are being marketed in a regularised way with the help of Market Committee, Palwal on a large scale. During 1983-84 the turnover of the committee was of about 8.29 lakh rupees. The mandi is provided with all the facilities like rest house, canteen, post office, bank, cattle sheds, water cooler, street lights, common platforms etc. The major commodities marketed in the mandi during 1983-84 were wheat (161938 Qntls.), Barley (156764 Qntls.), paddy (55681 Qntls.), Bajra (7020 Qntls.), Potato (7219 Qntls.), Onion (1261 Qntls.), vegetables (12548 qntls.) and fruits (13781 Qntls.). At present there are about 100 licences of the committee doing this business.

The town also has enough godown facilities. There are four big godowns in the town the details of which are as follows:-

i)	FCI	8750	M.Tonnes	Capacity
ii)	Food and Civil Supply	3500	"	"
iii)	Warehousing Corporation	5500	"	"
iv)	HAFED	5000	"	"

III. MAN POWER:-

There is an employment exchange in the town which can provide trained and untrained manpower for developmental activities in the town. As on 31.12.83 as many as 11623 persons were registered with the exchange.

IV. PLANNING:-

A master plan for the town was prepared by the Directorate of Town Planning Government of Haryana in 1978. According to this the town has been planned for 80,000 population by the end

Cont...3/-

of 2001. Land use of the town as per plan is as follows:

Land use	Area falling within MC limits (in acres)	Area falling within controlled area (in acres)	Total Area (in acres)
1. Residential	765	305	1070
2. Industrial	80	220	300
3. Commercial civic centre	70	-	70
4. Public Building/ Institutional Area	135	40	175
5. Warehousing	55	-	55
6. Undetermined uses	55	195	250
7. Major open spaces a. Green belts	110	125	235
b. Town park	80	-	80
8. Area unfit for building activities	160	-	160
9. Roads	140	125	265
Total	1650	1010	2660

4. PRESENT LEVEL OF DEVELOPMENT:-

At present, of the total 2.5 sq. miles of the town area about 60% has been developed so far with all the facilities except sewerage. Remaining 40% area is lacking one facility or the other. Approach roads are available in all the parts of the city but a considerable part of it are Kachha roads.

(i) Housing condition: -

During 1983-84 there were about 8500 houses in the town out of which 7500 were pucca and 1000 were kachha.

(ii) Slums:-

There are three slum colonies in the town spread over in about ½ sq.mile area having 1700 units inhabiting about 11800 population. Private water connection are available in these areas but electricity is not available in most of the slum areas.

Cont..4/-

(iii) Land prices:-

In the central part of the town the land prices for residential use ranged between Rs.200/- to Rs.500/- per sq.metre. On G.T.Road it was upto Rs.1000/- per sq. metre for commercial use.

VI. CIVIC AND OTHER AMENITIES:-

(a) Water Supply:- At present Municipal Committee is responsible for the drinking water supply in the town. Source of water supply is tube wells. It is being fully treated. As on 31.8.84 there were 3866 house connections, and 88 public taps in the town. Average daily consumption is about 5 lakh gallons. It is being served to about 75% of the total population. For remaining 25% population schemes are under consideration to extend the water supply further.

(b) Sewerage:- Only 10% of the total area of the town is covered by sewerage facilities. At present there are about 270 connections. Septic tanks are used for this purpose and its disposal is done though pumps into the fields. There is no sewerage treatment plant.

(c) Drainage:- About 1,63,459 running ft. of drains are available in the town serving about 60% of its area and 80% of the population. Storm water drains exist separately. Disposal of these drains is mainly done in the open fields to be used for irrigation purposes. Local authority earns some money out of it from the farmers.

(d) Garbage disposal:- About 54000 cubic ft garbage is collected and disposed every day by using trenching method. It is not utilised for generation of gas etc. at present.

(e) Electricity Supply:- Electricity is supplied from the regional grid. Existing connected load is about 6500 K.W.

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As on 31.3.84 there were 10215 electricity connections in the town of which 9761 were with-in the M.C. limits and a 454 outside M.C.limits. Use-wise distribution of these connections alongwith their average monthly consumption was as follows:

Category of use	No. of connections (as on 31.3.84		Electricity consumption (83-84) in units (Average monthly consumption)	
	Within M.C. limits	Outside M.C. limits	Within M.C.Limits	Outside M.C.Limits
1. Domestic	7048	400	3,00,000	70,000
2. Commercial	2300	39	1,30,000	12,000
3. Industrial	399	10	1,90,000	6,000
4. Irrigation /public works	9	-	18,000	-
5. Street lighting	3	5	3,200	Not available
6. Others (specify)	2	-	300	-
Total	9761	454	641500	88000

The statement shows that electricity in the town is used mainly for domestic purposes. There were only 409 industrial connections out of total 10215 connections in the town. It shows the industrial backwardness of the town. Though for commercial purposes the number of connections were 2300 but the consumption was only 1,30,000 units p.m. showing very low commercial activity in the town.

(f) Medical and Health Facilities:- The town has one general hospital with 30 beds and 5 doctors in addition to one ESI dispensary. About 150 to 200 patients are attended in this hospital everyday. In private sector there are 3 nursing homes with 30 beds capacity and about 50 private clinics run by individual doctors.

Cont..6/-

in this hospital everyday. In private sector there are 3 nursing homes with 30 beds capacity and about 50 private clinics run by individual doctors.

(g) Recreation:- For recreation of the public there are four parks, one reading room and one public library, all run by the municipal committee of the town. It is also having one cinema and one private club for entertainment.

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TOWN PROFITE

ALWAR

Alwar town, the capital of erstwhile Alwar state and now a district headquarter in Rajasthan, has assumed a special significence as it is one of the 8 Regional Towns around Delhi in the National Capital Region which has been suggested to be developed with higher order of infrastructural facilities.

2. Alwar city is on longitude 76.36 East and Latitude 27.34" north and at 268 mt above M.S.C. The town is well connected by rail and road with Delhi and Jaipur. The town is on the main Delhi-Ahemdabad meter guage railway line and is at a distance of about 160 kms from Delhi and about 150 kms from Jaipur.

3. Alwar town is traversed by Arawali Ranges towards the South-west. Alwar has a dry climate with hot summer, cold winter and a short monsoon.

4. According to 1981 census Alwar has a population of 145,795 persons (80,003) males and 65795 females). It is one of the biggest town in the Rajasthan sub-region of National Capital Region. Tracing variations in population of the town since the census of 1901 to 1951 etc will be seen that there has not been appreciable increase in population, rather it declined by 27-24 per cent in the decade 1901-11. The population of Alwar town has shown an appreciable increase after 1951. In 1971 it crossed one lakh mark. It has a growth rate of 38 per cent and 45 per cent during the decade 1961-71-71-81. The acceleration in growth rate is mainly due to recent developmental activities like industries, trade and commerce. (Table-1).

5. The district level literacy rate in urban areas as per 1981 census was recorded as 55.93%. The literacy rate for Alwar town was 58.14%. The per centage of literacy in town compares favourably with the one obtaining in whole of the Rajasthan. The number of higher and lower standard educational institutions, technical as well as non technical is also quite high as compared to other towns of the state.

6. In 1981 census the population of the town is classified into three categories on the basis of economic activity. The categories are main workers, marginal workers, and non-workers. As per this classification 72.84 per cent population of the town consists of non-workers while 26.73 per cent and 0.43 per cent are main workers and marginal workers respectively. If we look into sex-wise distribution, 54.25 per cent males of the total population are non-workers while 45.75 per cent males have had been recorded as main workers. (Table-3). If we count marginal workers as non-workers than the participation ratio for Alwar town comes to 26.73%. When compared to 1971 census figures a marginal increase in the participation ratio has taken place. The percentages of workers as cultivators and agricultural labours have declined in the past decade indicating higher participation in secondary and tertiary activities. As per per 1971 census figures the number of workers under other services was the highest i.e. 40.50%, next being workers in trade and commerce i.e. 21.08%. Alwar being the district headquarters, other services remain the predominant sector of employment.

7. Alwar having been included in the National Capital Region and since significent industrial activity has already been noticed, certain major shifts in the composition of working force are quite inevitable. Industry is going to acquire a predominant role and attract a sizeable working force and it shall consequently increase the proportion of workers in construction, Transport and communication and would probably reduce the component of other services. In the due course when more agricultural land in and around the municipal area are urbanised, agricultural activity may be considerably reduced and restricted to only orchards and nurseraies.

Table 1 - Variation of population - Alwar Town (1901-1981

S.No.	Year	Persons	Decade variation	Percentage decade variation	Males	Females
1.	1901	56,771			29,574	27,197
2.	1911	41,306	15466	27.24	22,254	19,051
3.	1921	44,760	3455	8.36	23,433	21,327
4.	1931	47,900	3140	7.02	25.584	22,316
5.	1941	54,143	6243	13.03	28,470	25,673
6.	1951	57,868	2725	6.88	30,833	27,035
7.	1961	72,702	14839	25.64	39,102	33,605
8.	1971	1,00,378	27671	38.06	54,785	45,593
9.	1981	1.45,795	45417	45.25	80.003	65,795

8. Alwar District has a good potential for industrial development and Alwar town being the district headquarter and the biggest town of the district, most of the industries are likely to, be set up in the town. Alwar district has one of best productive land in Rajasthan and therefore, most the earlier industries were agro-based. One of the main objectives of the NCR concept being decentralisation of industrial activities away from Delhi and with the delcaration of Alwar district as industriallly backward district by Government of Rajastha, industrial activities have taken a pace. The state Government has also provided many incentives and subsidies to the industrialist. with the result that a number of sophisticated and large scale industries have come up in recent years. There are two industrial areas in the town known as "Old I Industrial Area and 'Matsya Industrial Area.' The old Industrial Area which was set up in sixties have an area of 200 acres and is now fully developed. In 1971 there were only 5 units operating in the area employing about 200 persons but gradually afte full development, this area emcompasses 70 industrial units in which about 1000 persons are employed. Most of the industries functioning in the area are mineral and chemical based, oil mills and ice factories. A new industrial area known as 'Matyasu Industrial Area' has been developed by Rajasthan Industrial Investment Corporation. This shall function as the most important industrial area for future expansion. This area presently occupies about 2000 acres of land in the east of the town and keeping in view the further demand, this area has scope for further expansion also. Out of total 227 units registered in the year 1981, 204 were small scale, 13 medium and 10 large scale units. Out of these 227 units, only 81 could come up in 1981. In 1983 out of total 260 registered units (225 under small scale 25 under medium scale and 10 under large scale) 157 units have comeup. The total employment in these units have gone up from 15,00 persons in 1981 to about 12,000 persons in 1983. There are in all 300 industrial plots with an area of about 1125 acres.

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(Para 8) Table -1 - Number and area of Industrial plots-Alwar Town

(already built up)

S.No.	Name of the area	1971		1981		1983	
		Plots	Land in acres	Plots	Land in acres	Plots	Land in acres
1.	Matasya Industrial area	-	-	308	1140	295	1126
2.	Old Industrial ares	5	150	70	220.62	72	220.62

Table .2 Industrial Function-ALWAR TOWN

S.No.	Name of the Industrial Area Area	1971 No. of units	Persons employed	1981 No. of	Persons employed	1983 No. of units	Persons employed
1.	Matyasa Industrial area	-	-	81	1500	157	11797
2.	Old Industrial Area	5	200	70	700	70	700

Table 3. Registered factories--Alwar Town

S.No.	Type of Industry	1971 Old I/A	1971 MI/A	1981 Old I/A	1981 MI/A	1983 Old I/A	1983 MI/A
1.	Small scals	2	-	66	204	41	225
2.	Medium scale	1	-	2	13	3	25
3.	Large scale	1	-	2	10	2	10

Table- 4

Industrial Units under production Matsya Industrial Area-Alwar

S.No.	Type of Industry	No. of Units	Employment
1.	Mineral products	6	86
2.	Chemical products	23	1261
3.	Textiles	2	675
4.	Food products	6	266
5.	Dal,flour and oil mills	7	106
6.	Soap factories	1	15
7.	Shoe making	2	41
8.	Plastic Products	6	87
9.	Metal casting and metal products	37	2589
10.	Electrical goods	12	671
11.	Transport equipment	12	4521
12.	Engineering products	11	319
13.	Building materials	11	308
14.	Glass and ceramic works	2	229
15.	Paper and paper boards	5	450
16.	Other type of industries	14	173
		157	11797

Table -5 Important Industries in Mataya Industrial with fixed capital more than Rs. one crore

S.No.	Name of the Industrial Unit	Area in thousand sq.m	Products	Fixed Capital in (Rs. in crores	Labour employment	Power Connection
1.	M/s Kelvinators(I)Limited	190.36	Two and three wheelers	35.00	360	1300 KVA
2.	M/s Paliwal Mini-steel plant	42.25	Mild steel in	1.34	125	750 KVA
3.	M/s Bharat Alums and Chemical Ltd	60.78	Sulphuric acid Alums	2.93	456	1000 KVA
4.	M/s Arthi Alloys and Steel Ltd	116.09	Mini steel plant	3.50	400	15 KVA
5.	M/s Padma Paper mills	180.05	Paper	1.99	283	5000 HP
6.	M/s Sarraj Synthetic Raj Ltd	180.00	Synthetic yarn	6.95	500	450 HP
7.	M/s Ashok Ieyland Ltd	1360.00	Trucks	119.17	3500	2400 KVA
8.	M/s Lamps and Lighting house	40.00	Lamps	1.91	180	200 KW
9.	M/s Vido Gum Chemicals	40.00	Gaugum	3.50	155	350 KW
10.	Modi Alkali and Chemicals ltd	333.96	Utencils and Chemicals	26.67	256	3000 HP
	T otal	2543.49	-	202.96	6215	-

Table-6

Industries according to the size of fixed capital
Matasya Industrial Area-Alwar

S.No.	Fixed Capital (Value in Rs.)	No. of Industries
1.	Less than one lakh	1
2.	1 lakh to 5 lakh	84
3.	5 lakh to 10 lakh	35
4.	10 lakh to 20 lakh	8
5.	20 lakh to 50 lakh	9
6.	50 lakh to 1 crore	10
7.	1 crore and above	10
	Total	157

Table -7

Industries according to the size of Employment.
Matsya Industrial Area-Alwar

S.No.	Size of employment (workers)	No. of Industries
1.	Less than 10	29
2.	10 to 20	58
3.	20 to 50	39
4.	50 to 100	10
5.	100 to 200	10
6.	200 to 500	7
7.	500 to 1000	2
8.	1000 and above	2
	Total	157

9. Alwar has been an important grain mandi. The present mandi located at as Kedalganj. The mandi is very much congested and during the seasonal rush, there is considerable difficulty in approaching the traders bringing and removing the produce transacted. A new wholsale grain market has been constructed east of the railway line along Delhi road which has started functioing and it is proposed to shift the merchants from Kedal - gunj. It is difficult to ascertain correctly the feeding area of Alwar mandi as the produce is brought from various places mostly in trucks. The main commodities brought to the mandi from nearby areas by trucks and bullock carts are wheat, bareley, grains rape-seeds, jwar bajra and jewar. The total arrivals in the madi in the year 1983-84 were 629.79 thousand quintals against 374.26 thousand quintals in 1975-76 which shows an increase of 68% over a very short span of 8 years. The most valued commodity brought in the mandi is mustard, which account for about 85% i.e. Rs.49 crores of the total valuation of the arrivals in the mandi. It is also worth mentioning that arrivals of mustard almost doubled from 83.36 thousand quintals in 1975-76 to 161.04 thousand quintals in 1983-84. The other commodities which rank next to mustard are wheat, grain, bajra and barley. Since Alwar is also one of the largest wheat barley and grain producing districts of Rajasthan the arrival of these commodities is expected to further improve in furture. Thus, in the near future, Alwar is likely to attain importance as a big agricultural produce marketing centre in not only Rajasthan sub-region of NCR but also in the total NCR.

Table.1 Arrivals in mandi - Alwar Town Arrivals in thousand quintals

S.No.	Name of the Commodity	Arrivals 1975-76	Arrivals 1980-81	Arrivals 1983-84	Valuation for 1983-84
A	Foodgrains (Cereals) (Cereals)				
1	Wheat	62.61	171.47	110.47	166.25
2.	Barley	89.51	38.98	54.55	76.75
3.	Grain	31.63	55.65	126.38	275.16
4.	Jowar	2.15	5.84	2.20	3.53
5.	Bajra	21.44	131.08	71.61	0.43
6.	Maiza	3.00	5.57	5.03	7.55
	Goodgrain (pulses)				
1.	Moong	1.77	0.03	0.24	0.86
2.	Urad	0.80	0.29	0.18	0.66
3.	Cjwar	16.00	28.38	45.34	74 .75
4.	Cholla	-	0.76	2.30	1.49
5.	Arhar	6.93	9.25	17.10	62.17
6.	Massar	-	0.13	-	
7.	Moth	-	-	0.14	0.53
B.	Oilseeds				
1.	Seseamum	17.22	11.51	9.27	6.70
2.	Mustard	83.36	45.63	161.04	4862.90
3.	Rape	34.70	12234	14.40	54.78
4.	Groundnut	-	1.69	14.62	39.78
5.	Andoli	-	0.78	1.03	3.70
C.	Others				
1.	Dhaniya	1.10	5.04	3.16	1.63
2.	Maithi	2.00	2.58	0.26	2.25
3.	Jeera	0.04	0.02	0.04	1.50
4.	Peanuts	-	0.01	0.15	0.69
5.	Ghee	-	-	0.04	0.61
6.	Gur	-	-	0.24	0.52
	Total	374.26	527.03	629.79	5645.19

10. Alwar is, one of the mineral-rich district of the state and is endowed with a number of important minerals. Alwar district has both metallic and no-metallic minerals. As regards metallic minarals in Alwar, copper and iron ore is being mined. Its important deposits are Bhagini and kho-Dariba. The production of copper concemtrate from kho-Dariba mines is in several thousand tonnes.

Besides, these minerals other non minerals such as soap stone, marble, cleystone, chrst slate stone are extracted in abundant quantity in the district.

11. There is no shortage of power in Alwar town at present. There is also enough scope for augunenting the supply in future. Power is supplied to Alwar town through power houses and also from Chambal, and Bhakra Hydro-electric power system. There were 132 kv. line (double circuit) from grid chowki, Alwar to "Mataya Industrial area of 20 km length. Single circuit line of 156 kms Jaipur to Alwar, 112 mks from Alwar to Bharatpur, 103 kms from Alwar to Hindaur, 621 kms from Alwar to Katputli and 35.00 km from Alwar to Kishangarh are also there.

There are in all 22,236 connections provided in Municipal limits. Out of these connections 15734 (70.76%) connections are alone for domestic use. These are 5133 (22.08) commercial and 849 (3.82) industrial connections. The total monthly consumption of electricity in different categories amounts to 146.28 lakh kwh. A major

position of power i.e. 134.02 (91.62%) lakh kwh is consumed for industrial use (Table-1).

12. Water supply is made to Alwar town through a service reservcir with a total capacity of 22.45 lakh litres. The main sources of water supply are wells and tube wells. There are in all 13,880 water connections in the town and there are 248 public taps in the city. The water supply through reservoir serves almost entire city. The per capita water supply is 30 gallons, which when compared to other cities of this size, is quite high. A detailed scheme with proposals to augment water supply by 15 lakh gallons daily has been prepared and is under consideration of the government.

13. The district level literacy rate in urban areas as per 1981 census was recorded as 55.93%. The literacy rate for Alwar town was 58.14%. The per centage of literacy in town compares favourably with the one obtaining in whole of the Rajasthan. The number of higher and lower standard educational institutions, technical as well as non technical is also quite high as compared to other towns of the state.

14. Alwar town is well equibed with medical facilities It caters to the whole of the region as far as medical facilities are concerned. There are three general Hospitals, four allopathic dispensaries, one ayurvedic and one Homoepathic dispensary, one family planning centre, on-e T.B. Sanitorium, five nursing homes etc. The total number of beds in various institutions are about 475. The ratio of number of beds to one thousand population comes to 3.24.

Table-1 Electricity supply - Alwar Town

S.No.	Category of use	No. 8 Connection (within M.C.Limits)	Electricity consumption (average monthly consumption Kwh) (in Lacs)
1.	Domestic	15734	5.38
2.	Commercial	5133	3.64
3.	Industries		
	a. Small scale	763	1.86
	b. Medium scale	142	4.25
	c. Large scale	44	127.91
4.	Agriculture	305	0.46
5.	Public water works	47	0.56
6.	Street Lights	14	0.16
7.	Others	54	2.06
	Total	22236	146.28

15. An Employment Exchange is functioning in Alwar. This is the only employment exchange in the district. In 1971, 8123 persons were enrolled by the exchange for for seeking jobs out of which 1099 persons were skilled and 7024 persons were unskilled. Since then the figures have increased almost three times. In 1983 the total number of persons enrolled were 21.973, out of which 3452 persons were skilled and 18.521 persons unskilled. Out of this enrollment, the Employment exchange had been able to provide jobs to 866 persons (Table-1)

16. There existed a municipality in the city of Alwar as early as 1871-72. In 1903 Alwar Municipal Act was passed. This arrangement continued till the Rajasthan Municipalities Act of 1959 came into force. The municipal board was later on upgraded as council since the population of the town becames more than 50,000 persons. At present the total municiapal area is divided in 40 wards. An elected body of public representatives is functioning at present and a municipal commissioner has also been appointed .

Financial position of the municipal council has always remained sound. As per 1981 accounts of the council the total receipt was Rs. 54.51 lakh and the expenditure for this year had been 49.71 lakh. The imprtant source of income of the council is octroi. As there had been surplus budget in the coucil it has been able to spend a handsome portion of the budget on public conveniences and health.

Table - 1 Employment Situation- Alwar Town

S.No	Year	No. of persons enrolled for jobs			No. of persons who got jobs
		Skilled	Unskilled	Total	
1.	1971	1099	7024	8123	590
2.	1975	2555	12594	15149	953
3.	1983	3452	18521	21973	866

17. There is no sewerage system in the town at present. A scheme is now being prepared for providing sewerage system for the town. There is no covered drainage system in the town. Disposal of rain and waste water is mostly done through open drain age, which is about 200 kms in length. The waste water is disposed in the open fields. The garbage is collected in garbage-bins placed at a number of places in the town and is disposed in trenches and pits in the remote areas.

18. In order to ensure planned development of the city a draft development plan has been prepared by the State Town Planning Department. The plan provides for a 20 year perspective with 1981 as the base year and 2001 as the horizon year. The projected population for Alwar town for the horizon year 2001 has been taken as 3.85 lakh. According to surveys conducted by the Town Planning Department in 1981 Alwar municipal area covers about 40 sq.km or 9,375 acres of land of which only 2,675 acres or 28% is the Developed Area out of total developed area approx. 49% is under residential use. 17% under public and Semi Public uses, 13.6% under circulation, 8% under Industrial use, 7% under Trade and Commerce less than 1% under Government offices and remaining 4% under open spaces and recreational use (Table- 1).

19. It has been estimated in the plan that in order to house a population of 3.85 lakhs by 1991 land envelope of about 15,285 acres shall be required. Out of this total area about 12,130 acres would be developed area. Due care has been taken in the plan for expansion of

Existing Land use- Alwar 1981

S.No.	Use	Area in acres	% age of Developed areas	% age of urban area
1.	Residential	1310.0	48.98	38.76
2.	Commercial	190.0	7.10	5.62
3.	Industrial	220.0	8.22	6.51
4.	Governmental	200.0	.75	0.59
5.	Recreational	110.0	4.11	3.25
6.	Public and Semi public	460.0	17.20	13.61
7.	Circulation	365.0	13.64	10.80
	Developed Area	2675.0	100.00	79.14
8.	Agriculture	320.0	-	9.47
9.	Govt. Reserved Area	235.0	-	6.95
10.	Other vacant and undeveloped land	150.0	-	4.44
	Existing Urban Area (Urbanised Area)	3380.0	-	100.00

industrail and governmental activities which are likely to be shifted from Delhi as per policies formulated in the NCR Plann. It has been assumed that in 2001 AD, the working force may constitute about 35% of the total population as against the present 25%. As Alwar is going to cater to the major share of Industrial development in NCR, it is expected that 40% of the total working force would be engaged in industrial activities by 1991.

20. Alwar has enough potentialities to promote tourism. It is situated midway on Delhi-Jaipur line of Western railway and is almost equi-distance from Delhi, Agra and Jaipur, the places of tourist interests. The city is dominated by a fort situated on a big conical hill and is backed by range of hills. The city a place, separated from the base of hills by Sagar, a picturesque tank, consists of a group of buildings in different styles. There is a museum in a portion of this palace where a collection of manuscripts and paintings are available. The museum gallary has a valuable collection of Mughal and Rajasthani paintings. Besides these places within the city, there are a number of places of tourist interest in the environs of Alwar. Famous games sanctuary of 'Siriska", Pandupole, Bharathari, Paebrikesh are within 30 miles, whereas Siliserh lake, Jaisamand lake, Vijay Mandir lake etc are on the outskirts of the city, endowed with beautiful natural hilly setting. Proper development of infrastructure and places of tourist interest in Alwar and in the region can give boost the tourism activities in the region. It may function as an ideal tourist resort to the inhabitants of Delhi apart from being a place of interest for the Foreign Tourists.

Table.3 Occupational Structure-Alwar Town

S.No.	Categories	Workers 1971 %(% in brackets)			Workers (% in brackets) 1981		
					Total	Male	Female
1.	Cultivaters	1193 (4.75)	996	197	1639 (4.21)	1353	286
2.	Agricultural laboures	565 (2.25)	466	99	369 (0.95)	288	81
3.	Livestock,Drchards and allied activities	152 (0.60)	140	12			
4.	Mining and quarring	43 (0.17)	41	2			
5.	Manufacturing,processing Servicing and repairs						
	a. Household Industry	1917 (7.63)	1648	269	1206 (3.09)	1002	204
	b. Other than housshold industry	2740 (10.91)	2694	46			
6.	Construction	1112 (4.43)	1101	11			
7.	Trads and commerce	5296 (21.08)	5197	99			
8.	Transport storage and communication	1909 (7.60)	1874	35			
9.	Other services	10192 (40.58)	9185	1007	35756 (91.75)	33756	2002
	Total workers	25119 (25.02)	23342 (42.61)	3686 (8.08)	38970 (26.73)	36397 (45.49)	2573 (3.21)

Table 2 Family size, Sex-Ration and literacy-Alwar Town

Year	Family Size	Sex Ration	Literacy Males	Literacy Females	Literacy Total
1961					
1971	5.7	835	59.57	33.10	47.52
1981	5.6	834	68.05	41.04	55.93

MINUTES OF THE FIFTH MEETING OF THE PLANNING COMMITTEE HELD ON 26TH MAY, 1986 AT 11 A.M. IN COMMITTEE ROOM *E*, VIGYAN BHAVAN, NEW DELHI

A list of the Members and other officials who participated in the meeting is annexed.

Welcoming the new Members the Chairman introduced Shri A.S. Wakhle, Deputy Director General, Department of Telecommunication, Ministry of Communication, Shri Ganga Das, Secretary, Lands and Buildings, Delhi Administration and Shri D.P. Gupta, Chief Engineer, Department of Surface Transport, who have become Members in place of S/Shri B.M. Khanna, S.C. Vajpeyi and L.R. Kadiyali respectively.

The first item of the Agenda, namely, the Draft Interim Plan, was taken up. While introducing this item the Chairman mentioned that the interim plan is not based on the conventional land use plan that is prepared. He explained that the draft interim plan was modelled on the structure plans. However, care has been taken to see that the draft plan follows closely and covers adequately the elements mentioned in the Act regarding the contents of the regional plan. He suggested that the summary of the policies may be taken up one by one for consideration and wherever necessary the detailed write-up on each of the policy element may be referred to. This was agreed to and the sub-items were taken up, discussed and decided as follows :-

(1) Objectives of the Plan

All the Members were unanimously in agreement with the objectives as detailed in the introduction.

(2) Perspective

The perspective of 2001 for the interim plan was approved. However, Shri Gambhir suggested that for the Comprehensive Plan the perspective may be kept as 2010. He felt that it would be necessary to have a longer perspective for the Comprehensive Plan. The Members generally welcomed the suggestion and desired to know whether a similar exercise was being made for the Delhi Master Plan also. It was decided that it would be worth considering whether it will be feasible to have a longer perspective for the Comprehensive Plan.

(A) Population Policy

The three policies suggested in the draft interim plan were discussed. Shri Mathur from Rajasthan felt that the population assigned for the DMA towns were on the high side. He felt that since the other locational policies etc., suggested for the DMA area would result in restricting the growth of such activities in DMA towns, a lesser population target should be proposed. The Chairman, however, pointed out that the strategy was to keep the growth of the DMA towns at the present rate and while curbing the rate of Delhi we would promote the growth of the outlying area. He stated that even for maintaining the status quo in the DMA towns it would be necessary to adopt certain restrictive measures as the curbing of growth proposed for Delhi would give a phillip to more growth in the DMA towns than experienced in the past. It was mentioned that the population policies suggested in the draft interim plan follow the decision already taken in this regard in the Board. The policies were approved.

(B) Settlement Pattern

The Members from Uttar Pradesh suggested that the assigned population indicated for the 8 selected towns should not be rigidly enforced but some flexibility should be allowed catering to the local conditions and situations. The Chairman pointed out that the population figures assigned for each town was necessary for purposes of preparation of the Plan etc., for these towns as a target to be achieved. However, the actual achievement of these will depend upon a variety of factors and it may be a little more or less than the target. Some Members suggested that the detailed 4-tier systems of settlements may be worked out in the interim plan itself. It was pointed out that the interim regional plan will not be in a position to go into such details and these will have to be worked out by the respective State Governments for their sub-regions. However, it was decided that a sentence will be added mentioning the remainder of the projected urban population of the region, after what is accommodated in the Delhi U.T., DMA towns and the priority towns, that will be accommodated in the intermediate towns in the hierarchichal pattern.

(C) Policy Regarding Economic Activities

E.P. 1 : Locational Policy for Industries

Shri J.C. Chopra pointed out that the restrictions and controls as applicable to U.T. of Delhi should not be applicable to DMA towns

because the core area and the peripheral area have different growth pattern. He also stated that DUA and DMA should be considered as separate units and hence locational policy pertaining to economic activities should not be the same for DUA and DMA. He was against restricting economic activities in DMA. Shri J.C. Gambhir explained that based on past experience it is always desirable to restrict certain activities than suggesting shifting of activities away from Delhi. He explained that while preparing 1962 Delhi Master Plan it was proposed to develop the peripheral towns so as to improve the situation in Delhi but by 1981 the position has completely changed and now one should not think of allowing induced growth in the pheripheral towns (DMA) but should only think of restrictions in the Delhi Urban Area and DMA and induced growth in the neighbouring region. The Chairman added that the 1962 plan envisaged restrictions on location of large and medium scale industry in Delhi and recommended only the location of small scale industries. These had resulted in the industries being located on the door steps of Delhi with the pressure on services in Delhi continuing to increase. Shri Ganga Das mentioned that another reason for concentration of economic activities in Delhi and the DMA was Delhi being the seat of power it was easy to get licences, power connections, marketing facilities etc. The taxation structure in Delhi and within the neighbouring States played a major role in the location of industries. Shri Duggal stated that the Haryana Government has developed plots in Faridabad, Gurgaon and other towns but industries from Delhi are not shifting and it was necessary to adopt measures which would force the industries to move out of Delhi. Shri A.P. Singh added that if the shifting has to be done from Delhi to its door steps no tangible result could be achieved and that it was necessary to take them away from Delhi and it would be ideal to locate them in the selected towns in the region. He pointed out that to have a control and check on the growth of Delhi, one has to go through the fiscal measures & revise the tax structure so that it will be un-economical for industrialists to continue in Delhi. Shri Valiamparampil stated that if the population from the core area has to be shifted, the land-use regulations has to be strictly administered. He cited the case of Karol Bagh which was essentially a residential area being converted from residential to commercial and then to industrial area. He also stated that the encroachment on public land should be stopped. The Chairman stated that these are matters to be looked into by the local authorities concerned.

Shri Gambhir re-iterated that except for the State boundaries the whole DMA has merged into one adjoining settlement of DUA; that there should not be any difference between DUA and DMA while deciding policies for controls and disincentives. He pointed out that the policy statements should indicate specific measures to be taken and bind-down the participating States and U.T. of Delhi for its implementation. Shri Gambhir felt that the proposal for shifting all non-conforming industries occupying more than 500 square metres of floor space would be difficult to achieve. Instead, he mentioned that an exhaustive exercise had been carried out in the DDA and the revised Master Plan has identified certain industries for shifting outside their existing locations. He suggested that they could be considered for shifting outside Delhi. Shri Ganga Das stated that the peripheral areas of Delhi which have not been planned properly was developing in a haphazard manner and it was necessary totake steps for orderly and balanced development of the entire DMA. Shri D.P. Gupta was in agreement with Shri Gambhir. The Chairman explained the exercises involved in the preparation of the regional plan. Shri Gambhir re-iterated that shifting of any activities/industries is difficult, but restriction on location of such activities would be more successful. Shri A.P. Singh felt that disincentives will make even the existing activities to shift to other places.

A question was raised regarding the policies to be adopted with regard to the informal sector. It was pointed out that the informal sector played a prominent part in the growth of the cities as well as in the growth of un-authorised colonies. The Chairman stated that while the role of the informal sector is evident it was, however, not amenable to direct control by any policy formulations. By definition this sector was not licenced or subject to any control. It had been demonstrated that the informal sector had both forward and backward linkages with the formal sector and the curbs on the formal sector will inevitably affect the informal sector. Apart from this, the only other restriction that could be imposed on the informal sector is strict enforcement of the land use policies. However, in the present circumstances where mixed land use is being advocated, these restrictions may not be an effective instrument in curbing the growth of un-wanted informal sectors.

The Chairman traced the history of the approach to the DMA. He felt that the activities in the DMA towns cannot be stopped abruptly. He agreed with Shri Chopra that the DMA towns are not comparable on all fours with the DUA in terms of both social and physical infrastructural

facilities such as communications, power, education, health, entertainment etc., activities. However, the DMA towns have their own propensity and potential of growth merely because of their nearness to Delhi. He re-iterated that the policy measures suggested in the draft interim plan took into account both these factors and he drew attention to the specific provision regarding the controls within DMA made in the policy formulations. The approach has been that in the case of DMA whatever is permitted in the DUA will also be permitted there with the additional provision that decentralisation from the DUA to DMA would be encouraged in selected areas.

After detailed discussion it was decided that in the locational policy for industries in the case of Delhi U.T. in E.P. 1(a)(ii) shifting of industries would be restricted to those identified for such shifting in the revised Delhi Master Plan. With regard to the locational policy of the small scale industries it was felt that a further restriction should be imposed and only those small scale industries which employ 20 or less, be permitted in the DMA, apart from those small scale industries which will provide for or serve the consumer needs of Delhi.

E.P. 2 : Locational Policy for Central Government and Public Sector Offices

The policy suggested was approved.

E.P. 3 : Locational Policy for whole-sale and

The proposals contained under this head were discussed along with the proposals for location of industries. There was a detailed discussion regarding the taxation structure, transportation facilities, the availability of market etc. Shri Gambhir re-iterated that more emphasis should be paid on restricting future growth rather than shifting the existing ones. It was pointed out that the DDA had carried out exhaustive studies regarding the whole-sale and distributive trades and had identified many trades where only 20 per cent of the commodity is consumed in Delhi, the rest being re-exported. It was unanimously felt that policies suggesting merely shifting of trades will not succeed unless they are coupled with adequate proposals in the tax sector. In this connection Shri Duggal mentioned about the proposal for a consignment tax which would effectively curb the present tendency for many manufacturing units to locate their head offices in Delhi so as to take advantage of low tax structure in Delhi. After detailed discussion it was decided that it would be necessary

to include in the draft interim plan certain specific measures in the taxation sector so as to bring about the desired objective. It was decided that a paper on this will be prepared by Shri Duggal and forwarded to the Board by the 30th May, 1986. These and other similar proposals received from the State Governments will be discussed in a meeting of the Planning Committee on the 10th of June, 1986. The Excise and Taxation Commissioners of the three States and the Delhi U.T. will be specially invited in this meeting.

(D) Policy Regarding Land Use

L.P. 1 to 3 : The policies suggested were approved.

L.P. 4 : Shri Gambhir stated that in urban areas also food processing centres will come up. So it should not be stated that only in rural areas such activities should be allowed.

L.P. 5 : The policy suggested was approved.

L.P. 6 to 10 : The policies suggested were approved.

L.P. 11 : The Chairman mentioned that the figure for additional population in DUA be read as 30 lakhs and NOT 55 lakhs. As regards policy for land for urban development, it was pointed out by the Members that the density varied from town to town depending upon the potentials and the characteristics. It was decided to add a sentence that the State Government will prepare Master Plans for the towns keeping in view the policies indicated.

L.P. 12 to 21 : The policies suggested were approved.

L.P. 22 : Shri Gambhir was of the view that the proposed green buffer should be shown on the map. The Chairman mentioned that that was the intention.

L.P. 23 to 27 : The policies suggested were approved.

(E) Transport and Telecommunication Policies

T.P. 1 : Members pointed out that the suggestion pertaining to NH 24 covers Delhi-Ghaziabad only. They desired that the suggestion should pertain to the whole stretch, i.e., Delhi-Hapur. This was accepted.

T.P. 2 to 4 : The policies suggested were approved.

T.P. 5 to 16 : The policies suggested were approved. Shri Valiaparampil pointed out that conversion of metre gauge line into broad gauge line has not been approved as a policy. Hence, the suggestion to convert Delhi-Alwar line to broad gauge might not be accepted by the Transport

Ministry. After detailed discussion, it was agreed that the relevant policy statement would be reworded to indicate that the line capacity should be increased. Shri Gambhir wanted that "mass transport for Delhi" and "metropolitan terminals" should also be included in the Policy Statement.

Policy for Telecommunication Facilities in the NCR

T.C.P. 1 : Shri Wakhle explained that to meet the objectives as contained in the agenda paper in respect of 20 towns, the DOT had prepared a plan for Rs. 210 crores to be spent during the Seventh Plan period. The Chairman explained that the intention was that the objectives mentioned in the policy paper were to be achieved by 2001. Shri Wakhle stated that if the objectives were not required to be met rigidly by 1990 the requirements of funds for the Seventh Plan could be further reduced. ~~The Chairman stated that the policies indicated in the paper may supplement the beam radiation network in the Region and reduce the pressure on the transportation arterios proposed in the plan.~~ He also mentioned that keeping in view the resource constraints instead of taking up all the towns if we concentrate on a few towns and provide/upgrade the telecommunication facilities to the desired level, this would result in achieving the National Capital Region objective.

(F) Policy for Physical Infrastructure

I.P. 1 to 4 : The policies suggested were approved. It was suggested that an integrated Master Plan should be prepared for water supply, drainage and power for all the Delhi Metropolitan Area and priority towns.

It was agreed that the following sentences may be deleted :

I.P. 5: "It is suggested that as far as generation is concerned, the fund required for the same should be met from the normal State plan"

I.P. 6 : "In order to make rural areas attractive for the urban dwellers, it is suggested that the domestic rates for rural areas should be much lower than that of urban areas"

The "Financing of Plan" will be discussed in the next meeting of the Planning Committee.

Shri Yadav informed the Members that HUDCO has earmarked Rs. 25 crores (for 1986-87) for NCR area for housing and urban development projects. He was requested to supply copies of guidelines in this regard and also a note giving details of HUDCO financed schemes in any of the towns in the NCR for circulation among the Members of the Committee.

AGENDA ITEM NO. 2

Subject : Examination of location of major projects in the NCR by the Board

Shri Gambhir explained the background leading to the selection of the site at Tikrikalan for the LPG Bottling Plant. Because of the nature of activities involved, Members felt that no housing activity should be allowed in the vicinity of the project. From safety point of view, some Members suggested that large chunk of land around the Plant should be acquired and kept vacant. It was also felt that the Board should have been approached by the IOC before actually commencing the work on the site.

However, it was agreed after detailed discussion that the LPG Bottling Plant may be allowed to be located in the selected site.

The meeting ended with a vote of thanks to the Chair.

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No. K.14011/27/86-NCRPB
NATIONAL CAPITAL REGION
PLANNING BOARD

C Wing, Nirman Bhavan
New Delhi - 110 011
Dated the 29th May, 1986

Copy forwarded for information and appropriate action to all the Members of the Planning Committee.

[Mrs. V.R. Sundaram]
Deputy Director
Tel: 3018743

ANNEXURE

PRESENT

1. Shri M. Shankar, Member-Secretary — Chairman
National Capital Region Planning Board

2. Shri J.K. Duggal, Commissioner & Secretary
Town & Country Planning, Government of Haryana

3. Shri A.P. Singh, Secretary
Housing & Urban Development, Govt. of U.P.

4. Shri N.S. Johri, Chief Town Planner
Government of U.P.

5. Shri B.N. Singh, Joint Secretary
Housing & Urban Development, Govt. of U.P.

6. Shri Ganga Das, Secretary
Land & Buildings, Delhi Administration

7. Shri H.S. Mathur, Chief Town Planner
Government of Rajasthan

8. Shri J.C. Chopra, Chief Town Planner
Government of Haryana

9. Shri H.K. Yadav, Chief (Special Projects)
Housing & Urban Development Organisation [HUDCO]

10. Shri A.S. Wakhle, Deputy Director General
Department of Telecommunications
Ministry of Communications, New Delhi

11. Shri S.P. Mital, Assistant Director General
Department of Telecommunication
Ministry of Communication

12. Shri J.C. Gambhir, Director (Planning)
Delhi Development Authority

13. Shri Prakash Narayan, Deputy Director (PPW)
Delhi Development Authority

14. Shri V.A. Valiaparampil, Joint Adviser (T)
Planning Commission

15. Shri D.P. Gupta, Chief Engineer(Planning)
Roads Wing, Department of Surface Transport

16. Shri B.K. Arora, Assistant Town & Country Planner
Town & Country Planning Organisation, New Delhi

17. Shri T.K. Chatterjee, Regional Planner
NCR Planning Board

18. Smt. V.R. Sundaram, Deputy Director
NCR Planning Board

19. Shri V.K. Thakore, Senior Research Officer
NCR Planning Board

20. Shri R.P. Rastogi, Associate Regional Planner
NCR Planning Board

21. Shri K.L. Sachar, Finance & Accounts Officer
NCR Planning Board

22. Shri J. Nagarajan, Research Officer
NCR Planning Board