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IMMEDIATE

NO.K-14011/37/87-NCRPB
N.C.R. PLANNING BOARD
7TH FLOOR, 'B' WING,
JANPATH BHAVAN, JANPATH,
NEW DELHI - 110001

Subject: Sixth Meeting of the NCR Planning Board being
held at 11.00 A.M. on 21.7.1987.

The Sixth Meeting of the NCR Planning Board will
be held at 11.00 A.M. on Tuesday, the 21st July, 1988,
at Committee Room 'E', Vigyan Bhavan, New Delhi. The
meeting is likely to continue in the afternoon also.

2. Kindly make it convenient to attend the meeting
and kindly confirm your participation.

3. It is proposed to discuss and approve the Draft
Regional Plan of National Capital Region in the meeting
which is being sent separately.

(K.K. BHATNAGAR)
Member-Secretary

To

All Members, Co-opted Members
and Special Invitees

MINUTES OF THE 5TH MEETING OF THE
NATIONAL CAPITAL REGION PLANNING BOARD
HELD AT 11 A.M. ON 17TH FEBRUARY, 1987 AT
COMMITTEE ROOM *C*, VIGYAN BHAVAN, NEW DELHI

The list of Members and other participants who attended the meeting is annexed.

Welcoming the Members and other participants, the Chairman drew the attention of the meeting to the guidelines indicated by the Prime Minister for planning the National Capital Region, while inaugurating the first meeting of the Board on 4th June, 1985. She stated that the Interim Development Plan (IDP) prepared by the Board, setting out the broad policies as indicated by the Prime Minister, had been endorsed by the PM who had desired a presentation of the Plan by the Board before him. She impressed upon the Members that with the preparation and the approval of the IDP a great deal of responsibility had been enjoined on the Board to ensure that integrated and planned development of the region is undertaken on the lines of the policies and proposals envisaged in the IDP. Referring to the preliminary exercise and the time involved in the preparation and finalisation of the draft Regional Plan, she stated that the draft Regional Plan was expected to be ready by the middle of 1987. She emphasised the need for ensuring that locational and other decisions involving the areas comprised in the region taken by the State Governments and the implementing agencies during the intervening period (i.e., from the date of approval of the IDP till the decision of the Regional Plan 2001) do not frustrate or jeopardise the NCR objectives. She requested for the full cooperation of the Members in achieving this. While agreeing that success of any plan largely depended upon the availability of minimum essential funds, she informed the Members that the question of allocation of additional funds both in the Central Sector and the State Sector for implementing the NCR Schemes during the Seventh Plan period had already been taken up with the Planning Commission etc. She impressed upon the participating States the need for strengthening the existing implementing agencies and gearing them up fully to take up the NCR Schemes. She hoped that the State Governments would keep themselves in a full state of preparedness to take up a planned and coordinated development of the Region without losing any time. She concluded her opening remarks by saying that the main intention of the meeting was to discuss in detail the action taken by the Members in regard to the implementation of the Interim Development Plan proposals.

Agenda Item No.1

Audio-visual presentation of the
Interim Development Plan

The Members viewed the audio-visual presentation prepared by the Board on the Interim Development Plan. The Chairman invited the Members to comment on the audio-visual presentation.

The Lt. Governor, Delhi, appreciated the facts and the picture brought out in the audio-visual presentation. He also stated that unless urgent measures are taken to save Delhi, the situation in future in Delhi will be very alarming. He pointed out that the development in the DMA towns has been much faster than the development

in Delhi. He suggested that instead of deploying the available limited resources in a large number of places, the State concerned could select one town each and, thus, concentrated development of 3 towns in the entire Region could be undertaken. He also observed that if the quality of life in the 3 selected towns is brought up to the same level as that of Delhi, the NCR objective could be achieved to a great extent. He suggested that the population figure of 112 lakhs assigned for Delhi by 2001 A.D., should be reviewed every 5 years in order to ascertain the trends of population growth and to take suitable corrective measures. Such a review would also help in arriving at a more realistic figure of the eventual population of Delhi by the year 2001 A.D. He also emphasised the need for providing faster moving railway connections between Delhi and NCR towns and the need to improve the telecommunication facilities.

The Minister of State for Railways, while appreciating the facts brought out in the audio-visual presentation, drew the attention of the meeting to the point raised by him earlier regarding the need to extend the jurisdiction of the proposed metropolitan transport authority to the NCR boundaries. He pointed out that in the audio-visual presentation, no mention had been made about the counter-magnet concept. He stated that the intention of associating the Chief Minister of Madhya Pradesh as a special invitee to the NCR Board meeting was to consider the possibility of helping to de-congest Delhi by purposefully diverting certain activities in counter magnet towns like Gwalior which have the potential to absorb such activities. In this connection, he also stated that the Railways were thinking of reducing the journey time between Delhi and Gwalior to two and a half hours in the near future. He, therefore, suggested that this item should be taken care of while finalising the audio-visual presentation.

Secretary, Ministry of Urban Development pointed out that the intention of placing the audio-visual presentation before the Members of the Board was to invite views and suggestions for improvement in the presentation so that these could be incorporated, wherever possible, before it is finally presented to the P.M.

The Chairman assured the MOS for Railways that his suggestion would be taken care of.

Agenda Item No. 2

Confirmation of the minutes of the 4th meeting of the Board held on 29th August, 1986

The minutes of the 4th meeting of the NCR Planning Board held on 29th August, 1986 were confirmed.

Agenda Item No. 3

Note on action taken on the minutes of the 4th meeting of the Board

The Board noted the action taken on the minutes of the 4th meeting of the Board as reported.

Agenda Item No. 4

Details of business transacted by the Planning Committee, Personnel Group and Project Sanctioning and Monitoring Group

The Board noted the business transacted by the Planning Committee, Personnel Group, the Project Sanctioning and Monitoring Group etc.

Agenda Item No. 5

Action Plan for implementing the IDP and review of the preparation of the Draft Regional Plan

Shri B.N. Singh gave a brief resume of the items included in the Note. He stated that the IDP contained various policies and these had been explained in the audio-visual presentation also. He stated that in regard to population policy and settlement pattern, the participating State Governments have to prepare development plans or review/revise the existing master plans of the selected priority towns in accordance with the population assignment for 2001 already approved by the Board because such plans might have been prepared for 1991 or 2001 and for different population assignments ; there was also a need for up-dating the development plans for the priority towns because they would have a bearing on the statutory document viz., the Regional Plan being prepared by the Board. He stated that the Interim Development Plan indicated the locational policy for economic activities but certain action will have to be taken by the participating States till the statutory Regional Plan becomes operative. Since the policy measures envisaged in the IDP required preparatory action in respect of location of economic activities, industries, public sector offices, whole-sale distributive trade and commerce, any decision on these aspects should be in consonance with the policies contained in the IDP. The participating States are also required to develop industrial estates and work out a package of incentives which could be offered for induced development in the industrial sector. In order to absorb such activities and also to offer suitable space/areas for offices that may be shifted out of Delhi, the State Governments have to take up a lot of preliminary work such as acquisition of land, development of land, provision of infrastructural facilities etc. Like-wise, for the distributive trade and commerce, the State Governments will have to take up the survey of potential of all the identified towns so that necessary market yard facilities and related infrastructure could be developed. As regards fiscal aspects, he pointed out that the policy measures set out in the IDP had been brought to the notice of the Central Ministries of Home Affairs and Finance and the Board would be able to communicate to the State Governments the decision taken on hearing from these Ministries. In regard to land-use, he stated that while preparing the master plans, care has to be taken to implement the policy regarding preservation of eco-system, green buffer, recreational areas, open spaces etc. While referring to the transport and the telecommunication policies, he stated that the kinds of facilities which would be needed particularly in the field of telecommunications have to be worked out by the concerned Central Ministries in consultation with the participating State Governments. As regards physical infrastructure like power, water supply, sewerage, solid waste management etc., in the last meeting, a suggestion was made by the Lt. Governor of Delhi that Sub-committees should

be constituted to look into the problem. Shri Singh pointed out that a number of study groups were already functioning and that they have been re-constituted with suitable modifications in their composition and functions to suit the requirements. The study groups would be in a position to work out the requirements of power, water supply, sewerage, etc., for DMA towns and identified priority towns in the NCR which will be available well in time before the draft Regional Plan is finalised.

Shri Singh also reported the following action taken by the Board's Office in relation to the preliminary aspects of the preparation of the draft Regional Plan:-

a) The National Remote Sensing Agency, Hyderabad had been requested to supply landsat imageries and the Survey of India had been requested to supply aerial photographs for the NCR in order to prepare the existing and proposed land use plan. The aerial photographs will be interpreted by the Defence Terrain Research Laboratory of the Ministry of Defence to help prepare the base maps and also the land-use analysis of the region. This work had already commenced and was expected to be completed within 6 months.

b) The Central Building Research Institute, Roorkee, had been entrusted with the study to develop a computer model for evolving a cost and objective effective development model for the NCR. The work had already commenced and an indicative model would be ready in about 4 months' time.

c) With a view to conducting actual surveys such as origin and destination survey, traffic volume and direction survey etc. in the metropolitan region and in the National Capital Region, as a part of the traffic and transport inputs in preparing the regional plan, it had been decided to engage a professional consultant to complete the surveys, studies and analysis in 6 months' time. It was expected that the surveys would be completed in the first 3 months and the entire study would be completed in 6 months' time.

d) An investment proposal had been submitted to the Government indicating the requirement of funds during the Seventh Plan period both in the Central Sector and the State Sector. Only Rs. 35 crores had been provided in the Central Urban Development Sector to be released as Central assistance to the participating States for implementing the NCR schemes as matching share, in addition to Rs. 30 crores provided in the 3 State Plans. The question of securing additional funds was under consideration.

Secretary, U.D., while summing up the points made out by Shri Singh, stated that while the Board was in the midst of preparation of the draft Regional Plan, whatever physical data, in terms of land-use and other details, were required for such preparation were being collected and he hoped that the Board would be in a position to publish the draft Regional Plan by July, 1987; till the Regional Plan was published and given a final shape, whatever actions were taken at the State level should not be in conflict with what had already been incorporated in the IDP. He also emphasised the need for development of infrastructural facilities in the identified priority towns for induced development and preparation or up-dating of master plans of such towns.

He felt that these should be dovetailed with the proposals incorporated in the IDP. He invited suggestions and views of the Members on this item.

Shri P.P. Nayyar referred to the transport and telecommunication policy in the IDP and desired to know as to which Ministry would be responsible for constituting the unified metropolitan transport authority. It was discussed whether it would be a joint effort by the Ministry of Surface Transport and Railways. Secretary, U.D. stated that the Ministry of Urban Development, which had recently been made responsible for coordination and planning of urban transport, could also do the overall planning and coordinating function and promote the setting up of the unified metropolitan transport authority. It was decided that this may be examined further by the Ministry of Urban Development.

The Chief Executive Councillor (CEC) re-iterated his views on the policies contained in the IDP, especially those relating to location of industries and distributive and whole-sale trade and commerce. These activities located in Delhi had taken several years to develop and grow as a result of various facilities extended and these should not, in his view, be disturbed. Instead, the participating States could promote industries in their respective areas outside the Delhi Metropolitan Area by giving attractive incentives such as tax holidays, concessional price for land, cheaper electricity and water charges and immediate availability of telephone connections by linking them to Delhi's main exchange, low rate of interest, provision of basic infrastructure as well as social amenities and facilities, etc. He felt that it would be proper not to insist on the de-centralisation of wholesale trade in goods that were not being consumed in Delhi.

He felt that the change suggested in the tax structure in Delhi would have a de-stabilising effect on Delhi's economy and would not be beneficial. However, he supported the suggestion regarding levy of tax on consignments in Delhi. The CEC also stated that instead of re-structuring the existing towns in the NCR area, new towns with requisite infrastructural facilities comparable to those of Delhi should be developed to prevent migration of population to Delhi. Referring to the paucity of funds for implementing the NCR schemes, he suggested that the Board could float debentures, public loans etc., & enlist the assistance of the LIC, the General Insurance Corporation and the UTI as also the World Bank. He also suggested self-financing schemes for residential and industrial development. As regards the industrial policy for Delhi, he stated that only non-polluting small scale industries - mainly electronics - were now being permitted in Delhi. He also expressed his concern about the proposal to curb employment generating activities in Delhi and pointed out that un-employment was growing every day in Delhi. Referring to the proposal regarding rationalisation of taxes, he pointed out that the neighbouring States had already taken decisions to reduce sales tax on automobiles and electronic goods which would affect the revenue collection of Delhi U.T. He felt that such policies might not be favourable to Delhi U.T.

The Chief Minister of Madhya Pradesh referred to the suggestion made by him in the earlier meetings regarding the need for developing counter-magnets. He expressed his happiness over the developments in regard to the finalisation of the norms for identifying the counter-magnets beyond the NCR. He suggested

that instead of waiting for the preparation of the draft Regional Plan it would be better to undertake simultaneous study of suitability of the counter-magnet towns already identified in order of their priority. He extended the assistance of the State Government in conducting this study. He also urged that not only the towns neighbouring Delhi but also those in the neighbouring States such as Gwalior in Madhya Pradesh should be developed quickly as counter-magnets in order to achieve the objectives of the NCR Plan.

The CEC pointed out that the term 'counter-magnets' had been used for the first time and he wanted to know whether they would be in the DMA or in the NCR or beyond it. Clarifying this point, Secretary, U.D., referred to the relevant provision contained in the NCR Planning Board Act, 1985 - Section 2 and also Section 8(f) - and pointed out that a counter-magnet, by its definition would be outside the DMA and the NCR. The Chairman added that Gwalior could be one of those counter-magnet cities. The Chairman also clarified that the intention of IDP for the N.C.R. was to identify and select a few towns in the region for priority development by upgrading the existing infrastructure and other facilities so that the quality and standard of life in those towns would be comparable to that in Delhi and by that process the in-migration into Delhi could be reduced. She clarified that in view of the magnitude of the investments involved, it was not the intention to develop new towns but to take up the development/upgradation of existing identified towns on priority basis.

While conveying the good wishes of the Chief Minister of Haryana for the success of the meeting, the Minister for Town and Country Planning, Haryana, indicated the suggestions and views of Haryana Government in regard to the implementation of the policies contained in the IDP approved by the Board. For achieving the main aim of reducing the pressure of population growth in Delhi by purposefully diverting the economic and other activities in the neighbouring towns, he suggested that heavy and medium industries should be diverted to DMA towns. For this purpose, the infrastructural and other facilities in these towns should be upgraded. The condition that location of any industry in the NCR should be approved by the Board should be removed so that there is free development of industries in these areas. Another important point raised by him was the shortage of power supply in Haryana. He suggested that the Central Government should increase the share of power supply to Haryana, should help increased generation of power in the State and, for that purpose, give necessary assistance to the State Government. Unless power supply in Haryana was improved, the present problems of Delhi would not be ameliorated. In regard to the pattern of financial assistance being extended by Central Government for implementing NCR schemes, he pointed out that the present level of assistance was very nominal and that for speedy implementation of the schemes and proper development of the areas in the neighbouring States the financial assistance should be increased and the rate of interest on loan assistance should be reduced.

Smt. Padma Seth, Minister of State for Urban Development, Government of Uttar Pradesh, appreciated the significant progress made by the NCR Planning Board towards achieving the NCR goals. Referring to the population assigned for Meerut, Hapur, Bulandshahr and Khurja, she stated that sufficient employment generating activities need to be attracted to these towns to absorb the expected additional work force. She stated that, for this purpose, attention must be paid to the creation of urban infrastructural facilities. She stated that the development potential of priority towns needs to be studied in depth before distribution of economic activities and the location of employment generating sources should be in consonance with the resources and entrepreneurial skills available in the towns. For shifting of activities, she stated that detailed identification and specification of office space and infrastructural requirements should be made available to the concerned State Governments quickly. This would enable the respective town agencies to revise their master plans and develop the necessary space and infrastructure to assimilate such activities. Large and medium scale industries which provide bulk employment opportunities should be set up in the sub-region and to attract such industries suitable economic incentives on the pattern adopted for industrially backward districts should be considered. Central Government should consider allocating to UP adequate share of power generated in U.P. so that not only the present power shortage is met but power required for future entrepreneurs willing to set up their units in U.P. could also be provided. Referring to the pattern of tax structure suggested in the IDP, she emphasised the need to implement the same in order to realise the objectives. As regards the pattern of financial assistance, she stated that development schemes like roads constructions, sewerage, water supply etc., which are non-remunerative, needed to be completed on a priority basis and for these non-remunerative schemes, the financial assistance should be in the form of grant instead of loan. She announced that for the successful implementation of the policies of the NCR Planning Board, the U.P. Government had created a Steering Committee under the Chairmanship of the Chief Secretary, U.P., to coordinate and oversee the implementation of the proposals within the framework of the NCR plan and added that a planning cell in the Town and Country Planning Department was being set up for preparing the sub-regional plan. She assured the fullest cooperation of the U.P. Government in this partnership venture.

Shri Sujan Singh Yadav, Minister of State for Urban Development, Government of Rajasthan, pointed out that the question of reducing the pressure of growth of population and consequent pressure on civic amenities in Delhi has been causing concern to the Govt. of India and efforts had been made to reduce the same. He mentioned that about a decade ago, the Government thought of regional development to overcome the problems of the national capital. With the enactment of the National Capital Region Planning Board Act, 1985, new and concerted efforts had been initiated. The keen interest shown by the P.M. in this matter had given an impetus to make special efforts to achieve the aims and objectives of the National Capital Region concept. If the objective is to be achieved, the present centralisation of economic activities in the capital should be purposefully dispersed over the region. If this is not done, it will result in not only increased activities but also growth of population in the capital. For this purpose, regional towns have to be developed.

In future no new industrial or trade and commercial activities, offices of public sector undertakings etc. should be located in Delhi. For this purpose suitable guidelines should be issued by the Board which should also review, from time to time, the progress made in this regard. The future economic development has to be in places away from the capital in the identified towns in the NCR. For this purpose incentives are necessary. If the region is adequately developed, day to day commuting to Delhi would be reduced. In this connection he mentioned the towns of Alwar, Behror, Khairthal, Tijara, Sahjahanpur and Bhiwadi as suitable towns for priority development in Rajasthan. The IDP has recommended that for locating industrial establishments away from Delhi, incentives should be offered and the Central Government's industrial policy laying down certain eligibility criteria for financial assistance should be reviewed. He mentioned that at present industries which have already invested Rs. 30 crores would not be eligible for any further assistance. This would act against the policy for development of industries in other areas in the National Capital Region and in fact, this has affected the development of Alwar and Bhiwadi towns. He also suggested financial assistance in the form of grants for new industries in the areas to be developed in the National Capital Region. He invited the attention of the meeting to the proposals submitted by Rajasthan Government for financial assistance during the Seventh Plan amounting to Rs. 208 crores and stated that during the current financial year the financial assistance required was Rs. 47 crores. He also stated that in the Interim Development Plan for the Rajasthan sub-region, Rs. 131 crores investment was being proposed. He emphasised the need for making available adequate financial assistance for Rajasthan sub-region to finance the schemes during the current financial year. He also stated that financial assistance for certain non-remunerative schemes has to be given in the form of grant. For the purpose of developing industrial townships, it is important that necessary steps are taken to improve the telecommunication facilities in the Rajasthan sub-region such as replacement of old exchange, provision of automatic exchanges etc. He referred to the present shortage of power supply in the Rajasthan sub-region and requested that necessary financial assistance should be provided for generation and transmission of power supply to meet the NCR scheme needs. As regards transport, he referred to the proposal for Delhi-Alwar broad gauge railway line included in the Interim Development Plan and suggested that this scheme should be implemented on top priority basis. He also suggested that Bhiwadi, which is an industrial area, should be linked through railways for easy movement of raw materials etc., he specifically suggested the 25 Km. stretch of Bhiwadi-Rewari linkage through railways. As regards road transport, he urged that NH-8, - Delhi-Behror should be developed as M-1 on priority basis. In addition, other roads in the sub-region should also be upgraded. He extended the fullest cooperation of the State Government of Rajasthan to ensure the successful implementation of the policies and proposals contained in the Interim Development Plan for the balanced development of the National Capital Region.

The Chairman requested Shri Raja Chelliah, Member, Planning Commission, to throw some light on the latest thinking in the Planning Commission in regard to the provision of resources for the development of NCR.

Shri Raja Chelliah stated that immediately after the 3rd July, 1986 meeting of the Board the whole question was taken up by the Planning Commission and the Member-Secretary had presented the proposals before the Deputy Chairman and other Members of the Planning Commission. He stated that in that meeting it was felt that in view of the constraint of resources, the perspective of the plan should be narrowed down at least to start with and, instead of 8 priority towns, the efforts should be concentrated on 3 selected towns - one town in each participating State during the current Plan. The main reason for this suggestion was the resource crunch and the need to create large agglomerations where high standard of facilities could be created. He also stated that the Commission had looked into the transport plans etc., and that some tentative figure had been talked about; but no final decision had been taken. He also indicated that the Planning Commission was awaiting a revised proposal from the Board on the basis of the suggestions made in the meeting. He suggested that while there could be no objection to list out 8 priority towns, 3 towns could be initially taken up for intensive development, as suggested by the Lt. Governor also. This could be submitted to the Planning Commission now. He indicated that the intention of the Planning Commission was to give some additional funds and the entire question would be reviewed when the Planning Commission takes up the mid-term review of the Seventh Plan. He also agreed with the CEC that policies which would seriously harm the economic interests of Delhi should not be advocated. He referred to the study on tax structure in the NCR entrusted by the Board to the NIPFP and suggested that the report should be awaited before a final view is taken. He also agreed with the CEC that some incentives in addition to the dis-incentives could be thought of in the region like income tax exemptions, backward area treatment for profits of Corporations etc.

Agenda Item No. 6

Consideration of the Conceptual Plan for Delhi - prepared by the Expert Group of DUAC

Secretary, U.D., explained the genesis of the conceptual plan prepared by the DUAC in connection with the formulation of the Master Plan for Delhi and stated that the views of the NCR Planning Board had been invited. The Planning Committee of the Board had examined the recommendations contained in the conceptual plan. He requested Shri B.N. Singh to briefly explain the divergencies and the views of the Planning Committee thereon. Shri Singh referred to the important recommendations relating to population assigned for Delhi, DMA and NCR towns. In this connection he also referred to (i) the definition of counter-magnet as contained in the NCR Planning Board Act; (ii) the planning options, viz., addition of 20 lakhs in the East of Yamuna falling in U.P. territory or addition of 10 lakhs each in North and South and South-West of Delhi and (iii) re-densification of the existing areas and urbanisation around Delhi. He also pointed out that according to the Planning Committee, the third alternative was more feasible and suitable. As regards creation of an apex body for Delhi U.T., he stated that the NCR Planning Board had already been constituted as an apex body and there was no need to create another. In regard to legislative frame for the DMA, it was felt that it might not be feasible.

As regards areas of environmental and historical importance, he pointed out that the IDP had endorsed the preservation of areas of environmental and historical value and the Planning Committee was in agreement with this recommendation. At this point the CEC requested the Vice Chairman, Delhi Development Authority, to explain the point of view of DDA. Shri Om Kumar stated that the Planning Committee's recommendations set out in the agenda note were similar to those proposed the DDA in the Perspective Development Plan for Delhi 2001 AD. Referring to the transportation pattern, he stated that a few additions may have to be made in the East-West corridor and stated that this must be taken up quickly because Delhi was getting choked up.

Summing up the discussion on this item, the Secretary, U.D., stated that the views which had been formulated by the Planning Committee with the supplementation as made by the Vice Chairman, DDA, could be communicated to the Government if the Board endorsed the recommendations. This was approved by the Members.

Agenda Item No. 7

Organisational Structure for Implementation of National Capital Region Schemes - Alternatives

Secretary, U.D., explained the organisational structure proposed in the Agenda Note for the implementation of the NCR schemes. He referred to the organisational chart which envisaged the appropriate organisational structure at the State level, laying down a 3 tier arrangement. He referred to the U.P. Minister's statement that a Steering Committee had already been set up in U.P. in this regard and stated that the other States could follow this example. He referred to the suggestion for setting up a Planning Cell and Sub-Region Area Development Authority so that an integrated view of all the schemes in the respective sub-regions could be taken. He also pointed out that a policy decision had already been taken in the Board to extend financial assistance to the tune of 50% of the expenditure involved, for setting up such Planning Cells. The Members accepted the proposals contained in the Note and the suggested Organisational Structure was approved, in principle.

Agenda Item No. 8

Revised Estimated 1986-87 and Budget Estimates 1987-88 under Plan and Non-Plan Heads of Accounts

The Board noted the contents and approved the proposals therein.

Agenda Item No. 9

Annual Statement of loans and advances for the year 1985-86

The Board noted the position explained in the note regarding the loans granted by the Board during 1985-86 for implementing the NCR schemes.

Agenda Item No. 10

Annual accounts of the Board for the
year 1985-86 and Auditor's Report thereon

The Meeting adopted the annual accounts of the Board for 1985-86 and the auditor's report thereon.

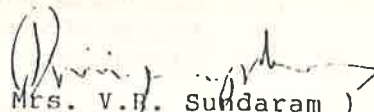
The meeting ended with a vote of thanks to the Chair.

NO. K-14011/39/86-NCRPB
NATIONAL CAPITAL REGION PLANNING BOARD
B WING, 7TH FLOOR, IOC BHAWAN,
JANPATH, NEW DELHI - 110001.

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New Delhi, dated the 6th April, 1987.

Copy forwarded for information and appropriate
action to all the Members of the Board.

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(Mrs. V.R. Sundaram)
Deputy Director

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LIST OF PARTICIPANTS WHO ATTENDED THE FIFTH MEETING
OF THE NATIONAL CAPITAL REGION PLANNING BOARD
HELD ON 17TH FEBRUARY, 1987, IN NEW DELHI

Members

1. Smt. Mohsina Kidwai
Union Minister of Urban Development Chairman
2. Shri H.L. Kapoor
Lt. Governor of Delhi
3. Shri Jagparvesh Chandra
Chief Executive Councillor
Delhi
4. Shri Madhavarao Scindia
Minister of State for Railways
5. Shri R.J. Chelliah
Member, Planning Commission
6. Seth Srikrishan Dass
Minister for Town & Country Planning
Haryana
7. Smt. Padma Seth
Minister of State for Urban Development
Uttar Pradesh
8. Shri Sujan Singh Yadav
Minister of State for Urban Development
Rajasthan
9. Shri D.M. Sukthankar
Secretary
Ministry of Urban Development
10. Shri E.F.N. Ribeiro
Chief Town Planner
Town & Country Planning Organisation
Delhi

Co-opted Members

1. Shri Motilal Vora
Chief Minister of Madhya Pradesh
2. Shri P.P. Nayyar
Secretary
Ministry of Surface Transport
3. Shri Rakesh Mohan
Adviser
Planning Commission

Other participantsGovernment of India

1. Shri S.T. Veeraraghavan
Joint Secretary
Ministry of Urban Development
2. Shri R.L. Pardeep
Joint Secretary
Ministry of Urban Development
3. Shri S.S. Narayanan
Adviser, MTP
Railway Board
4. Shri A.K. Goyal
Joint Director
Railway Board
5. Shri C.S. Rao
Deputy Secretary
Ministry of Urban Development

Haryana

Shri R.N. Prasher
Director
Town & Country Planning

Rajasthan

1. Shri P.B. Mathur
Secretary
Urban Development, Housing & Local Self Government
2. Shri H.S. Mathur
Chief Town Planner
3. Shri V.K. Rastogi
Deputy Secretary
Urban Development and Housing

Uttar Pradesh

1. Kunwar Fateh Bahadur
Joint Secretary
Housing and Urban Development
2. Shri N.S. Johri
Chief Town Planner

Delhi Union Territory

1. Shri Ganga Dass
Secretary
Lands & Buildings
2. Shri I.A. Khan
Secretary
Finance & Planning

Delhi Development Authority

1. Shri Om Kumar
Vice Chairman
2. Shri J.C. Gambhir
Director
Perspective Planning

NCR Planning Board

1. Shri B.N. Singh
Chief Regional Planner

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AGENDA ITEM NO.2

ACTION TAKEN ON THE MINUTES OF THE 5TH MEETING
OF THE NCR BOARD ON 17.2.1987

Agenda Item No.1 : Audio-visual presentation of the Interim Development Plan

The suggestion of the Minister of State for Railways for inclusion of counter-magnet concept in the Audio-visual presentation has been implemented and the Audio-visual presentation has been modified.

Agenda Item No.5 : Action Plan for implementing the IDP and review of the preparation of the Draft Regional Plan

The points mentioned for implementing the Interim Development Plan and also for the preparation of the Draft Regional Plan have been taken into consideration while preparing the Draft Regional Plan which is being presented to the Board for approval as Agenda Item No.3.

The question of setting up of the Unified Metropolitan Transport Authority has been referred by the Ministry of Urban Development to a Task Force set up by the Government.

The suggestion made by the Chief Executive Councillor, about floating of debentures/loans etc., to overcome the resource constraint for implementing the NCR schemes, it is submitted that the Central Government is empowered, under Section 22(1)(c) of the NCR Planning Board Act, 1983, to decide "other sources of funding" in consultation with the participating States and the UI of Delhi. The question of additional funds for NCR Schemes during the Seventh Plan period is under examination by the Government.

The Planning Committee had, in one of its meeting, suggested that a sub-group, consisting of chief level planners of the participating States and the Chief Regional Planner of the Board, should go into the details of the counter-magnet concept and finalise the norms for identification of counter-magnet areas. The Planning Committee had also felt that the selection of counter-magnet areas should not precede the preparation of the Draft Regional Plan. However, keeping in view the suggestions made during the meeting, a study on the

subject has been entrusted to the School of Planning & Architecture. The Study is expected to be completed by September, 1987 but suitable proposals on the subject are being included in the Draft Regional Plan.

The identification of offices to be shifted out of Delhi is being considered by Government and the recommendations of a Committee constituted for this purpose under the Chairmanship of the Cabinet Secretary is under examination by the Government.

Agenda Item No.6 : Consideration of the Conceptual Plan for Delhi - prepared by the Expert Group of DUAC

The views of the NCR Planning Board on the Conceptual Plan for Delhi prepared by the Expert Group of DUAC have been conveyed to the Government.

Agenda Item No.7 : Organisational Structure for Implementation of National Capital Region Schemes - Alternatives

The organisational structure for implementation of NCR schemes, as approved by the Board, is to be examined by the concerned State Government for and implemented.

AGENDA ITEM NO.3

Details of business transacted by the Planning Committee, Personnel Group and Project Sanctioning & Monitoring Group etc.

A copy each of the minutes of the meetings held by the Planning Committee etc. are given in the Annexure-I for kind perusal.

AGENDA ITEM NO.4

ANNUAL REPORT OF THE BOARD FOR THE YEAR 1986-87

According to Section 24 of the NCR Planning Board Act, 1985, the Board is required to prepare its Annual Report in each financial year giving full account of its activities during the preceding financial year and forward copies thereof to the Central Government, the participating States and Union Territory of Delhi. The National Capital Region Planning Board Rules, 1985 provide that the Annual Report for each year should be submitted to the Government by the 15th of May. As the Board's first meeting during the year 1987-88 is being held only in July, 1987, the Report could not be submitted earlier.

2. During the period of this Report, the Board met three times and in their meeting held on 17.2.87 the Board approved the Interim Development Plan, and action Plan for the preparation of Regional Plan. In this connection various Study Groups were constituted and many surveys and studies were undertaken which have been detailed in this Report. The details of grant-in-aid received from the Government and utilisation have also been given in this Report. However, the Accounts Audit Report for the year will be placed before the Board after the accounts are audited by the Auditors.

3. The Annual Report containing material as prescribed in the Rules is enclosed for consideration and approval of the Board.

ANNUAL REPORT
OF THE
NATIONAL CAPITAL REGION PLANNING BOARD
FOR THE YEAR
1986-87

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BRIDGE NOTE ON THE STATUS OF NCR PLAN
ANNUAL REPORT OF THE NCR PLANNING BOARD
FOR THE YEAR 1986-87

INTRODUCTION

1. The unprecedented growth of population of Delhi during the last few decades has become a matter of great concern to the Union Government. The need for containing the population growth of Delhi within manageable limit has become imperative. It is also clearly felt that the measures to contain Delhi's growth are to be taken outside Delhi at the Regional level rather than within it. It is, however, to be simultaneously seen that the measures to contain the population growth of Delhi not only do not adversely affect the overall quality of life in the capital, but also ensure that instead of curbing the population growth of Delhi, they do not become counter effective resulting in Delhi growing at a rate faster than before.

BACKGROUND

2. In fact, the Draft Master Plan for Delhi prepared in 1959 and the final Plan approved by the Government of India in 1962 had recommended setting up of a statutory NCR Planning Board, which would evolve measures to limit the population size of Delhi while simultaneously developing the Region, in an harmonised manner. Taking cognisance of this recommendation, the Government of India had set up a High Power Board in 1961 in the nature of an advisory body with the Union Minister of Home Affairs as its Chairman to coordinate the development of Region. This Board was subsequently reconstituted in 1973 under the Chairmanship of the Union Minister of Works & Housing with the Chief Ministers of Haryana, Rajasthan and Uttar Pradesh and the Lt. Governor of Delhi and other senior officials as members. As a result of the decisions taken in the meetings of the Board, the Central Town & Country Planning Organisation, Ministry of Works & Housing (now Urban Development) prepared a draft plan for the National Capital Region and was approved in 1973. However, this plan could not be implemented fully due to the absence of statutory status backing.

The basic aim and objective of the National Capital Region Plan was to keep within manageable limits the population and area of urban Delhi. It was, therefore recommended that the population converging into Delhi was systematically diverted to the ring towns which have potential to grow. The intention of the plan was to develop these ring towns as more or less self-contained units in matters of work places and residence. The plan advocated decentralisation of certain economic activities away from the Delhi metropolis into different towns within the Region and also to promote simultaneously a balanced development of the Region. The National Capital Region Plan had, therefore, envisaged dispersal of growth into the regional urban centres to achieve this objective, by curbing further concentration of job opportunities in Delhi through restriction on location of large industries in Delhi and diversion of selected Government Offices as well as some wholesale economic activities to self-contained 'ring towns'. The plan had also recommended formulation of an urban land policy in the entire Region.

2. To In order to regulate development and to carry out investment programmes, it was considered essential to have suitable legislation which would control and regulate all such development in the areas falling in the Region, the High Power Board, in its meeting held on 6th December, 1967, resolved that it was necessary to set up a statutory Board for the National Capital Region. However, there was no consensus among the participant States for setting up such a statutory Board for quite some time.

> It was as late as 1980 when the problem was assuming uncontrollable proportions that it was decided to revitalise the National Capital Regional Plan concept and to take up the coordinated development of the entire

Region. The matter assumed urgency because of the exercises taken up for the revision of Delhi Master Plan, projecting a huge requirement of funds for providing different activities and services in case the present growth of the Capital was not controlled.

In order to take immediate decisions for accelerating and ensuring an orderly development of the Region as a corollary to contain the rate of growth of Delhi, the Minister of Works & Housing convened two meetings with the concerned Chief Ministers and the Lt. Governor of Delhi, and it was decided to set up a statutory coordinating Board at the Central level for planning, monitoring and development of National Capital Region at the regional level. An agreement was signed to this effect by the Union Minister of Works & Housing and the Chief Ministers of Uttar Pradesh, Rajasthan and Haryana as well as the Lt. Governor of Delhi. For setting up the Board, it was agreed to introduce a Central legislation in Parliament by virtue of Article 249, 250 and 252 of the Constitution on the basis of resolution to be passed by the legislatures of the States of Haryana, Rajasthan and Uttar Pradesh.

34. Finally, the National Capital Region Planning Board Act, 1985 (which replaced the Ordinance issued earlier in this regard) was passed by the Parliament in January, 1985 and received the assent of the President on the 9th February, 1985. With the passing of the Act by the Parliament and constitution of the National Capital Region Planning Board (NCRPB) on the 27th March, 1985 a long awaited need has been fulfilled. The Board under the Chairmanship of the Union Minister of Urban Development, has 21 members including 5 co-opted members (Composition of Board and its functions are enclosed as Annexure I). The Planning Committee, another statutory committee has _____ members and the _____ Secretary of the Board is the chairman of the _____ of the same. (Composition of Planning Committee enclosed as Annexure II). After the Board came into existence, the Board, according to the provisions of the NCR Planning Board Act, 1985, in turn constituted a Committee called the Planning Committee for assisting the Board in the discharge of its functions. The Planning Committee has _____ members under the chairmanship of the Member Secretary, NCR Planning Board.

Composition of the Planning Committee is enclosed as Annexure II.

2.

NATIONAL CAPITAL REGION PLANNING BOARD:-**A) Composition of the NCR Planning Board.**

The NCR Planning Board, under the Chairmanship of the Union Minister of Urban Development has 21 members besides 5 coopted members. This composition is as under:-

- | | |
|---|----------|
| 1. Union Minister of Urban Development | Chairman |
| 2. Chief Minister of Haryana | Member |
| 3. Chief Minister of Rajasthan | Member |
| 4. Chief Minister of Uttar Pradesh | Member |
| 5. Lt. Governor of Delhi | Member |
| 6. Chief Executive Councillor Delhi Metropolitan Council | Member |
| 7. Union Minister of Industry | Member |
| 8. Union Minister of State for Railways | Member |
| 9. Union Minister of State for Surface Transport | Member |
| 10. Member (Urban Development) Planning Commission | Member |
| 11. Secretary, Ministry of Urban Development | Member |
| 12. Secretary, Department of Expenditure, Ministry of Finance | Member |
| 13. Chief Planner, Town & Country Planning Organisation | Member |
| 14. Minister of Town & Country Planning, Govt. of Haryana | Member |
| 15. Minister of Urban Development, Govt. of Rajasthan | Member |
| 16. Minister of State in charge of Urban Development, Uttar Pradesh | Member |
| 17. Chief Secretary, Govt. of Rajasthan | Member |

- | | | |
|-----|---|--------|
| 18. | Chief Secretary
Govt. of Haryana | Member |
| 19. | Secretary, Housing and
Urban Development
Govt. of Uttar Pradesh | Member |
| 20. | Chief Secretary
Delhi Administration | Member |
| 21. | Member Secretary, National
Capital Region Planning
Board | Member |

Co-opted Members

1. Chief Minister of Madhya Pradesh
2. Secretary, Ministry of Industrial Development, Govt. of India.
3. Secretary, Ministry of Surface Transport, Govt. of India
4. Chairman, Railway Board, Government of India
5. Adviser (HUD), Planning Commission, Govt. of India

(B) FUNCTIONS OF THE BOARD

Under Section 7 of the Act, the functions of the Board are:-

1. To prepare the Regional Plan and the Functional Plans.
2. To arrange for the preparation of sub-regional plans and project plans by each of the participating States and the Union Territory
3. To coordinate the enforcement and implementation of the Regional Plan, functional plans, sub-regional plans and project plans through the participating States and the Union Territory
4. To ensure proper and systematic programming by the participating States and the Union Territory in regard to project formulation, determination of priorities in the National Capital Region or sub-regions and phasing of development of the National Capital Region in accordance with stages indicated in the regional plan.

5.

To arrange for, and oversee, the financing of selected development projects in the National Capital Region through Central and State Plans fund and other sources of revenue.

The Board is empowered to coordinate and monitor the implementation of the Regional Plan and to evolve a harmonised policy for control of land-use and development of infrastructure in the National Capital Region so as to avoid any haphazard development of the Region. The responsibility of executing the schemes in the concerned States remains with the participating States and Delhi UT or their authorised agencies. This Board has the distinction of being the only institutional set-up of its kind in India with statutory responsibility for the planning and development of an inter State region area around a Capital City.

(C) FUNDS

The Board has its own fund called the National Capital Region Planning Board Fund consisting of contributions from the Central Government and the participating State Governments concerned. The Board is also empowered to select and finance the development of any urban area outside the National Capital Region under the counter-magnet concept in order to achieve the objectives of the Regional Plan.

5. (D)

Constituent areas of the NCR

The National Capital Region extends over an area of 30,242 sq.km. in the States, namely, Haryana, Rajasthan and Uttar Pradesh and Union Territory of Delhi. The constituent units of each Sub-region are as follows:

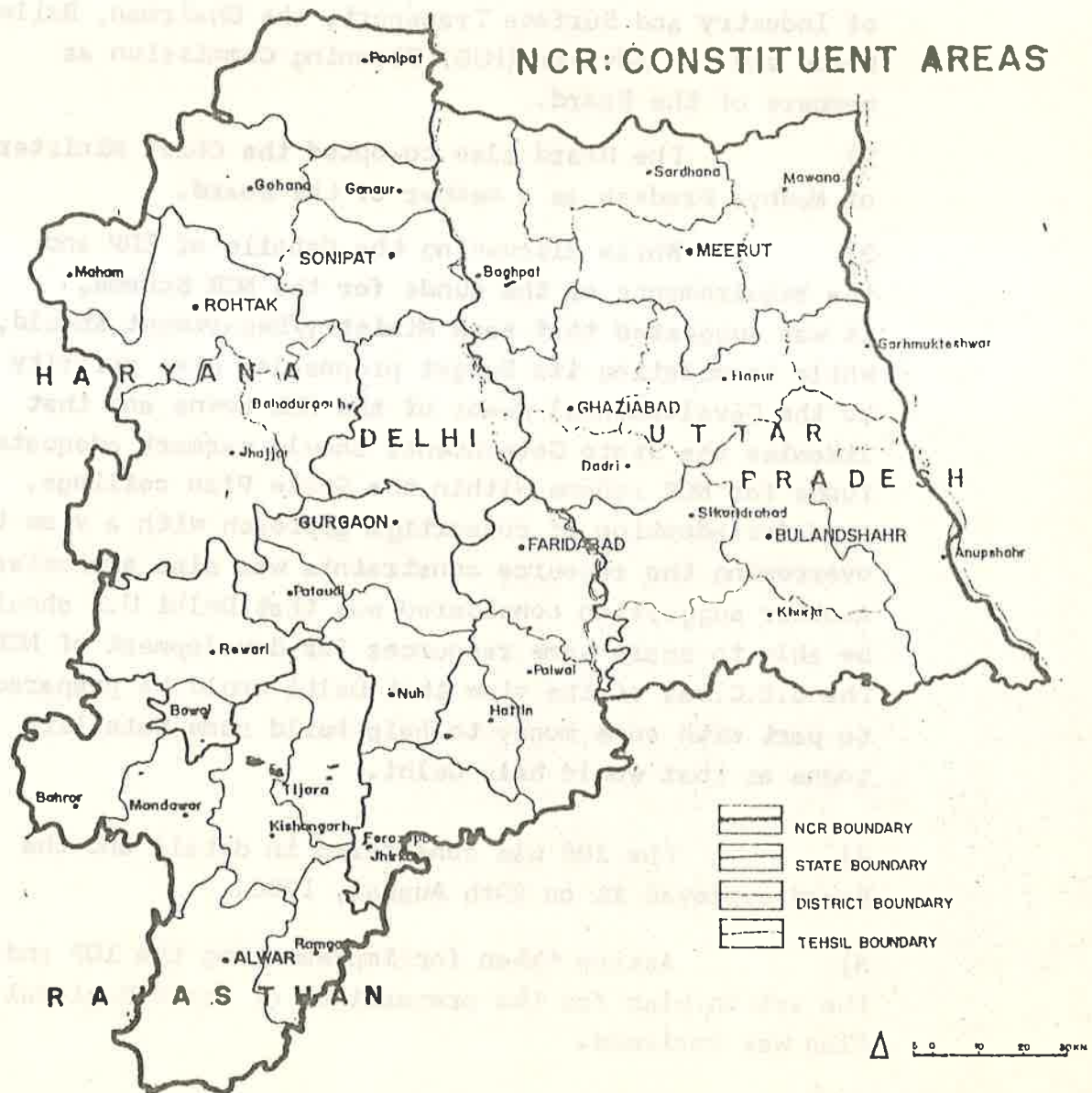
- a. Union Territory of Delhi (1,483 sq.km.)
- b. Haryana Sub-Region (13,413 sq.km)
comprising Faridabad, Gurgaon, Rohtak and Sonapat Districts; Rewari and Bawal Tehsils of Mahendragarh District

and Panipat tehsil of Karnal District.

c. Rajasthan Sub-region (4,493 sq.km.) comprising six tehsils of Alwar District, namely, Alwar, Ramgarh, Behror, Mandwar, Kishangarh and Tijara.

d. Uttar Pradesh Sub-region (10,853 sq.km.) comprising three districts, namely, Meerut, Ghaziabad and Bulandshahr.

The following map shows the constituent areas of the National Capital Region:



3%

MEETINGS OF THE BOARD HELD DURING THE YEAR

During the year, the Board met thrice as under:-

Date	3.7.86	Under the chairmanship of
	29.8.86	Shri Abdul Gaffur
	17.2.87	Under the chairmanship of
		Smt. Moshina Kidwai.

The gist of the important items on which the Board deliberated and decided upon is given below:-

- 1) Co-option of the Secretaries in the Min. of Industry and Surface Transport, the Chairman, Railway Board and the Adviser (HUD) Planning Commission as members of the Board.
- 2) The Board also co-opted the Chief Minister of Madhya Pradesh as a member of the Board.
- 3) While discussing the details of IDP and the requirements of the funds for the NCR Scheme, it was suggested that each Ministry/Department should, while formulating its Budget proposals, give priority to the Developmental needs of the NCR towns and that likewise the State Governments should earmark adequate funds for NCR scheme within the State Plan ceilings. The need for adoption of consortium approach with a view to overcoming the resource constraints was also emphasised. Another suggestion considered was that Delhi U.T should be able to spare some resources for development of NCR. The C.E.C. was of the view that Delhi would be prepared to part with some money to help build some Satellite towns as that would help Delhi.
- 4) The IDP was considered in detail and the Board approved it on 29th August, 1986.
- 5) Action taken for implementing the IDP and the action plan for the preparation of Draft Regional Plan was reviewed.

- 6) Recommendations of Planning Committee on the conceptual plan for Delhi was considered and approved.
- 7) Institutional arrangements for implementation of NCR schemes were considered and approved in principle. The details are to be worked out in connection with the State Governments concerned.
- 8) Revised Estimates 1986-87 and Budget Estimates 1987-88 under 'Plan' and 'Non-Plan' heads of Accounts were approved by the Board.
- 9) The Annual Accounts for the year 1985-86 and Auditors Report thereon were adopted by the Board.

4. PLANNING COMMITTEE

The NCRPB Act, 1985 provides for setting up of a Planning Committee consisting of officers and town planners of the participating States and the Delhi UT to assist the Board in the discharge of its functions.

a) COMPOSITION OF THE PLANNING COMMITTEE

According to the provisions of the NCRPB Act, 1985 the Board has constituted the Planning Committee. It has 18 members under the Chairmanship of the Member-Secretary as under:-

- | | | |
|-----|--|----------|
| 1. | Member Secretary, NCR Planning Board | Chairman |
| 2. | Joint Secretary in the Min. of Urban Development dealing with the work relating to National Capital Region | Member |
| 3. | Secretary in charge of National Capital Region work in the State of Haryana | Member |
| 4. | Secretary in charge of National Capital Region work in the State of Rajasthan | Member |
| 5. | Secretary in charge of National Capital Region work in the State of Uttar Pradesh | Member |
| 6. | Secretary in charge of National Capital Region work in the Delhi Union Territory | Member |
| 7. | Vice Chairman, Delhi Development Authority | Member |
| 8. | Chief Planner, Town & Country Planning Organisation | Member |
| 9. | Director, Town Planning Department, Govt. of Haryana | Member |
| 10. | Chief Town Planner, Govt. of Rajasthan | Member |
| 11. | Chief Town Planner, Govt. of Uttar Pradesh | Member |

Co-opted Members:

A representative each from the Ministries of

- | | |
|--|-----------------|
| 1. Surface Transport | Co-opted Member |
| 2. Energy (Deptt. of Power) | Co-opted Member |
| 3. Communications | Co-opted Member |
| 4. Railways | Co-opted Member |
| 5. Planning Commission | Co-opted Member |
| 6. Deptt. of Environment | Co-opted Member |
| 7. Chairman-cum-Managing
Director, Housing & Urban
Development Corporation | Co-opted Member |
| 8. Chief Regional Planner
NCR Planning Board | Member-Convenor |

(b) FUNCTIONS OF THE COMMITTEE

(1) The functions of the Committee as provided in the Act shall be to assist the Board in:-

(a) The preparation and co-ordinated implementation of the Regional Plan and Functional Plans; and

(b) Scrutinising the Sub-Regional Plans and all Project Plans to ensure that the same are in conformity with the Regional Plan.

(2) The Committee may also make such recommendation to the Board as it may think necessary to amend or modify any Sub-Regional Plan or any Project Plan.

(3) The Committee shall perform such other functions as may be entrusted to it by the Board.

5.

MEETINGS OF THE PLANNING COMMITTEE HELD
DURING THE YEAR

During the year under Report, the Planning Committee met four times as under:-

DATES:	21.5.86	--	5th Meeting
	10.6.86	--	6th Meeting
	25.7.86	--	7th Meeting
	28.1.87	--	8th Meeting

The important business transacted by the Committee during the year includes the following:-

1. The policies to be incorporated in the IDP were discussed and approved. These relate to Population Policies, Settlement Pattern, Economic activities, Locational policies for Central Govt. Office/ Public Sector Undertakings, Wholesale and Distributive trades, Land use, Transport, Telecommunications and Physical infrastructure and rationalisation of Sales Tax structure in the NCR.
2. Considered the conceptual plan for Delhi 2001 prepared by the DUAC in connection with the large scale revision of Delhi Master Plan and approved the views formulated by the Board's Office.
3. Considered and approved the Action Plan to implement the proposals contained in the IDP.

6. ACTIVITIES

Study Groups constituted

In connection with the preparation of the Interim Development Plan for the National Capital Region (NCR) and the Draft Regional Plan, the Board has constituted Study Groups in order to go into details of each aspect with a view to taking stock of the existing pattern and also to project the likely growth and the requirements with 2001 AD as the perspective. The Study Groups on the following subjects were re-constituted in February, 1987 with modified composition and terms of reference:-

1. a) Economic Profile
b) Fiscal measures
2. Landuse and settlement system
3. Regional transport and tele-communications
4. Physical infrastructure (water supply, sewerage, drainage, solid base management, low cost sanitation).
5. Power
6. Social infrastructure (Health & Education)
7. Environment

A. Policies and proposals included in the IDP for NCR

Brief details of policies and proposals are indicated in Annexure-I.

B%

SURVEYS AND STUDIES

In connection with the preparation of the Draft Regional Plan, surveys and studies have been undertaken as detailed below:-

S. No.	Name of the Study	Agency	Date of commencement/ Duration of Study
1.	Migration Studies in the Context of NCR Plan.	National Institute of Urban Affairs	15.10.1985 (9 months)
2.	Study on Informal Sector in NCR	Society for Development Studies (SDS)	March, 1986 (9 months)
3.	Fiscal Policy for the National Capital Region	National Instt. of Public Finance & Policy	28.11.85 (9 months)
4.	Computer Modelling for Urban Development	Central Building Research Instt., Roorkee	(Oct. 1986 (10 months)
5.	Land Use Analysis based on Landsat Imageries & Aerial Photography	Defence Terrain Research Laboratory M/o Defence	January 1987 (6 months)
6.	Traffic & Transportation Surveys	Operations Research Group, Baroda	16.2.1987 (6 months)
7.	Settlement System	Physical Research Laboratory, Ahmedabad.	1.5.87 (2 months)
8.	Counter-magnet Area Study	School of Planning & Architecture, New Delhi	15.5.87 (4 months)

7. Details of activities of various sub-regions

The on-going schemes approved by Central Govt. in 1974 and 1975 are being implemented by the participating States. Financial assistance to the extent of 50% of the expenditure involved is extended by the Board. The details and progress of various schemes being implemented in Meerut, Hapur, Panipat, Gurgaon and Alwar and Bhiwadi are shown in the statement at Annexure II.

8. Details of activities in Urban Areas outside
NCR selected under Section 8(f)

The question of selection of counter-magnet areas is being examined by the Board at various forums. A conscious decision was taken that selection of counter-magnet areas should not precede the preparation of the Draft Regional Plan. However, it was decided to finalise the norms for selection of such areas and also short list certain towns on the basis of the norms finalised. A study has been entrusted to the School of Planning and Architecture for this purpose.

12. A list of the Officers & Staff of the Board and a chart showing the organisational set up of the Board is enclosed at Annexure III.

9. MISCELLANEOUSDELEGATION OF POWERS

In its first meeting held on 4th June, 1985 the Board approved the Delegation of Powers as briefly stated below:-

I. Functions, powers and duties under clauses (b), (c) & (e) of sub-section 2 of Section 22:

To identify individual projects against schemes approved by the Board for funding by the Board, to release instalments for the same and for carrying out a constant review of the progress of the projects, the functions powers and duties of the Board are delegated to the following persons in the Group:-

Project Sanctioning & Monitoring Group:

- | | | |
|------|---|----------|
| i) | Secretary, Min. of Urban Development | Chairman |
| ii) | Secretary (Exp.) or his representative | Member |
| iii) | Adviser, Planning Commission or his representative | Member |
| iv) | Joint Secretary in charge of NCR in the Min. of Urban Development | Member |
| v) | Secretaries-in-charge of the NCR work in the States and Delhi UT | Member |
| vi) | Chief Planner, TCPO, New Delhi | Member |
| vii) | Member Secretary, NCR Planning Board | Convenor |

1) The Group is empowered to sanction loans and grants for the implementation of sub-regional plans and project plans and for the development of the counter-magnet area identified by the Board in accordance with the rules.

2) The Group will also exercise the powers to commission surveys and studies on behalf of the Board.

II. Delegation of functions, powers and duties under Section 31 of the Act:

Subject to the limits and conditions mentioned below the Board delegates its powers to create posts and appoint persons against such posts to the following persons in the Group to be called the Personnel Group:-

PERSONNEL GROUP:

- | | | |
|------|---|----------|
| i) | Secretary, Min. of Urban Development | Chairman |
| ii) | Secretary (Expenditure) or his representative | Member |
| iii) | Secretary in charge of NCR work in the State of Haryana | Member |
| iv) | Secretary in charge of NCR work in the State of Rajasthan | Member |
| v) | Secretary in charge of NCR work in the State of Uttar Pradesh | Member |
| vi) | Member Secretary, NCR Planning Board | Convenor |

- a) The Group will have full powers to create posts in the Board
- b) Selection of personnel for appointment against posts, the maximum of scale of pay of which exceeds Rs.1600/- will be made by the Group and appointment of persons selected by the Group will be made after it is approved by the Chairman,
- c) Selection and appointment of posts the maximum of scale of pay of which is equal to or less than Rs.1600/- will be made by the Member Secretary.

III. Delegation of powers under Sub-section 22(2)(a):

The functions, powers and duties of the Board
(i) to incur administrative expenses of the Board under

clause(a) of sub-section 2 of section 22, and (ii) to exercise administrative control and to administer the the terms and conditions of employment of the officers and employees of the Board as stipulated in the regulations, are delegated to the Member Secretary.

Any other administrative expenses of the Board the power to incur which has not been included in the list above shall be incurred by the Member Secretary with the approval of the Chairman of the Board.

IV: Finance Accounts & Audit

Under Section 21(1) of the NCR Planning Board Act, 1985 a fund has been constituted to be called National Capital Region Planning Board Fund. During the year 1986-87 amounts credited into the fund and the expenditure therefrom was as under:-

(i) An amount of Rs.21.89 lakhs was received from the Ministry of Urban Development as grants-in-aid out of their Non-Plan Funds for meeting the expenditure towards salaries, allowances and remuneration of Member Secretary, Officers and other employees of the Board as also administrative expenses of the Board. The total expenditure during the year on these items amounted to Rs21.62 lakhs. The unspent balance of grant-in-aid received during the year 1985-86 and the current year alongwith miscellaneous receipts of the Board aggregating to Rs.0.92 lakh has been carried forward to be spent during the year 1987-88.

(ii) An amount of Rs.4.25 crores was received from the Ministry of Urban Development as contribution out of their Plan Funds for (a) Providing Financial Assistance to the participating states/their implementing Agencies for the implementation of on-going new

-: 19 :-

NCR schemes and (b) conducting surveys, preliminary studies and drawing up plans for the National Capital Region.

The Board released the following financial assistance in the shape of interest-bearing loan to the participating States/their implementing agencies:-

(a)	Govt. of Uttar Pradesh	-	Rs. 225.00 lakhs
(b)	Haryana Urban Dev. Authority, Chandigarh	-	Rs. 138.50 lakhs
(c)	Urban improvement Trust, Alwar (Rajasthan)	-	Rs. 36.50 lakhs
	TOTAL	-	<u>Rs. 400.00 lakhs</u>

The expenditure on studies/surveys and preparation of NCR Plan amounted to Rs. 9.27 lakhs and 1.52 lakhs respectively.

The unspent balance of contributions for the year 1985-86 and the current year alongwith interest receipts on loan etc. aggregating to Rs. 64.86 lakhs, has been transferred to the accounts for the year 1987-88 to be spent for achieving the approved objectives of the Board.

The Ministry of Urban Development has sanctioned for the year 1987-88 an amount of Rs. 22.23 lakhs as Grant-in-aid (Non-Plan) for meeting expenses towards salaries and Administrative expenses of the Board and an amount of Rs. 600.00 lakhs as contribution (Plan) for providing financial assistance to the participating States, conducting studies and surveys as also drawing the NCR Plan.

The annual accounts for the year 1985-86 have since been audited by the Director of Audit, Commerce Works & Miscellaneous on behalf of the Comptroller and Auditor General of India and adopted by the Board. The same alongwith the Audit Report have been laid on the table of both the Houses of the Parliament by the Ministry of Urban Development.

POLICIES AND PROPOSALS INCLUDED IN THE
INTERIM DEVELOPMENT PLAN FOR THE
NATIONAL CAPITAL REGION

The Interim Development Plan approved by the Board on 29.8.1986 contains policies in regard to the following aspects:

1. POPULATION POLICY

To control growth of population of Delhi to 112 lakhs against the projected population of 132 lakhs by 2001 and also to control that of Delhi Metropolitan Area (DMA) towns to 37 lakhs.

The National Capital Region contains a total population of 190.18 lakhs (90.90 lakh urban and 99.28 lakh rural) as per 1981 census. Of this, Delhi UT had a population of 62.20 lakhs and has been fast growing at an average annual rate of growth of more than 5 per cent since 1951. The NCR projected population would be 325 lakhs with an urban component of 234 lakhs by 2001 of which the 8 priority towns/urban complexes would have an assigned population of 50 lakhs, and the rest 184 lakhs distributed in remaining towns. There are 94 towns in the NCR as per 1981 census

The 8 priority towns are as under:

1. Panipat
2. Rohtak
3. Rewari-Bhiwadi-Daruhera
4. Palwal
5. Alwar
6. Meerut
7. Hapur
8. Bulandshahr - Khurja.

2. SETTLEMENT PATTERN

a) Induced development of the following selected and priority towns/urban complexes.

<u>Towns</u>	<u>Population 1981 (in lakhs)</u>	<u>Assigned Population 2001 (in lakhs)</u>
1. Meerut	5.36	13.0
2. Hapur	1.02	6.0
3. Bulandshahr- Khurja	1.03 0.67	10.0
4. Palwal	0.47	3.0
5. Rewari-Bhiwadi-Daruhera	0.52	3.0
6. Rohtak	1.68	5.0
7. Panipat	1.38	5.0
8. Alwar	1.47	5.0
	<u>13.60</u>	<u>50.0</u>

Based on the above urban centres, a four tier system of settlements i.e. regional towns, growth centres, service centres and basic villages has been envisaged.

3. POLICY REGARDING ECONOMIC ACTIVITIES

- I. Location Policy for Industries
- II. Location of Central Government and Public Sector Offices.
- III. Location of Wholesale and Distributive Trade and Commerce.
- IV. Fiscal Policy

I. LOCATION POLICY FOR INDUSTRIES

a) Strict control within Union Territory of Delhi

- Present policy of not promoting location of medium and large scale industries within Delhi to continue.
- Restrictions of small scale industries only to those required to serve Delhi's need (employing 20 or less)
- Non-conforming industries to be shifted outside Delhi.

b) Control outside Delhi but within the DMA

- No large/medium scale industries to be set up in DMA. However, small scale units may be permitted.

c) Incentives for Industries outside DMA but within NCR

- No restriction on the growth of industries in the region except in areas reserved for conservation.
- Incentives for large/medium/small scale industries to be given.

II. LOCATION POLICY FOR CENTRAL GOVERNMENT AND PUBLIC SECTOR OFFICES.

a) Strict control within the Union Territory of Delhi

- Only offices performing ministerial functions, protocol functions or liaison functions to continue.
- Such existing offices which do not perform the above functions to be shifted.
- Public Sector Offices which do not meet the above three criteria need to be shifted.

: A :

b) Control outside Delhi but within DMA.

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- Similar control on the opening of new Central Government offices and Public Sector Undertakings to be exercised as for Union Territory of Delhi.
- Restrictions on Public Sector Undertakings on opening of new offices or expansion of existing ones will apply to DMA. However, such offices whose continuance in Delhi is justified may be encouraged.

III. LOCATION POLICY FOR WHOLESALE AND DISTRIBUTIVE TRADE AND COMMERCE.

- a) Disincentives within Delhi for trades not directly consumed except those trades which are consumed atleast upto 60 per cent in Delhi.
- b) Controlled development outside Delhi but within DMA. Such trades which are hazardous in nature and are located in congested areas should not be encouraged to develop in DMA towns.
- c) Outside DMA but within NCR as a matter of policy, incentives, concessions and infrastructure should be made available in regional towns to accelerate the growth.

IV. FISCAL ASPECTS

1. Delhi UT should have minimum floor level of taxation.
2. Tax on industrial raw materials and industrial machinery should be slightly higher in Delhi than the rest of the region.
3. In order to prevent diversion of trade from the neighbouring States to Delhi, the present rate of taxation of 2% levied on re-export of goods should be raised to 4% in Delhi as is being levied in UP, Rajasthan and Haryana.
4. Levy tax on consignments on stock transfers (Government of India to act according to 46th Constitutional Amendment 1982 as also recommended by the Group of Chief Ministers Conference).

: 6 :

4/27

4. POLICY REGARDING LAND USE

1. Policy for Agricultural Land

- rational utilisation of less valuable land for urban expansion and use of unproductive or barren land for urban development.
- intensive utilisation of agricultural land.
- intensive food production units to be permitted in urban/rural areas.

2. Policy for Forest Development

- preservation and improvement of existing forest areas
- tree plantation on cultivable wastes, barren and public lands.
- social forestry in each settlement.
- restriction on conversion of forest lands for agricultural purposes.

3. Policy for Land for Urban Development

- preserve urban land by redensification to reduce the need of additional land (proposed addition of 28 lakh population to be accommodated in 17,000 hect. in Delhi, 28.3 lakhs of DMA towns in 10,000 hect., 36.4 lakhs of towns in 20,000 hect.)

4. Policy for Regional Recreational Area and Nature Conservation

- development of national/regional parks, wild life and bird sanctuary, river front recreational areas, preservation of historical monument, and areas of scenic beauty.

5. Policy for Green Buffer and Buffer Zones

- provision of green buffer and buffer zones to prevent settlements merging with each other.

: 10 :

5. TRANSPORT AND TELECOMMUNICATION POLICY

4/28

ROAD

The regional transport policy for NCR should promote and support the economic development of region and relieve the capital of traffic congestion. The policy is

- i) To inter-connect among each other regional urban centres lying in the outer areas of NCR. through Outer Grid Panipat - Muzaffarnagar - Meerut - Hapur - Bulandshahr - Khurja - Palwal - Rewari - Jhajjar - Rohtak - Gohana - Panipat; and Inner Grid Sonapat - Baghpat - Meerut - Hapur - Bulandshahr - Sikandrabad - Faridabad - Gurgaon - Jhajjar - Rohtak - Gohana - Sonapat.
- ii) To connect them with the capital by fast mode of transport which would require better road and rail connection through Radial Corridor System, namely
Delhi - Panipat
Delhi - Palwal
Delhi - Gurgaon
Delhi - Hapur
Ghaziabad - Meerut
- iii) To develop new loading and unloading facilities outside the UT of Delhi.
- iv) Motorway between Rewari and Alwar.

RAIL

- i) Development of Regional Rail bye-pass
Meerut - Hapur - Bulandshahr - Khurja - Palwal - Gohana
Rewari - Jhajjar - Rohtak.
- ii) Conversion of Metre Gauge rail to Broad Gauge Delhi-Alwar.
- iii) Identification and location of another rail terminal to decongest and solve traffic problems faced by the existing terminals.
- iv) Completion of electrification along with radial corridors of
Delhi - Panipat
Delhi - Meerut (beyond Ghaziabad)
Delhi - Rohtak (beyond Shakurbasti).

7 :
TRANSPORT AUTHORITY

Formation of a single unified metropolitan transport authority.

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TELECOMMUNICATION FACILITIES

Provision of adequate telecommunication facilities in the DMA and in the selected priority towns.

6. PHYSICAL INFRASTRUCTURE

a) Power

- i) The power supply should be un-interrupting and available in adequate quantity throughout the region.
- ii) Uniformity in tariff throughout the region.

b) Water Supply

- i) Ensure availability of water as per required norms in priority towns.
- ii) Strict enforcement of Water Pollution Control Act, 1974.

c) Sewerage

- i) Settlements where sewerage system is not available low cost sanitation should be adopted.

ANNEXURE - II

PROGRESS OF N. C. R. SCHEMES UPTO MARCH, 1987

Sl. No.	No. of Schemes	Total area in acres	Total estimate in lakhs	Progress upto March, 1987		NCRB's assistance during 1986-87 (Rs. in lakhs)	Expenditure during 1986-87 (Rs. in lakhs)		Remarks
				Physical in acres	Financial in lakhs		Acq.	Dev.	
				Acc.	Acq.			Total	
A. HARYANA									
1.	4	2052.18	1906.39 (1981)	1939.60	1638.16 Total: 2179.60	55.00	294.15	83.54	* Enhanced compensation of Rs. 275.20 lakhs.
2.	2	550.00	811.87 (1981)	591.40	436.53 Total: 726.87	83.50	185.70	58.52	
Sub-Total:				2531.00	2074.69 Total: 2906.47	138.50	479.85	142.06	
B. RAJASTHAN									
1.	18	793.74	534.87 (1974)	671.44	517.38	16.50			15 completed by 1985-86 Only 3 in progress
2.	5	50.00	154.80 (1985)	Nil	Nil	20.00 (1986-87)			State Govt. assistance 1985-86 Rs. 15 lakhs. 1986-87 Rs. 20 lakhs.
Sub-total:				671.44	517.38	36.50		13.00	
C. UTTAR PRADESH									
1.	5	1251.13	2983.44 (1985)	1156.76	1839.98 Total: 2577.37	100.00	413.70	127.20	* Enhanced compensation of Rs. 394 lakhs
-	2	438.64	1553.64	435.80	241.68 Total: 593.10	100.00	150.00	168.48	
2.	1	31.00	225.00 (1985)	31.00	129.467 Total: 152.347	25.00	-	7.42	
Sub-Total:				1396.56	3322.817	225.00			

867.31

BRIEF STATEMENT OF SCHEMES SANCTIONED BY THE NATIONAL CAPITAL REGION PLANNING BOARD

H A R Y A N A

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Sl. No.	S C H E M E	Area in Acres	Cost Estimates (1981 prices) (in Rs. in lakhs)	Progress upto 31.3.86		Progress upto 31.3.1987		MCRB's Assistance during 1986-87 (Rs. in lakhs)	State Govt./ Agency's share (Rs. in lakhs)	Expenditure during 1986-87 (Rs. in lakhs)
				Physical	Financial	Physical	Financial			

I. G U R G A O N

1.	Sector 14 (Residential)	L.A. 156.23 L.D. 156.23	574.92	156.23	160.16 97.00 257.16	156.23	160.16 102.79 262.95	-	5.79 5.79	-
2.	Sector 17 (Residential)	L.A. 340.00 L.D. 340.00	367.87	247.15	297.74 146.21 443.95	247.15	316.69 150.32 467.01	18.95 4.11 23.06	-	-
3.	Sector 15 (Industrial) Now numbered 18, 19, 20	L.A. 1145.03 L.D. 1145.03	584.64	1145.03 205.00 (Sector 18)	746.61 27.12 773.73	1145.03 205.00	1021.81 83.33 1105.14	275.20 (Enhanced 56.21 compensation)	331.41	-
4.	Sector 487 (Residential) incl. Sector 7 Extn.	L.A. 410.92 L.D. 410.92	378.96	391.19 391.19	139.50 187.57 327.07	391.19 391.19	139.50 205.00 344.50	17.43 17.43	-	-
SUB- TOTAL 1		L.A. 2052.18 L.D. 2052.18	1906.39	1939.60 999.57	1344.01 457.90 1801.91	1939.60 999.57	1638.16 541.44 2179.60	55.00	322.69	294.15 83.54 377.69

II. P A N I P A T

1.	Sector 11 - 12 (Residential)	L.A. 485.95 L.D. 486.95 *	685.87	240.50 In progress	170.12 121.41 291.53	486.95 125.00 (Part. I)	323.14 167.91 491.05	-	153.02 46.50 199.52	-
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* Original area was 450 acres.

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-: 2 :-

Sl. No.	S C H E M E	Area in Acres	Cost Estimates (1981 prices) (Rs. in lakhs)	Progress upto 31.3.86 Physical (in acres)	Financial (Rs. in lakhs)	Progress upto 31.3.1987 Physical (in acres)	Financial (Rs. in lakhs)	NCRPB's Assistance during 1986-87	State Govt./ Implementing Agency's share	Expenditure during 1986-87 (Rs. in lakhs).
2.	Sector 25(Industrial)	L.A.	100.00	104.45	80.71	104.45	113.39			32.68
		L.D.	100.00	104.45	110.41	104.45	122.43			12.02
					191.12		235.82			44.70
<hr/>										
SUB-TOTAL II		L.A.	550.00	811.87	250.83	591.40	436.53	83.50	160.72	185.70
		L.D.	550.00	344.95	231.82	229.45	290.34			58.52
				104.45	492.65		726.87			244.22
<hr/>										
GRAND TOTAL (Sub-total I & II)		L.A.	2602.18	2718.26	1594.84	2531.00	2074.69	138.50	483.41	479.85
		L.D.	2602.18	2284.55	689.72	1229.02	831.78			142.06
				1185.27	2284.56		2906.47			621.91

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Sl. No.	Scheme	Area in Acres	Cost Estimates at 1974 prices (Rs. in lakhs)	Progress upto 31.3.1986 Physical (in acres)	Financial (Rs. in lakhs)	NCRPB's assistance during 85-86 (Rs. in lakhs)	NCRPB's assistance during 1986-87 (Rs. in lakhs)	NCRPB's total assistance during 1985-86 & 1986-87 (Rs. in lakhs)	State Government & Implementing Agency's share (Rs. in lakhs) 1985-86 and 1986-87.	Expenditure incurred during 1986-87 (Rs. in lakhs)	Recommendations for 1987-88.
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URBAN IMPROVEMENT TRUST

A L M A R

1.	19 schemes in total (one dropped) Out of 19 schemes, UIT has almost completed 15 schemes, 3 partly developed and 1 scheme dropped due to land dispute.	L.A. 793.74 L.D. 793.74	534.80	LA 671.44 LD 671.44	198.60	16.50 (For 3 Schemes)	16.50	-	-	13.00	-
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Sub-total I

793.74	534.80	LA 671.44 LD 671.44	504.38	-	16.50	16.50	-	13.00
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B H I W A D I

II. 5 Schemes

L.A. 50.00	LA -	-	75.00	20.00	95.00	1985-86 19.00 1986-87 20.00	-
L.D. 50.00	LD -	-	-	-	-	-	-

Sub-total -II

50.00	154.80	LA - LD -	-	75.00	20.00	95.00	39.00	-
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GRAND TOTAL
(Sub-total I & II)

843.74	689.60	LA 671.44 LD 671.44	504.38	75.00	36.00	111.50	39.00	13.00	-
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* Cost estimates at 1985 prices.

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U T T A R P R A D E S H

Sl. No.	S C H E M E	Scheme Area in Acres	Cost Estimates at 1985 prices (Rs. in lakhs)	Progress upto 31.3.1986		Progress upto 31.3.87 Physical (in acres)	Financial (Rs. in lakhs)	NCRPB's assistance during 1986-87 (Rs. in lakhs)		State Government & Implementing Agency's share		Expenditure during 1986-87 (Rs. in lakhs)
				Physical (in acres)	Financial (Rs. in lakhs)			Physical (in acres)	Financial (Rs. in lakhs)	Physical (in acres)	Financial (Rs. in lakhs)	
1	2	3	4	5	6	7	8	9	10	11		
A. U.P. HOUSING AND DEVELOPMENT BOARD												
M E E R U T												
1.	Commercial complex scheme on Garh-Mukteshwar Road	L.A. 103.42 L.D. 103.42	63.41 229.03	103.42 63.00	63.40 59.82 123.22	103.42 66.00	63.40 64.05 127.45			L.A. Nil L.D. 4.23		
2.	Transport Nagar between Baghpat and Meerut Road	L.A. 52.19 L.D. 52.19	21.14 56.34	52.19 52.19	21.14 44.98 66.12	52.19 52.19	21.14 46.47 67.61			L.A. Nil L.D. 1.49		
3.	Residential scheme between Meerut & Hapur Road (Shastri Nagar)	L.A. 378.60 L.D. 378.60	185.50 266.10	365.50 356.50	177.77 189.25 367.02	365.50 356.50	177.77 189.25 367.02			L.A. Nil L.D. Nil		
4.	Residential scheme between Meerut -Garh Mukteshwar Road in front of Medical College	L.A. 269.96 L.D. 269.96	394.00 673.67	243.53 11.00	395.97 60.75 456.72	243.55 50.00	789.97 126.69 816.66			L.A. 394.00 L.D. 65.94		
5.	Residential scheme between Meerut-Hapur Road and Meerut-Garh-Mukteshwar Road	L.A. 446.96 L.D. 446.96	553.14 (R) 541.11	392.10 180.00	768.00 255.38 1023.38	392.10 230.00	787.70 310.93 1098.63			L.A. 19.70 L.D. 55.55		
SUB-TOTAL I		L.A. 1251.13 L.D. 1251.13	1217.19 1766.25 2983.44	LA 1156.74 LD 662.69	1426.28 610.18 2036.46	1156.76 754.69	1839.98 737.39 2577.37	100.00	S.G. 100.00 L.A. 340.91 440.91	L.A. 413.70 L.D. 127.21 540.91		

(R) - Revised

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U T T A R P R A D E S H (Continued)

S1. No.	S C H E M E	Scheme Area in Acres	Cost Estimates at 1985 prices (Rs. in lakhs)	Progress Physical (in acres)	Upto 31.3.1986 Financial (Rs. in lakhs)	Progress Physical (in acres)	Upto 31.3.1987 Financial (Rs. in lakhs)	MCRPB's assistance under 1986-87 (Rs. in lakhs)	State Government & Implementing Agency's share	Expenditure during 1986-87 (Rs. in lakhs)
1	2	3	4	5	6	7	8	9	10	11
B. MEERUT DEVELOPMENT AUTHORITY										
MEERUT										
1.	Residential Scheme at Pallaipuram (in progress)	L.A. 432.84 L.D. 432.84	574.00(R) 950.80	430.00 203.00 (in progress)	73.04 172.74 245.78	430.00 203.00 (in progress)	223.04 341.22 564.26	100.00	S.G. 115.00 I.A. 103.48	L.A. 150.00 L.D. 168.48
2.	Residential Scheme at Mohanpuri (completed)	L.A. 5.80 L.D. 5.80	18.64 10.20	5.80 5.80	18.64 10.20 28.84	5.80 5.80	18.64 10.20 28.84	-	-	-
SUB-TOTAL II		L.A. 438.64 L.D. 438.64	592.64 961.00 1553.64	435.80 208.80	274.62	435.80 208.80	241.68 351.42 593.10	100.00	218.48	318.48
C. U.P. HOUSING AND DEVELOPMENT BOARD										
H A P U R										
1.	Phase I Residential and commercial scheme between Hapur and Meerut Road	L.A. 31.00 L.D. 31.00	135.00 90.00	31.00 26.00	129.467 14.960	31.00 26.75	129.467 22.88	25.00	-	L.A. - L.D. 7.92
SUB-TOTAL III		L.A. 31.00 L.D. 31.00	225.00	31.00 26.00	144.427	31.00 26.75	152.347	25.00	-	7.92
GRAND TOTAL (Sub-total I, II & III)		L.A. 1720.77 L.D. 1720.77	4762.08	1623.54 857.49	2455.507	1396.56 990.24	3322.817	225.00	S.G. 2115.00 I.A. 449.39	867.31

(R) - Revised

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NATIONAL CAPITAL REGION
PLANNING BOARD

ANNEXURE-III

Officers & Staff of the Board as on 31.3.1987.

<u>S/Shri/Smt/Km.</u>	<u>Date of joining the Board</u>	<u>Designation</u>	
1. M. Shankar	27.3.85	Member Secretary	The tenure was over on 6.10.86
2. B.N. Singh	3.6.86	Chief Regional Plr.	
3. S. Arunachalam	18.6.86	Sr. Planning Engr.	
4. T.K. Chatterjee	12.8.86	Regional Planner	Rtd. on 30.11.86
5. Smt. V.R.Sundaram	24.9.85	Deputy Director	upto 30.12.86
6. R.P. Rastogi	23.8.85	Associate Planner	
* 7. V.K. Thakore	12.7.85	Sr. Research Officer	
8. K.L. Sachar	3.2.86	Finance & Accts. Officer	
* 9. J.N. Burman	21.11.85	Asstt. Town Planner	
* 10. P. Jayapal	21.11.85	Asstt. Town Planner	
§ 11. Madhu Babu	12.3.87	Asstt. Town Planner	
12. J. Nagarajan	12.7.85	Research Officer	upto 22.8.86
13. Manmohan Singh	11.7.85	Research Assistant	
14. Gurdeep Singh	11.7.85	Planning Assistant	
15. P. Guruswamy	12.8.85	Planning Assistant	
16. P. Bose	12.8.85	PS to MS	
17. Miss. R. Mohna	8.7.86	PS to CRP	
18. M.L. Mahija	1.4.85	Jr. Accounts Officer	
19. J.P. Gill	7.5.86	Assistant	
20. V. Ramakrishnan	1.9.86	PA to RP	(upto 18.1.87)
21. Ragunath	8.7.86	PA to SPE	(upto 5.1.87)
22. V.K. Saxena	1.11.85	Accounts Asstt.	
23. Smt. K.K. Bhardwaj	1.1.86	Accounts Assistant	
24. C.S. Jones	12.8.85	PA to DD	(upto 3.3.1987)

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25.	S. Basak	1.9.86	PA to FAO	
26.	R.K. Sachdeva	1.9.86	PA to AP	(upto 29.1.87)
27.	P.S. Rana	12.8.85	LDC	
28.	Narender Kumar	12.8.85	LDC	(upto 2.11.86)
29.	N.K. Sabharwal	11.6.86	LDC	(upto 7.12.86)
30.	Sivarama Pillai	25.3.87	LDC	
31.	Smt. I. Suri	11.7.85	Steno Grade 'C'	(upto 10.7.86)
32.	Smt. R.R. Bajaj	1.5.86	Steno Grade 'D'	(upto 30.9.86)
* 33.	Mani Lal	17.2.85	Driver	
* 34.	Ramphal	22.11.85	Driver	
* 35.	Ravinder Kumar	19.8.85	Peon	
* 36.	Kartar Singh	19.8.85	Peon	
* 37.	B.S. Koranga	16.5.86	Peon	
* 38.	R.K. Huda	16.5.86	Peon	
** 39.	Bahadur Singh	10.6.86	Peon (DW)	
** 40.	Ranvir Singh	29.7.86	Peon (DW)	
** 41.	Ganesh Prasad	6.6.86	Peon (DW)	
** 42.	Prem Singh		Chowkidar	
** 43.	Krishna Arya		Sweeper	

* Regular Employees
 ** Daily Wage Employees

\$ On contract basis

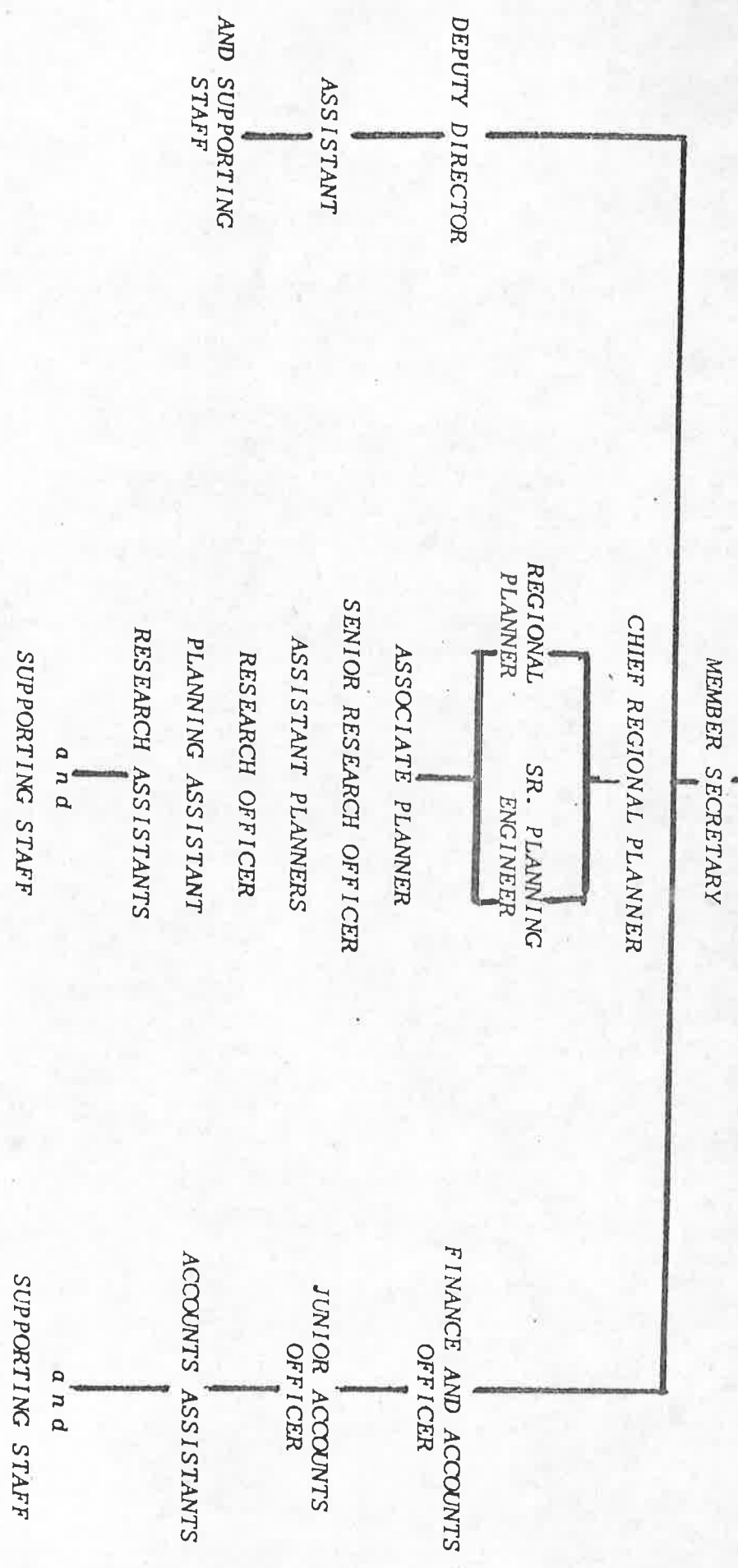
Others are appointed on deputation basis.

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STATEMENT SHOWING THE PARTICULARS OF
POSTS CREATED IN THE NCR PLANNING BOARD
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S. No.	Name of the post	No. of post	Scale of pay (pre-revised)	Scale of pay now adopted on the recommendation of the Fourth Pay Commission.
1	2	3	4	5
1.	Member Secretary	1	Statutory appointment to be made by Central Govt. from among the officers of the rank of Joint Secretary or above to the Govt. of India.	
2.	Chief Regional Planner	1	2250-2500	5100-5700
\$ 3.	Regional Planner	1	1500-2000	3700-5000
4.	Sr. Planning Engineer	1	1500-2000	3700-5000
5.	Associate Planner	1	1100-1600	3000-4500
\$ 6.	Sr. Research Officer	1	1100-1600	3000-4500
7.	Asstt. Town Planner	2	700-1300	2200-4000
\$ 8.	Research Officer	1	700-1300	2200-4000
9.	Dy. Director	1	1200-1600	3000-4500
10.	Finance & Accounts Officer	1	840-1200	2375-3500
11.	Senior P.A. (Private Secretary)	2	650-1040	2000-3500
12.	Research Assistant	1	550-900	1640-2900
13.	Planning Assistant	2	550-900	1640-2900
14.	Jr. Accounts Officer	1	550-900	1640-2900
15.	Accounts Assistant	2	425-800	1400-2600
\$ 16.	Steno Grade 'C'	2	425-800	1400-2600
\$ 17.	Steno Grade 'D'	4	330-560	1200-2040
18.	L.D.C.	3	260-400	950-1500
\$ 19.	Assistant	1	425-800	1400-2600
20.	Staff Car Driver	2	260-350	950-1500
* 21.	Peon	8	196-232	750-940
* 22.	Chowkidar	1	196-232	750-940
* 23.	Sweeper	1	196-232	750-940
\$ 24.	Hindi Translator	1	425-800	1400-2600
25.	Hindi Typist	1	260-400	950-1500
26.	Asstt. Traffic & Transportation Planner	1	On contract basis for a period of 1 year at a consolidated monthly emolument	

	* on Daily wage basis			
	\$ Vacant			



AGENDA ITEM NO.5

CO-OPTION OF THE VICE CHAIRMAN, DELHI DEVELOPMENT
AUTHORITY AS MEMBER OF NATIONAL CAPITAL REGION
PLANNING BOARD

According to sub-section (1) Section 5 of the NCR Planning Board Act, 1985, the Board may, at any time and for such period as it thinks fit, co-opt any person or persons as a member or members of the Board. A person co-opted under sub-section (1) shall exercise and discharge all the powers and functions of as member of the Board but shall not be entitled to vote.

2. As the members are aware, Delhi Development Authority is preparing Master plan and conceptual plan for the year 2001 for Delhi. These plans are required to be co-related with the Regional Plan of the NCR Planning Board and its implementation has to be watched through the DDA so far as the Delhi Union Territory is concerned. In view of the above, it is felt that it will be useful if the Vice-Chairman, Delhi Development Authority is co-opted as a member of the NCR Planning Board under sub-section (1) of Section 5 of the aforesaid Act.

3. The Board may kindly consider and approve the co-option of the Vice Chairman, Delhi Development Authority as a member of the Board.

ahw

AGENDA ITEM NO: 6Amendment of Regulations

The NCR Planning Board in their meeting held on 4.6.85 approved the National Capital Region Regulations, 1986 (Annexure-II) required to be framed under Section 36 of the NCR Planning Board Act, 1985. These regulations were notified with the approval of the Central Government on 3rd March, 1986. These Regulations inter alia provided for service conditions of the officers and employees of the Board.

2. Consequent on the revision of the pay scales by the Central Government on the recommendations of the Fourth Pay Commission, the Board has adopted the revised pay scales with the approval of the Central Government in respect of Groups 'A', 'B', 'C' and 'D' employees of the Board including House Rent Allowance pattern of the Central Government. While conveying the approval the Min. of Urban Development desired that necessary amendment to the Regulations may be made providing for the revised pay scales and HRA etc.

3. According to the Regulation 3 of the NCR Planning Board Regulations dated 3.3.86, the pay and all other allowances except HRA of officers and employees of the Board shall be same as those prescribed by the Central Government for its employees of similar status, therefore, no amendment is necessary for adoption of the new pay scales & other allowances except House Rent Allowance.

4. However, Regulation 5 regarding House Rent Allowance may be reworded as under:-

"5. House Rent Allowance:

The Officers and employees of the Board at Delhi shall be entitled to:-

- either twenty per cent (20%) of their pay in

the pre-revised scale of pay: (For officers who are in service prior to 1.10.86).

- or the slab rates of HRA as prescribed by the Government on the recommendations of the Fourth Pay Commission w.e.f 1.10.1986.

Other conditions for drawal of House Rent Allowance shall be the same as are applicable to the Central Government servants".

After the Board approves the amendment of the Regulation, this will be sent to the Government and after obtaining the approval of the Government, this will be notified. The Board may kindly consider and approve the amendment to the Regulations as proposed above.

11

AGENDA ITEM NO.7

DELEGATION OF FINANCIAL AND ADMINISTRATIVE
POWERS TO MEMBER SECRETARY

Under Rule 21 of the NCR Planning Board Rules, 1985 the Member Secretary has been designated to be the Chief Executive of the office of the Board. To begin with certain administrative and financial powers of the Board were delegated to the Member Secretary in the first meeting of the Board held on 4.6.85. These were notified in the Gazette of India vide notification No.K-14011/13/85-NCRPB dated 8.7.1985 (Annexure II). The delegated powers do not cover all cases of delegation as prescribed under the various Government rules namely, Delegation of Financial power Rules, GFRs, FRs and SRs. The Board is generally following the Government Rules as laid down in the NCR Planning Board Regulations. Therefore, it has become absolutely essential that the scheme of delegation of our rules should be in lines with that of the Government rules.

2. In the absence of adequate powers to Member Secretary, number of files have to be submitted to the Chairman for seeking approval of the incurring of petty administrative expenditure. In the initial stages, all items of expenditure could not be visualised and anticipated and, as such, could not be included in the orders of delegation of powers to the Member Secretary.

3. It is now proposed that in addition to the existing powers, Member Secretary will be delegated various financial and administrative powers available to an officer declared as the Head of the Department in the Government of India. Usually an officer exercising these powers is of the status of the Deputy Secretary/Joint Secretary to the Government of India. The Member Secretary in the Board is of the rank of the Joint Secretary and above to the Government of India, and as such, delegation of such powers to the Member Secretary is within the norms framed by the Government of India.

4. The Board may consider the delegation of the powers of the Head of the Department under various rules such as, Delegation of Financial powers Rules, GFRs, Fundamental & Supplementary Rules etc., to the Member Secretary in addition to the powers already delegated to him and approve the proposal.

affd

UNIFORM FISCAL POLICY FOR THE NATIONAL CAPITAL REGION

In order to achieve the objective of integrated development of the National Capital Region, a fair degree of uniformity is necessary in the fiscal policies of the participating States and the Union Territory of Delhi. The present diversity in the tax structures causes diversion of trade as well as shifting of manufacturing activity from one State to another. The Board had considered this matter while approving the Interim Development Plan and had suggested certain specific measures in order to achieve this uniformity.

An expert study was commissioned by the Board through the auspices of the National Institute of Public Finance and Policy whose report has since been received. The enclosed Annexure gives a comparative statement of the policies approved in the Interim Development Plan and the policies proposed in the study of the Institute. The issue was considered by the Planning Committee in their meeting held on 7.7.1987. The Planning Committee re-iterated the earlier broad recommendations in the Interim Development Plan that uniformity of tax structure was necessary to remove certain existing anomalies in trade and commerce in the Region. At the same time, the Committee felt that the exact mechanics of this could be worked out by a Committee of Finance Secretaries of the 3 participating States and the Union Territory of Delhi, representatives from Ministry of Finance, Home Affairs and Planning Commission under the Chairmanship of the Union Secretary for Urban Development. This Committee could take into consideration all the relevant factors and submit suitable recommendations for the approval of the Board.

Accordingly, it is proposed that the following Committee may be set up to recommend ways and means to bring about the desired uniformity in the tax structure of the National Capital Region to ensure harmonious and balanced growth and an adequate dispersal of trading and commercial activities.

1. Secretary, Ministry of Urban Development Chairman
2. Secretary (Finance), Government of Rajasthan
3. Secretary (Finance), Government of Uttar Pradesh

contd...

4. Secretary (Finance), Government of Maryland
5. Secretary (Finance), Delhi Administration
6. A representative of the Ministry of Finance
7. A representative of the Ministry of Home Affairs
8. A representative of the Planning Commission
9. Member-Secretary, NCR Planning Board

Convener

Lt Governor

only 29 cars when Sales Tax → Strong Request
Car
given were

Minister of Railway Shri Nathu Rao Scindia
dilemma - How can this be resolved
some sort of compensation / subsidy
loss of income.

Capital need not be

Economic Control
distribution of funds
Administration

↓
Delhi with always being
countermarket

3 towns

Shri M. R. Scindia

~~From~~ This committee will look
aspects relating to fiscal ~~commitment~~ aspects

ANNEXURE

COMPARATIVE STATEMENT OF FISCAL POLICIES APPROVED
IN THE INTERIM DEVELOPMENT PLAN AND AS PROPOSED BY HDPFP

Policies Approved in I D P

1. In order to achieve uniformity to some extent in tax structure in the National Capital Region being Union Territory should have minimum first-level of taxation

2. The tax structure of the Union Territory of Delhi should be so adjusted that the tax on industrial raw materials and industrial machinery should be slightly higher than that in the rest of the Region.
3. In order to prevent diversion of trade from the neighbouring States of Delhi, the present rate of CST of 2% levied on re-export of goods should be raised to 4% as is being levied in the three participating States of Haryana, Uttar Pradesh and Rajasthan

Policies Proposed by HDPFP

Fiscal Policies :

1. The existing structure of Sales Tax in Delhi needs to be replaced by the first point tax. A switch over to a first point tax would further bring down the level of Sales Tax rate in Delhi in comparison with that prevailing in the neighbouring States. For the sake of parity rates of Sales Tax at first point in Delhi would have to be raised. Sales Tax rates in Delhi should be raised to some extent in a few specific cases where diversion of trade is evidenced.

2. No levy of tax on raw material used by manufacturers in the entire region.

3. To have balanced regional development of the NCR and to have this Region as unified economic zones, the State exporting goods from NCR Zone should levy CST @ 2% on all exports. As a result, the exodus of goods to Delhi would come to a halt. This would lead to tremendous growth of trade in the NCR Districts because of the savings in transportation

It is felt that non-levy consignment tax is resulting in diversion of trade from other States to Delhi. It is, therefore, considered necessary that the Government of India take immediate steps to follow up action with regard to the 46th Constitutional Amendment Act, 1982 as per the recommendations of the Group of Chief Minister's Conference

costs to Delhi. Finally, this would cause export of goods directly from the NCR States yielding them the GST revenue.

4. Effective combined burden of the motor vehicle tax and passengers and goods tax in Delhi is substantially raised to bring it at par with other states of the NCR.

5. To evolve NCR as a unified economic region Octroi should be abolished (To compensate the loss of revenue, the States comprising NCR could adopt entry tax along the lines recommended by the Gujarat Taxation and Enquiry Commission, 1982. The entry tax should not be levied on raw materials).

6. Additional tax could be levied on the preferences of the persons owning property in Delhi (This could be in the form of additional tax on new commercial properties constructed in Delhi for commercial and industrial purposes)

7. A token levy in the form of congestion tax of Rs. 10/= per truck entering the Union Territory of Delhi could be considered.

5. Incentives :

- i) States should give only reasonable tax concessions for industries in backward areas both for attracting them and for making them competitive until they are established and can stand on their own.
- ii) Blanket exemption to small scale sector is not desirable.

6. Infra-structure facilities

Power, transport, communication, roads, warehouses are conspicuously meagre in most of the areas of NCR except Delhi. The most important hindrance again is the inadequate availability of electricity. Thus, alongwith fiscal measures, it is necessary to provide the requisite infra-structure in these areas.

Specific studies are required to be carried out for each commodity on the basis of flow of goods to and from Delhi in relation to congestion of traffic in the City. On the basis of the recommendations of these studies, new wholesale markets in the designated areas outside Delhi would have to be developed by NCRPB or by an agency similar to CIDCO.

AGENDA ITEM NO. 9

DRAFT REGIONAL PLAN 2001 - NCR

One of the functions of the National Capital Region Planning Board is to prepare a Regional Plan for the National Capital Region. In the Fifth Meeting of the Board held on 17th February, 1987, it was decided that the Draft Regional Plan should be prepared by mid-1987. Accordingly, a Draft Regional Plan (Annexure IV) has been prepared for approval of the Board. The Draft Regional Plan prepared in accordance with the provisions contained in Section 10 of the NCR Planning Board Act, 1985 after taking into consideration the decisions taken in the deliberations of various meetings of the Planning Committee and the Board.

The Board may kindly consider and approve the Draft Regional Plan for publication and inviting objections and suggestions from the public in accordance with Section 13 of the NCR Planning Board Act, 1985 and Rule 23 -27 of the NCR Planning Board Rules, 1985 notified under the Act.

MINUTES OF THE 9TH MEETING OF THE PLANNING
COMMITTEE OF THE NCR PLANNING BOARD HELD AT
11 A.M. ON 8TH JUNE, 1987 IN THE OFFICE OF
THE N.C.R. PLANNING BOARD, NEW DELHI.

The following members were present :

Members Of Planning Committee :

1. Shri K.K. Bhatnagar, Member Secretary, NCR Planning Board - Chairman.
2. Shri R.L. Pardeep, Jt. Secretary (UD), Ministry of Urban Development.
3. Shri A.P. Singh, Secretary (Urban Development), Govt. of Uttar Pradesh, Lucknow.
4. Shri R.N. Parashar, Chief Administrator, HUDA, Chandigarh.
5. Shri Ganga Das, Secretary (L&B), Delhi Administration.
6. Shri N.S. Johri, Chief Town Planner, Govt. of Uttar Pradesh, Lucknow.
7. Shri G.T. Narayan, Dy. Director General (TP), Deptt. of Telecommunications, New Delhi.
8. Shri V.K. Sood, Director (Power), Deptt. of Power, Ministry of Energy, New Delhi.
9. Shri D.P. Gupta, Chief Engineer, Min. of Surface Transport, New Delhi.
10. Shri B.N. Singh, Chief Regional Planner, NCR Planning Board - Member Convenor.

Other Participants :

1. Shri K.T. Gurumukhi, Town & Country Planner, TCPO, New Delhi.
2. Shri R.K. Sharma, Sr. Town Planner, Govt. of Rajasthan, Jaipur.
3. Shri N. Sankara Raman, Suptdg. Engineer (Roads), Min. of Surface Transport, New Delhi.
4. Shri S.M. Mittal, Exe. Director (MTP), Ministry of Railways, New Delhi.
5. Shri A.K. Garg, Distt. Town Planner (IUDP), Haryana.

6. Shri R.C. Malhotra, Director (TPS), Deptt. of Telecommunications, New Delhi.
7. Dr. R.A. Chansarkar, Director, DTRL, Min. of Defence, New Delhi.
8. Shri R.S. Bhatia, Asstt. Engineer (MTP), Min. of Railways, New Delhi.

Officers Of The Board :

1. Shri S. Arunachalam, Sr. Planning Engineer, NCR Planning Board.
2. Shri R.P. Rastogi, Associate Planner, NCR Planning Board.
3. Shri V.K. Thakore, S.R.O., NCR Planning Board.
4. Smt. V.R. Sundaram, Dy. Director, NCR Planning Board.
5. Shri K.L. Sachar, FAO, NCR Planning Board.
6. Shri P. Jayapal, Asstt. Town Planner, NCR Planning Board.
7. Shri J.N. Barman, Asstt. Town Planner, NCR Planning Board.
8. Shri Madhu Babu, Asstt. Town Planner, NCR Planning Board.

AGENDA ITEM NO. 1

CONFIRMATION OF THE MINUTES OF THE LAST MEETING
OF THE PLANNING COMMITTEE HELD ON 28.1.87.

The minutes of the meeting held on 28.1.1987 were confirmed after considering the suggestions for an amendment made on behalf of the D.D.A. under Agenda Item No.5.

Location Policy For Industry : Shri J.C. Gambhir, Director (Planning), Delhi Development Authority, who could not attend the meeting, had sent, through his representative, modification in the Draft Minutes of Agenda Item

No. 5 under the heading 'Location Policy For Industry' as under :

The following from "he narrated".....this policy" is to be replaced by - "He suggested that the above policy is not practical specially the idea that all industrial applications to be referred to a sub-group to be constituted by the Board".

The above was considered by the Committee and it was felt that the minutes of the meeting truly reflected the deliberations as made in the meeting. However, the committee felt that if the DDA wanted to raise additional issues, the same could be brought for consideration in the next meeting of the Committee.

The Chairman reviewed the progress of the various items included for action in the minutes of the last meeting and briefed the committee on the progress of various surveys and studies that have been undertaken. Action taken on other items are as follows :

1. Presentation of Interim Development Plan To The Prime Minister

The Chairman stated that presentation of the IDP was now scheduled to be made on the 26th June, 1987. Shri G.T. Narayan, Deptt. of Telecommunications requested that the Planning Committee should also have an opportunity of viewing the audio visual presentation made to the Prime Minister. Chairman agreed with the proposal and it was decided to have the AV presentation in the next meeting of the Planning Committee.

2. Surveys and Studies Taken-up By The Board In Connection With The Preparation Of The Regional Plan-2001.

The Committee noted the position given in Agenda note for Item No. 2.

The Committee also noted the progress on the following :

- a) Purchase of a Micro-Computer - A micro-computer was likely to be made available by UNDP through the Ministry of Urban Development.
- b) Documentary Film on the NCR Plan - Preparation of a documentary film on Draft NCR Plan will be taken up after the Draft Plan is approved by the Board.
- c) Printing of IDP and the Draft Regional Plan - The Interim Development Plan had since been printed and the Draft Regional Plan will be printed after the approval by the Board.

3. Action Plan To Implement The Proposals Contained In The I.D.P. Approved By The Board.

- a) Population Policies - The Chairman requested the representatives of the State Governments to finalise the Master Plan for towns identified for priority development and also take immediate steps for creation of Planning Cell for each Sub-region.
- b) Potential Surveys of the Priority Towns - Shri B.N. Singh informed that data relating to towns falling in U.P. Sub-region have already been

received. The Chief Administrator, HUDA assured that the data in respect of Haryana towns will be made available within 2 weeks. Shri Sharma, Sr. Town Planner, Town & Country Planning Department, Rajasthan, informed that the data relating to Rajasthan Sub-region for the remaining towns will be made available in a week's time.

4. Consideration Of The Conceptual Plan For Delhi-2001.

The Chairman informed the Committee that the views of the NCR Planning Board as approved in the meeting held on 17th February, 1987 had been intimated to the Ministry of Urban Development.

5. Criteria For Selection Of Counter Magnet Areas

The Chairman informed the Committee that the study on Selection of Counter-magnet Areas has been assigned to the School of Planning & Architecture. They have already commenced the study on May 15, 1987. An Interim Report is expected by 30th June, 1987 and the findings would be incorporated in the Draft Regional Plan.

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6. Suggestions of Lt. Governor of Delhi regarding restriction on further growth of Delhi and to bring about the dispersal of population in the National Capital Region :

The Chairman stated that the suggestion of the Lt. Governor, Delhi have already been referred to the State Governments for their comments. No comments have been received from any State Government so far. Shri Pardeep stated that the State Government's views must be made available now as the preparation of the Draft Regional Plan for the NCR and also Delhi Master Plan was going to be finalised very soon and, therefore, the State Government should not lose this opportunity of making their views/comments available to the NCR Planning Board.

7. Examination of the Suggestions to levy cess to cover the development cost of telecommunication facilities while deciding the sale price of developed plots :

No further action was called for.

8. Co-option of Membership :

No further action was called for.

9. Institutional Arrangements for Implementing the NCR Plan :

The Chairman stated that this item is being considered separately as one of the Agenda items in this meeting.

AGENDA ITEM NO. 2

PREPARATION OF DRAFT REGIONAL PLAN FOR NCR

Initiating the discussions, the Member-Secretary gave a brief resume of the action taken for the preparation

of the Draft Regional Plan and also various studies undertaken through professional Consultants. He also stated that a number of Study Groups had been constituted on various aspects of the Plan and several meetings had taken place and it was expected that the Draft Regional Plan would be ready by the second week of July, 1987. In view of the studies undertaken and also deliberations of the various Study Groups, some of the new policies which need deliberation of the Planning Committee for incorporation in the Plan would be discussed in this meeting and also in subsequent meetings. Shri Johri, Chief Town & Country Planner, Uttar Pradesh, wanted to know whether all the studies would be completed before finalising the Draft Regional Plan. Shri B.N. Singh gave the status of the various studies and stated that in all cases, an interim report/final report would be available to the Office of the Board before finalisation of the Draft Regional Plan. Shri R.N. Parashar, Chief Administrator, HUDA, pointed out that the main basis for the Draft Regional Plan being the IDP, which stands approved by the Board, it would come in the way of incorporating the views of the Haryana Government in permitting large and medium scale industries in the Delhi Metropolitan area towns. He specifically pointed out the case of Faridabad and stated if the policy of not allowing large and medium scale industries were adhered to, there would be un-surmountable difficulties in the development of Faridabad which has already come up as a major industrial centre in the State. He also added that the same difficulties would be felt in Kundli, Bahadurgarh and Gurgaon. Shri Johri stated that the Planning Committee in its various deliberations had consciously made recommendations of not allowing medium and large scale industries in DMA towns as this would result in a still greater growth of Delhi and its adjoining area creating serious difficulties. Thus, with a view to curb the growth of Delhi and DMA, the IDP

contains recommendations of not allowing medium and large scale industries and he was of the view that no change was needed in the above policy.

AGENDA ITEM NO. 3

DEMOGRAPHIC PROFILE : NCR - POPULATION
ASSIGNMENT FOR SUB-REGIONS AND PRIORITY
TOWNS

The Chairman stated that there appeared to be a need for having a re-look at the population assignment made in the IDP for the priority towns for the year 2001.

Shri Parashar recommended to retain the population assignment for Rohtak as 5 lakhs against the revised proposed population assignment of 4 lakhs; for Palwal as 3 lakhs against the proposed revised population assignment of 2 lakhs and for Rewari as 1.10 lakhs against 1.00 lakh since these towns have immense potentialities and thus measures could be initiated for their induced development. Shri Sharma of Rajasthan stated that the population assignment of Alwar originally envisaged as 5 lakhs might be retained while he pleaded for higher assignment of population for Bhiwadi, which was coming up as a vast industrial township. Shri Johri of Uttar Pradesh agreed with the revised population assignment for Meerut, Hapur, Bulandshahr and Khurja. The representative of Rajasthan Government also pleaded for inclusion of 2 more towns, namely, Behror and Shahjahnpur as priority towns.

Shri Pardeep wanted to know whether the population assignment made for Delhi and DMA were also being revised. The Chairman clarified that the changes proposed

were only in respect of the priority towns and not for Delhi UT and DMA towns and added that this has become necessary in view of additional data having become available indicating the growth potential of the priority towns. Shri A.P.Singh, Secretary, U.P. said that the number of priority towns were short-listed in many deliberations of the meeting of the Planning Committee and it would not be feasible to include more towns as priority towns in view of the resource crunch and the need for developing a few towns intensively to achieve the objectives of NCR Plan. Shri B.N. Singh stated that the Draft Regional Plan would only identify regional centres while there would be 3 more hierarchy of settlements to be identified by the respective State Govts. while preparing the Sub-regional Plans after the approval of the regional plan for the NCR. After long discussion, the following population assignments were approved for the priority towns:

Priority Towns	Revised Population Assignment - 2001	Addl. Assigned population against projected population.
Meerut	15.50 lakhs	5.22 lakhs
Hapur	4.50 lakhs	2.47 lakhs
Bulandshahr	5.00 lakhs	2.65 lakhs
Khurja	3.00 lakhs	1.79 lakhs
Sub-Total Uttar Pradesh	28.00 lakhs	12.13 lakhs
Panipat	5.00 lakhs	2.14 lakhs
Rohtak	5.00 lakhs	2.03 lakhs
Palwal	3.00 lakhs	2.37 lakhs
Rewari	1.10 lakhs	0.33 lakhs
Dharuhera	0.75 lakhs	0.75 lakhs
Sub-Total Haryana	14.85 lakhs	7.62 lakhs
Bhiwadi	1.15 lakhs	1.15 lakhs
Alwar	5.00 lakhs	2.15 lakhs
Sub-Total Rajasthan	6.15 lakhs	3.30 lakhs
TOTAL	49.00 lakhs	23.05 lakhs

AGENDA ITEM NO. 4

ECONOMIC PROFILE OF NCR - EMPLOYMENT STRUCTURE

Shri B.N. Singh explained the proposals contained in the Agenda item. He stated that in view of the need for developing the priority towns for induced development, it was essential to have a broad idea not only of the magnitude of population but also about the employment that need to be generated for the balanced development of the NCR. With the approval of the strategy for developing a few urban centres beyond DMA, the composition of the working force in various activities in the identified priority towns need to be approved. This would enable the respective State Governments to initiate the development process with associated physical development and also fiscal incentives for creation of greater employment opportunities and also to attract entrepreneurs to set up industries, business and trade and commerce in such priority towns as an alternative to Delhi and DMA towns. After due deliberations, the Committee was of the view that the sectoral structure of the working population for the various priority towns shown in the agenda appeared to be in conformity with the objectives of the NCR Plan. The State Governments were, however, requested to consult their respective Industry Department and make their recommendations available to the NCR Planning Board in the next 2 weeks, so that the future "Economic Profile for the NCR" could be finalised and incorporated in the Draft Regional Plan.

AGENDA ITEM NO. 5

REGIONAL LAND USE

The Chairman stated that the existing landuse pattern of the NCR has been analysed on the basis of

landsat imageries, aerial photographs and Survey of India topo sheets. He particularly mentioned that the Board had been greatly benefitted by the collaboration with the Director, DTRL - Dr. R.A. Chansarkar in computing and analysing the landuse data. Dr. Chansarkar briefly explained the technique adopted for analysing the data and stated that the landsat imageries could be used as a reliable and effective tool for monitoring the landuse changes on a temporal level. He added that five years would be a good period for such monitoring that would clearly reflect the landuse changes taking place in the NCR. Based on the analysis made by the DTRL, the land utilisation in the NCR and its Sub-regions were presented to the meeting by Shri B.N. Singh. The forest cover as per landsat imagery was only 1.15%, which was very low against the national forest policy of the Government of India. The analysis has suggested bringing the barren land and culturable waste land under forest cover thus raising the area under forest from 1.15% to about 7.5%. It was felt that a minimum of 10% forest cover by the year 2001 would be a reasonable goal to be achieved. Social forestry may have to be pursued as one of the measures in achieving this objective.

Shri B.N. Singh explained the existing landuse plan and also proposed landuse plan 2001 which contained proposals for land for agriculture, forest, urban development and green belt/green wedge and green areas along the major transport routes. The Committee felt that in view of the employment opportunities to be created in non-agricultural sector, the conversion of existing agricultural land for non-agricultural uses was inevitable but measures must be devised to maximise the utilisation of available land and also use of barren land and culturable waste for urban expansion.

Land For Forest : The Committee felt that the proposals to increase the forest cover by identifying culturable waste, rocky area; planting suitable species

in sparsely forested zones, identifying alternate sources of energy for fuel, and conserving existing forests seemed to be adequate and rational. The policy measures suggested in the paper should also include areas for scenic and historic value and places of cultural heritage.

Land For Urban Development : The suggestion of working out land required for urban development based on the 4 different density norms for various types of settlements was considered. Shri Pardeep was of the view that the Draft Regional Plan should prescribe certain optimum density to be achieved rather than disaggregating them on different density patterns for various sizes of settlements. Shri Parashar suggested that in order to achieve an optimum density, group housing might be resorted to on land belonging to governmental agencies. After discussions, it was agreed that efforts should be made to achieve gross density of 80 to 125 persons per hectare in all the NCR towns.

It was also felt that the controlled area or regulated areas for DMA towns should be the same as identified in its areal boundary. This would require extending the controlled area concept in respect of some of the towns by the concerned State Governments.

Shri G.T. Narayan stated that there was a need for coordinated action for laying of underground infrastructure facilities like laying cables for power and Telephone and also other services like water supply & Sewerage. He suggested drawing up guidelines by the Board in this regard.

Green Belt/Green Wedge and Green Areas along the major Transport Routes : The concept of the green belt/green wedge as contained in the agenda paper was approved. As regards green areas along the major transport routes, it was felt that the width of 1 km. on either side of the highway would be difficult to be achieved. It was decided

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that the width of the green areas along the National Highways may be 300m. and that along the State Highways 200m. Shri Parashar stated that the Government of Haryana was already enforcing a green belt of 30m. width on either side along the National Highways by acquiring such land and including the cost of the same in the development of the adjoining towns.

The other policy proposals regarding regional landuses as indicated in the agenda note were also approved.

AGENDA ITEM NO. 6

POWER DEVELOPMENT - NORMS AND PROPOSALS

The Chairman stated that the Study Group on Power had recommended setting up of the NCR Electricity Authority with a view to meet the requirement of power for the NCR. However, the Region is under the Electricity Boards of the State Government. He requested the representatives of the State Governments to obtain the views of the State Governments on the proposal to set up a unified NCR Electricity Authority and communicate the same to the Board quickly. The representative of the Department of Energy supported the concept of a unified set-up of an Electricity Authority for the NCR. He stated that this would ensure availability of power, uniformity of power tariff and, such an authority if set up, could undertake generation as well as distribution. He clarified that since the area does not have potential for generation, generation could be taken up by another body such as the NTPC on behalf of the proposed authority.

The Chairman explained the norms proposed to be adopted for forecasting the power demand in the NCR. The methodology for working out the category-wise load forecast in the different sub-regions for 2001 on the norms suggested in the agenda was approved.

AGENDA ITEM NO. 7MANAGEMENT STRUCTURE FOR IMPLEMENTATION
OF N.C.R. PLAN

The Chairman stated that management structure for creating Sub-Regional Area Development Authority proposed by the Planning Committee in the meeting held on 28.1.1987 was approved by the Board in its meeting held on 17.2.1987. However, with a view to make the final proposals there was a need to look into the existing planning and development management machinery in each State. He stated that in the 3 participating States and also Delhi UT, different management structure existed. In case of Haryana, there is a central authority for development while the State Town and Country Planning Department is responsible for all planning aspects of the urban areas. In case of Uttar Pradesh, there were development authorities, municipal corporations, municipalities and institutions like Housing Boards, Jal Nigam for specialised developmental activities and the planning was dealt as per provisions of different enactments. However, the Special Area Development Authority enactment passed by the UP Government has provision to make any area as a 'special area' for the purposes of planning development. Chairman enquired the representative of the Government of Uttar Pradesh about the conflict arising out of the existence of Development Authorities in the 'Special Area'. Shri Johri clarified that 'development areas' are usually not included in the 'special area' and both authorities may act simultaneously in their jurisdictions. In Rajasthan, since only part of one District was included as a Sub-region of the NCR, namely, Alwar, an Alwar Development Authority could be a suitable

agency for planning and development. In the context of the variations, there was a need for clearly evolving a suitable management structure, which may not be uniform for all the 3 States so that at least centralised planning for Sub-region was done. This aspect needs to be studied in detail.

It was decided that the State Government would examine this aspect carefully and intimate their reactions quickly to the Board.


Any Other Items :

1. The representatives of the State Governments were requested to furnish upto-date list of local bodies/ authorities which would be required in connection with the Publication of Draft Regional Plan for inviting objections/suggestions thereon.
2. The State Government Representatives were requested to install a sign board indicating the boundaries of NCR as per design circulated in the meeting.

The meeting ended with a vote of thanks to the Chair.

No.: K-14011/2/87-NCRPB
NATIONAL CAPITAL REGION PLANNING BOARD
Government of India,
New Delhi, dated the 15th June, 1987.

Copy forwarded to all Members of the Planning Committee and all the participants in the meeting for appropriate action.


(B. N. SINGH)
Member - Convenor
Chief Regional Planner

AT/16

MINUTES OF THE 4TH MEETING OF THE PROJECT SANCTIONING
AND MONITORING GROUP HELD ON 28TH APRIL, 1987 UNDER THE
CHAIRMANSHIP OF SECRETARY (URBAN DEVELOPMENT).

The following were present:-

1. Shri D.M. Sukthankar, Secretary, M/o Urban Development, New Delhi.
2. Shri S. Panchapakesan, Jt. Secretary(F), M/o Urban Development, New Delhi.
3. Shri R.L. Pardeep, Jt. Secretary(UD), M/o Urban Development, New Delhi.
4. Shri A.D. Goyal, Sr. Research Officer, Planning Commission, New Delhi.
5. Shri R.N. Parashar, Director(Town Planning) and Chief Administrator, H.U.D.A., Chandigarh.
6. Shri A.P. Singh, Secretary, Urban Development Deptt., Govt. of Uttar Pradesh, Lucknow.
7. Shri P.B. Mathür, Secretary, Housing & Urban Development Deptt., Government of Rajasthan, Jaipur.
8. Shri Ganga Das, Secretary(L&B), Delhi Administration, I.P. Estate, New Delhi.
9. Shri E.F.N. Riberio, Chief Planner, TCPD, Vikas Bhawan, New Delhi.
10. Shri K.K. Bhatnagar, Member-Secretary, NCR Planning Board.
11. Shri B.N. Singh, Chief Regional Planner, NCR Planning Board, New Delhi.
12. Shri K.L. Sachar, F.A.O., NCR Planning Board, New Delhi.

AGENDA ITEM NO:1

APPRAISAL OF ON-GOING SCHEMES AND REQUIREMENT
OF FUNDS DURING 1987-88.

The Member-Secretary explained the proposals contained in the note and also the progress of implementation of the on-going schemes. After detailed discussion on the various items in respect of each town, the Group decided to release financial assistance during 1987-88 representing 50% share of the expenditure involved, as under:

For 1987-88 from
NCRPB

Haryana

1. Gurgaon	i) Sector 15 now numbered 18,19,20 (on-going) - Industrial	Rs. 125 lakhs
	ii) Link Road for Sector 4 & 7 (new scheme)	Rs. 25 lakhs
2. Panipat	i) Sector 11 & 12 (Residential on - going)	Rs. 50 lakhs
	Total:	Rs. 200 lakhs

Rajasthan

1. Alwar	i) Railway Overhead Bridge (new scheme)	Rs. 25 lakhs
	Total:	Rs. 25 lakhs

Uttar Pradesh

1(a) Meerut Housing & Development Board	i) Scheme No.6 - Residential Scheme (on-going)	Rs. 100 lakhs
	ii) Scheme No.7 - Residential Scheme (on-going)	Rs. 25 lakhs
	Sub-total:	Rs. 125 lakhs
1(b) Meerut - Meerut Development Authority	Pallav Puram Residential Scheme (Phase 2) (on-going)	Rs. 175 lakhs
	Total:	Rs. 300 lakhs
	GRAND TOTAL:	Rs. 525 lakhs =====

AGENDA ITEM NO.2

IDENTIFICATION OF NEW SCHEMES IN PANIPAT, ALWAR AND MEERUT FOR FUNDING DURING 1987-88 TO COINCIDE WITH THE COMMEMORATION OF 40TH ANNIVERSARY OF INDIA'S INDEPENDENCE

2. The Members desired to know the quantum of funds available and the nature of schemes which could be included for funding under the schemes to be inaugurated on the 40th anniversary of India's Independence. Shri B.N. Singh clarified that the schemes should be normally of the nature of infrastructural facilities and/or* should be completed within a period of one year - to be inaugurated, on 15th August, 1987 and to be completed by 15th August, 1988.

creation of
economic acti-
vities and

As regards funds, it was clarified that 50 per cent of the total expenditure involved would be funded by the Board and the size of the schemes should be such which could be completed within a period of one year. Shri A.P.Singh promised to furnish the project within a week. Shri Parashar stated that a scheme for industrial complex in Panipat was being proposed and detailed project will be submitted soon to the Board. The Urban Improvement Trust, Alwar had proposed a commercial complex scheme in Shivaji Park in Alwar and Shri Mathur was requested to look into this Scheme and forward the same to the Board as soon as possible.

AGENDA ITEM NO.3

DEFAULT IN THE PAYMENT OF INTEREST ON LOANS
DURING THE YEAR 1986-87:

3. The position brought out in the note regarding default in the payment of interest on loans by the participating States was noted. Some members requested that the amount involved being meagre, it could be condoned. However, the Member-Secretary pointed out that the Government Rules and the Rules framed by the Board regulate such items and the Group had no power to condone. He, therefore, requested the members to take remedial action urgently and arrange for payment of the balance of the interest ~~payable by them.~~ *due and outstanding from them.*

4. The representatives from the States ~~had~~ raised the issue regarding reduction in the rate of interest ~~for~~ ^{on} loans given by the Board for NCR Schemes and also requested for providing grants for non-remunerative schemes to be undertaken under the NCR schemes. As regards rates of interest, it was pointed out that the rates are fixed by the Central Government (Ministry of Finance) and according to the Rules framed by the Board, the same rates are charged for the loans granted by the Board. It was also pointed out that the rate of interest was less if the loans were given to the State Government, whereas the rates were higher if the loan was released directly to the Implementing

Agencies. It was also pointed out that the Board had decided to release the money directly to the Implementing Agencies in order to ensure that there was no delay in utilising the money by the Implementing Agencies. The Haryana representative stated that during the current year, the Board might release the loan assistance to the State Government of Haryana instead of HUDA. He was requested to write to the Board accordingly. The members emphasised that the request for reduction in the rate of interest on loans provided by the Board might be taken up with the Ministry of Finance for favourable consideration.

AGENDA ITEM NO.4

COMPUTER ANALYSIS - SETTLEMENT SYSTEM IN N.C.R.

5. The Group considered the proposal for entrusting a study on Settlement System to the Physical Research Laboratory, Ahmedabad at an expenditure not exceeding Rs. 10,000 and approved the same.
6. The Meeting ended with a vote of thanks to the Chair.

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MINUTES OF THE MEETING OF THE PROJECT SANCTIONING
AND MONITORING GROUP HELD ON 7.7.1987 IN THE ROOM
OF SECRETARY (UD), NIRMAN BHAWAN, NEW DELHI

* * * * *

The following were present :-

1. Shri D.M. Sukthankar, Secretary, Ministry of Urban Development, New Delhi.
2. Shri S. Panchapakesan, Jt. Secretary (F), Ministry of Urban Development, New Delhi.
3. Shri R.L. Pradeep, Joint Secretary (UD), Ministry of Urban Development, New Delhi.
4. Dr. H.D. Goyal, Deputy Adviser, (H&UD), Planning Commission, New Delhi.
5. Shri P.B. Mathur, Secretary, Housing & Urban Development, Govt. of Rajasthan, Jaipur.
6. Shri Shankar Aggarwal, Jt. Secretary, Housing & Urban Development, Govt. of Uttar Pradesh, Lucknow.
7. Shri R.S. Malik, Spl. Secretary, Town & Country Planning Deptt., Govt. of Haryana, Chandigarh.
8. Shri ^{Neeru} Singh, Jt. Secretary (I&B), Delhi Administration, New Delhi.
9. Shri K.T. Gurumukhi, Town & Country Planner, TCPO., New Delhi.
10. Shri K.K. Bhatnagar, Member Secretary, NCR Planning Board, New Delhi.
11. Shri B.N. Singh, Chief Regional Planner, NCR Planning Board, New Delhi.

The Member Secretary explained the proposals contained in the agenda item which related to two projects namely Commercial Complex, Alwar (Rajasthan) at the cost of Rs.29.31 lakhs and Transport Nagar Complex, Panipat (Haryana) at the cost of Rs.128.85 lakhs received from the State Governments in connection with the commemoration of 40th India's independence and Pt. Jawahar Lal Nehru centenary.

..... /-

- 2 -

The proposals were considered by the Committee and approved. It was also decided that these projects will be financed by the Board under the usual terms and conditions prescribed in the NCR Planning Board Rules, 1985.

No.K-14011/18/87-NCRPB
National Capital Region Planning Board
7th Floor, 'B' Wing, IOC Bhawan,
Jalpath, New Delhi

New Delhi, the 8th July 1987

Copy forwarded to all members of the Group and participants in the meeting for information.

Pran Nath

(PRAN NATH)
Deputy Director

AI/21

MINUTES OF THE MEETING OF THE PERSONNEL GROUP
HELD AT 11 A.M. ON 28TH APRIL, 1987 IN THE
ROOM OF SECRETARY (UD), NIRMAN BHAWAN, NEW DELHI.

The following were present:

1. Shri D.M. Sukthankar, Secretary, M/o Urban Development, Nirman Bhawan, New Delhi.
2. Shri S. Panchapakesan, Joint Secretary(F), M/o Urban Development, Nirman Bhawan, New Delhi.
3. Shri R.N. Parashar, Director (Town Planning) and Chief Administrator, HUDA, Chandigarh.
4. Shri P.B. Mathur, Secretary, Housing & Urban Development Govt. of Rajasthan, Jaipur.
5. Shri A.P. Singh, Secretary(Urban Development), Govt. of Uttar Pradesh, Lucknow.
6. Shri K.K. Bhatnagar, Member-Secretary, NCR Planning Board, New Delhi.
7. Shri B.N. Singh, Chief Regional Planner, NCR Planning Board, New Delhi.

AGENDA ITEM NO.1

REVISION OF SCALE OF PAY OF RESEARCH OFFICER IN THE
BOARD FROM Rs.650-1200 to Rs.700-1300(PRE-REVISED)

The Group considered the note for revision of scale of pay of Research Officer in the Board from Rs.650-1200 (Rs.2000-3500) to Rs.700 -1300(Rs.2200 - 4000) and approved the upgradation of the scale to Rs.700 -1300 for the post of Research Officer in the Board.

AGENDA ITEM NO.2

ADOPTION OF THE SCALES OF PAY AS REVISED BY THE CENTRAL
GOVT. ON THE RECOMMENDATIONS OF THE 4TH PAY COMMISSION

The Group noted the position brought out in the note. Shri Panchapakesan clarified that if any officer or employee chose to opt for the pre-revised scale of pay, then he would be governed by the allowances, etc.(including 20% HRA) as applicable earlier. The Chairman also clarified that for the purpose

of fixation of pay in the revised scale the terms and conditions as prescribed by the Central Government would be followed by the Board.

AGENDA ITEM NO.3

SELECTION FOR THE POST OF REGIONAL PLANNER
IN THE BOARD

The Member-Secretary gave a brief account of the qualifications, experience, etc. of the candidates who had applied for the post of Regional Planner. After considering in detail the educational qualifications, the length of experience relevant for the duties assigned to the post of Regional Planner in the Board and the Confidential Reports in respect of the 12 candidates, the Group was of the unanimous view that Shri R.P. Rastogi is most suitable for the post of Regional Planner. The Group, therefore, approved the selection of Shri R.P. Rastogi as Regional Planner in the scale of Rs.3700 - 5000.

Consequent on the selection of Shri R.P. Rastogi as Regional Planner, there would be a vacancy of Associate Planner in the scale of Rs.3,000 - 4,500 in the Board. In view of the urgency to fill up the vacancy without any delay in order to ensure that the minimum complement of staff is available for accomplishing the task of preparing the time bound Draft Regional Plan, the Group also considered whether any of the candidates considered by them for the post of Regional Planner could be selected for the post of Associate Planner. Keeping in view the educational qualifications, experience and the job requirement of the post of Associate Planner in the Board, the Group approved the selection of Shri Sanjay B. Verma (sponsored by Government of Haryana) for appointment as Associate Planner in the scale of Rs. 3000 - 4500 in the Board.

The Meeting ended with a vote of thanks to the Chair.

K-14011/12/87-NCRPB
NATIONAL CAPITAL REGION PLANNING BOARD
7th Floor, 'B' Wing, IOC Bhawan,
Janpath, New Delhi -110001.

DT. 1-5-1987.

Copy forwarded to all Members of the Group and participants in the Meeting for information.


(Mrs. V.R. Sundaram)

AI/23

MINUTES OF THE MEETING OF THE PERSONNEL GROUP
HELD ON 7.7.1987 IN THE ROOM OF SECRETARY (UD)
NIRMAN BHAWAN, NEW DELHI

The following were present:-

1. Shri D.M. Sukthankar, Secretary (UD),
Ministry of Urban Development,
New Delhi.
2. Shri S. Panchapakesan, Jt. Secretary (F),
Ministry of Urban Development, New Delhi.
3. Shri P.B. Mathur, Secretary, Housing & Urban
Development, Govt. of Rajasthan, Jaipur.
4. Shri Shankar Aggarwal, Jt. Secretary, Housing &
Urban Development, Govt. of Uttar Pradesh,
Lucknow.
5. Shri R.S. Malik, Spl. Secretary, Town & Country
Planning Deptt., Govt. of Haryana, Chandigarh.
6. Shri K.K. Bhatnagar, Member Secretary,
NCR Planning Board, New Delhi.

AGENDA ITEM

UPGRADATION OF THE POST OF FINANCE AND ACCOUNTS
OFFICER, NCE PLANNING BOARD.

The Member Secretary explained the proposal by
giving justification for upgradation of the post of the
Finance & Accounts Officer to the Grade of Rs.3000-4500
from Rs.2375 to 3500. After detailed discussions the
proposal was approved.

No.K-14011/12/87-NCRPB
National Capital Region Planning Board
7th Floor, 'B' Wing, ICC Bhawan,
Janpath, New Delhi

New Delhi, the 8th July 1987

Copy forwarded to all members of the Group and
participants in the meeting for information.

Pran Nath
(PRAN NATH)
Deputy Director

[Published in the Gazette of India, PART III—SEC. 4 on May 24, 1986]

NCR PLANNING BOARD

New Delhi, the 3rd March 1985

No. C.11031/1/86-NCRPB.—In exercise of the powers conferred by Sec. 37 of the National Capital Region Planning Board Act, 1985 the Board hereby makes, with the previous approval of the Central Government, the following regulations:—

1. Short title and commencement :

- (i) These regulations may be called the National Capital Region Planning Board Regulations, 1986.
- (ii) These shall become operative from the date on which the Board come into existence.

2. Definition :

In these regulations unless the context otherwise requires :

- (i) 'Act' means the National Capital Region Planning Board Act, 1985.
- (ii) 'Board' means the National Capital Region Planning Board as constituted under Section 3 of the Act.

3. Salaries & allowances of officers and employees :

The pay and all other allowances except House Rent Allowance of officers and employees of the Board shall be the same as those prescribed by the Central Government for its employees of similar status.

4. Grant of leave :

In the matter of grant of leave the officers and employees of the Board shall be governed by the Central Civil Service (Leave) Rules, 1972 as applicable to the employees of the Central Government and orders issued by the Central Government thereunder from time to time.

5. House Rent Allowance :

The officers and employees of the Board at Delhi shall be entitled to twenty per cent (20%) of their pay as House Rent Allowance. Other conditions for the House Rent Allowance shall be the same as are applicable to the Central Government servants.

6. Pension, gratuity, retirement benefits and general provident fund :

The officers and employees of the Board shall be entitled to pension, gratuity, other retirement benefits and general provident fund, at such rates and under such conditions as are applicable to officers and employees of the Central Government in the corresponding grades.

7. Other conditions of service :

Unless expressly provided for in these regulations to the contrary, the other terms and conditions of service of the officers and employees of the Board shall be governed, as far as may be, by the Fundamental and Supplementary Rules, General Financial Rules, Central Civil Service (Temporary Service) Rules, 1965, Central Civil Services (Medical Attendance) Rules, 1944, Central Government Employees Group Insurance Scheme, 1980, etc., and by orders and decisions issued by the Central Government under those rules from time to time as applicable to the employees of the Central Government.

8. Conduct Rules :

The Central Civil Service Conduct Rules, 1955 as amended from time to time, will be applicable to the employees of the Board.

9. Disciplinary proceedings :

The Central Civil Service (Classification, Control and Appeal) Rules, 1965 as amended from time to time shall apply in relation to the employees of the Board as they apply in relation to the employees of the Government. Powers under these rules vested in the President shall be exercised by the Chairman and those of Head of Department by the Member Secretary.

10. Deputationists :

The officers and employees of the Board who are working in the Board on deputation from the Central or the State Governments or from the local, development or other statutory authorities or undertakings of the Central or State Governments shall be governed by those terms and conditions which are specified in the order of deputation by the appointing authority. With respect to other terms and conditions which are not specified in the order, they will be governed by the above regulations applicable to the employees of the Board.

M. SHANKAR, Member Secy.

राष्ट्रीय राजधानी क्षेत्र योजना बोर्ड
नई दिल्ली, दिनांक 3 मार्च, 1986

सं० सी-11031/1/86-रा० रा० क्षेत्र योजना बोर्ड—
राष्ट्रीय राजधानी क्षेत्र योजना बोर्ड, राष्ट्रीय राजधानी क्षेत्र
योजना बोर्ड अधिनियम, 1985 की धारा 37 द्वारा प्रदत्त
अधिकारों का प्रयोग करते हुए, केन्द्रीय सरकार के पूर्व
प्रामाण्य से, निम्नलिखित विनियम बनाती है, अर्थात्:—

राष्ट्रीय राजधानी क्षेत्र योजना बोर्ड
नई दिल्ली, दिनांक 3 मार्च, 1986

1. संक्षिप्त नाम और प्रारम्भ :

- (i) इन विनियमों का संक्षिप्त नाम राष्ट्रीय राजधानी
क्षेत्र योजना बोर्ड विनियम, 1986 है।
- (ii) ये नियम तब से प्रवृत्त होंगे जब से बोर्ड का
गठन किया गया है।

2. परिभाषाएँ :

इन विनियमों में, जब तक कि संदर्भ से स्पष्टता प्रविष्टित
न हो,—

- (i) "अधिनियम" से राष्ट्रीय राजधानी क्षेत्र योजना
बोर्ड अधिनियम, 1985 अभिप्रेत है;
- (ii) "बोर्ड" से धारा 3 के अधीन गठित राष्ट्रीय राज-
धानी क्षेत्र योजना बोर्ड अभिप्रेत है।

3. अधिकारियों और कर्मचारियों के वेतन और भत्ते :

बोर्ड के अधिकारियों और कर्मचारियों के वेतन और
भत्ते निराकरा भत्ता से मिले सभी अन्य भत्ते नहीं होंगे
जो केन्द्रीय सरकार ने अपने समतुल्य हैसियत से कर्मचारियों
के लिये विहित किये हैं।

4. छुट्टी की मंजूरी :

छुट्टी की मंजूरी के विषय में बोर्ड के अधिकारी और
कर्मचारी केन्द्रीय सरकार के कर्मचारियों की लागू केन्द्रीय
शिफ्ट सेवा (छुट्टी) नियम, 1972 और केन्द्रीय सरकार
द्वारा उसके अधीन समय-समय पर जारी किये गये आदेशों
से शासित होंगे।

गवान निराकरा भत्ता :

यदि स्थित अधिकारी और कर्मचारी मकान
अपने वेतन का 20 प्रतिशत के
अनुपात में मिले अन्य भत्ते
वर्गों की लागू हों।

6. वेतन, भत्ता, सेवा विनियमों और भावना अधिनियम :

बोर्ड के ऐसे अधिकारी और कर्मचारी जो बोर्ड पर कार्य
रहे हैं, वे बोर्ड के वेतन, भत्ता, सेवा विनियमों और भावना
के अधिनियमों से शासित होंगे जो लागू होंगे वेतन, भत्ता,
अन्य सेवा विनियमों और भावना अधिनियमों
के द्वारा होंगे।

7. सेवा की अवधि :

जब तक कि इन विनियमों के विहित सेवा विनियमों
अनुसार अन्यथा निर्धारित नहीं किया जाता, बोर्ड के अधि-
कारियों और कर्मचारियों की सेवा के अन्य विनियम और
भत्ते, जहाँ तक संभव हो, युक्त और समतुल्य नियम, सामान्य
वित्तीय नियम, केन्द्रीय शिफ्ट सेवा (अवकाश) सेवा, नियम,
1965, केन्द्रीय शिफ्ट सेवा (शिफ्टिंग पर भर्ती) नियम,
1944 केन्द्रीय गवर्नरी कर्मचारी पुनर्वास योजना, 1980
हस्ताक्षर और केन्द्रीय सरकार द्वारा समय-समय पर
जारी विनियमों के अधीन जारी किये गये ऐसे आदेशों की
विनियमों के अनुसार, जो केन्द्रीय सरकार के अधिकारियों
की लागू हों, लागू होंगे।

8. शपथ लेना :

समय-समय पर प्रमाणित केन्द्रीय शिफ्ट सेवा
साधारण नियम 1955 में के कर्मचारियों की लागू होंगे।

9. अनुशासनिक कार्यवाही :

समय-समय पर प्रमाणित केन्द्रीय शिफ्ट सेवा और
अन्य नियमों के कर्मचारियों के अनुशासन में लचीलापन
लागू होंगे जिस प्रकार वे सरकार के कर्मचारियों के अनुशासन
में लागू हैं। इन विनियमों के अधीन अनुशासन में विहित
अधिकारों का प्रयोग समतुल्यता और विनियमों की शक्तियों
का प्रयोग सरकार से मिले द्वारा किया जाएगा।

10. प्रतिनियुक्त अधिकारी :

बोर्ड के ऐसे अधिकारी और कर्मचारी जो बोर्ड से केन्द्रीय
सरकार या राज्य सरकारों से या केन्द्रीय या राज्य सरकार
के स्थानीय, निवास या अन्य लागू प्राधिकारों या उद्यमों
से प्रतिनियुक्त पर कार्य कर रहे हैं, इन विनियमों और शर्तों
से शासित होंगे जो उनके पूर्व अधिकारियों द्वारा प्रतिनियुक्ति
के आदेश में विहित किये गये हों। इन विनियमों और
शर्तों की अवधि, जो आदेश में विहित किये गये होंगे
हैं, वे बोर्ड के कर्मचारियों की लागू, उपयोग विनियमों से
शासित होंगे।

भा० सं०,
सदस्य-सचिव

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Annexure III

(To be published in the Gazette of India Part III-Section 4)

No.K.14011/13/85-NCR
NATIONAL CAPITAL REGION
PLANNING BOARD
'C' WING, NIRMAN BHAVAN

NEW DELHI, dated the 8th July, 1985.

N O T I F I C A T I O N

In exercise of the powers conferred by Section 32 of the National Capital Region Planning Board Act, 1985 the National Capital Region Planning Board, (hereinafter called the Board) hereby makes the following delegations:

I: Functions, powers and duties under clauses (b), (c) & (e) of sub-section 2 of section 22:

To identify individual projects against schemes approved by the Board for funding by the Board, to release instalments for the same and for carrying out a constant review of the progress of the projects, the functions powers and duties of the Board are delegated to the following persons in the Group:-

PROJECT SANCTIONING AND MONITORING GROUP:

- | | | |
|------|--|-------------|
| i) | Secretary, Ministry of Works and Housing. | - Chairman. |
| ii) | Secretary (Expenditure) or his representative. | - Member. |
| iii) | Adviser, Planning Commission or his representative. | - Member. |
| iv) | Joint Secretary in charge of NCR in the Ministry of Works and Housing. | - Member. |
| v) | Secretaries-in-charge of the NCR work in the States and Delhi UT. | - Member. |
| vi) | Chief Planner, TCPO, New Delhi. | - Member. |
| vii) | Member Secretary, NCR Planning Board. | - Convenor. |

1) The group is empowered to sanction loans and grants for the implementation of sub-regional plans and project plans and for the development of the counter-magnet area identified by the Board in accordance with the rules.

2) The group will also exercise the powers to commission surveys and studies on behalf of the Board.

II. Delegation of functions, powers and duties under Section 31 of the Act:

Subject to the limits and conditions mentioned below the Board delegates its powers to create posts and appoint persons against such posts to the following persons in the Group to be called the Personnel Group:-

PERSONNEL GROUP:

- i) Secretary, Ministry of Works and Housing. - Chairman.
 - ii) Secretary (Expenditure) or his representative. - Member.
 - iii) Secretary in charge of NCR work in the State of Haryana. - Member.
 - iv) Secretary in charge of NCR work in the State of Rajasthan. - Member.
 - v) Secretary in charge of NCR work in the State of Uttar Pradesh. - Member.
 - vi) Member Secretary, NCR Planning Board. - Convenor.
- a) The Group will have full powers to create posts in the Board.
 - b) Selection of personnel for appointment against posts, the maximum of scale of pay of which exceeds Rs.1,600/- will be made by the Group and appointment of persons selected by the Group will be made after it is approved by the Chairman.
 - c) Selection and appointment of posts the maximum of scale of pay of which is equal to or less than Rs.1,600/- will be made by the Member Secretary.

III. Delegation of powers under Sub-section 22(2)(a):

The functions, powers and duties of the Board (i) to incur administrative expenses of the Board under clause(a) of sub-section 2 of section 22, and (ii) to exercise administrative control and to administer the terms and conditions of employment of the officers and employees of the Board as stipulated in the regulations, is delegated to the Member Secretary as detailed below:-

Sl. No.	Nature of power	Extent of power.
1.	Operation of bank accounts	(a) power to open accounts for the Board in accordance with the rules.

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A III / 3

1	2	3
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2. Purchase of Office furniture and equipments.

(b) to authorise any employee or employees of the Board to operate the account individually or jointly.

Full powers for purchase, running and maintenance and repairs of machinery including office furniture and equipments.

3. Purchase of stationery.

Full power.

4. Telephone charges.

Full power. Full power to get new telephone connection, payment of rental and charges, etc.

5. (a) creation of posts in the Board.

Full power to be exercised by the Personnel Group.

(b) selection of candidates for appointments in the Board.

(a) selection and appointment to posts the maximum of scale of pay of which is more than Rs. 1500/- will be done by the Personnel Group and will be subject to approval by Chairman.

(b) selection to other posts to be made by the Member Secretary.

(c) appointments in the Board.

(a) All appointments to posts, the maximum of scale of pay of which exceeds Rs. 1500/- will be made in the name of Board.

(b) In respect of others the appointments will be made by the Member Secretary.

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6. Purchase and maintenance of staff car/vehicles. Full power for purchase, running, maintenance and repair.
7. Laundry charges. Full power.
8. Telephone charges. Full power.
9. Power to grant conveyance allowances to employees of the Board. Full power. The rate and condition of the allowance should be the same as are applicable to the Central Govt. servants.
10. To grant honorarium to persons working in the Board as also persons other than those working in the Board for services rendered by them to the Board. Upto Rs.1000/- in each case.
11. To grant earned leave and other kinds of leave to staff working in the Board. Full power.
12. Grant of leave salary advance. Full power.
13. To sanction advance of TA to the staff working in the Board including LTC as applicable under the Govt. rules. To the extent admissible under the Central Govt. rules.
14. To exercise all powers of controlling officer for travelling allowance bills. Full power.
15. To incur expenditure on entertainment during:
 - (a) Meetings of the Board. Full power.
 - (b) Meeting of the Group. Full power.
 - (c) Meetings of the Committee. Subject to a ceiling of Rs.2000/- in a quarter.
 - (d) Other official meetings. Subject to a ceiling of Rs.1000/- per month. The above ceilings will

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- be subject to relaxation by the Chairman if the circumstances so warrant.
- full power.
16. To sanction purchase of drawing stationery. full power.
17. To advertise in newspapers and journals. full power.
18. To sanction adv. to eligible staff. full power.
19. Sanction of permanent advance to staff. full power.
20. Grant of advance to employees of the Board for the purchase of bicycle. full power.
21. To incur expenditure on provision of liveries to Peons/drivers. Full power.
22. Approval of tour of officers/employees of the Board
i) through entitled class. full power.
ii) journey by air or by class higher than the entitled class. full power.
iii) reimbursement of actual expenditure of boarding/ lodging for officers/employees while on tour in special cases subject to ceiling as prescribed in Govt. rules. full power.
23. Non-interest bearing advance: Full power.
Festival advance/Medical advance in special cases/ advances for natural calamities subject to rules as prescribed in G.R. 1963, FR/SR and other instructions issued by the Govt. of India from time to time. full power.
24. Comprehensive insurance of vehicles.

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(16)

27

A 27/6

any other administrative expenses of the
Board the power to incur which has not been included in
the list above shall be incurred by the Member Secretary
with the approval of the Chairman of the Board.

M. S. Harker
(M. S. HARKER)
MEMBER SECRETARY (H.C.)

To

The Manager,
Government of India Press,
Calcutta.

Jones/

DRAFT REGIONAL PLAN 2001 NATIONAL CAPITAL REGION

(Approved by the Board on July 21, 1987)



**National Capital Region Planning Board
Ministry of Urban Development
Government of India**

July, 1987

PLANNING TEAM

K.K. Bhatnagar
Member Secretary

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Chief Regional Planner

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Senior Planning Engineer

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Regional Planner

R.P. Rastogi
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Assistant Planner

D. Madhu Babu
Assistant Planner

Gurdeep Singh
Planning Assistant

Administrative, Finance and Secretarial Assistance

Vijayalakshmi R. Sundaram (upto 16.6.87)
Deputy Director

Pran Nath
Deputy Director

Pranab Bose
PS to Member Secretary

R. Mohana
PS to Chief Regional Planner

Sivarama Pillai
LDC

K. Srinivasan
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LDC

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Driver

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Finance & Accounts Officer

M.L. Makhija
Junior Accounts Officer

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Accounts Assistant

Kamlesh K. Bhardwaj
Accounts Assistant

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PA to F&AO

Amarjit Kaur
LDC

Anika Kushwa
LDC

Ram Phal
Driver

Group D

Kartar Singh

Balwir Singh

Ganesh Prasad

Sat Pal

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Ramkishan Huda

Ranbir Singh

Prem Singh

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INTRODUCTION

1. The manpower of a country is an inexhaustible national resource and should be provided with an healthy and fruitful environment. Any city which is not able to provide such an environment for its inhabitants would open the floodgates of serious social, economic, environmental and law and order problems. The phenomenal growth of population of Delhi, if allowed to grow un-checked, can create such a situation for its inhabitants. A lasting solution in keeping with the glory and prestige of our National Capital, can only be found in an integrated and all round development of a region around Delhi. The preparation and publication of the draft regional plan for the National Capital Region is the first significant step towards achieving that objective.

2. The need for regional approach for the National Capital Planning was realised as early as 1959 when the draft Master Plan for Delhi was prepared, followed by the final Master Plan, approved by the Government of India in 1962. The Master Plan for Delhi recommended for the first time that development planning for Delhi should be conceived with regional dimensions and, inter alia, recommended setting up of a statutory National Capital Region Planning Board for ensuring balanced and harmonised development of the Region. Taking cognisance of this recommendation, the Government of India set up a High Power Board in 1961 in the nature of an advisory body with the Union Minister of Home Affairs as its Chairman. This Board was subsequently reconstituted in 1973 under the Chairmanship of Union Minister of Works & Housing with Chief Ministers of Haryana, Rajasthan and Uttar Pradesh and Lt. Governor of Delhi and other senior officials as members. The High Power Board, was entrusted with the task of coordinating the development of urban and rural areas in the National Capital Region (NCR) within the framework of a comprehensive regional plan, to be formulated by the Board, and in securing the collaboration of the concerned State Governments in the implementation of the regional plan. As a result of the deliberations in the meetings of the High Power Board, the Town and Country Planning Organisation, Ministry of Urban Development, prepared a draft Plan for the National Capital Region in 1973. The Plan had the basic objective to contain the population of Delhi within manageable limits by diverting Delhi-bound migrant population to the ring towns around Delhi and decentralisation of certain economic activities into different towns within the Region for balanced development. The High Power Board approved the Regional Plan in September, 1973. However, in the absence of a statutory backing and commensurate resources, the development could not be ensured as envisaged in the Regional Plan. It was thus considered essential to have a suitable legislation to control and regulate all developmental activities in the areas falling in the Region.

3. In 1980, the need for revitalisation of the NCR was seriously felt. The matter later assumed urgency because of the fact that the population projections which the 1962 Master Plan for Delhi had envisaged by 1981 were surpassed from 5.3 million to 5.7 million. In addition, the exercises taken up for the revision of Delhi Master Plan also projected a huge requirement of funds not only to meet the growing backlog in essential services but also the future demand. The Minister of Works and Housing addressed letters on the 12th May, 1981, to the Chief Ministers of the participating States and Lt. Governor of Delhi suggesting for their consideration the setting up of an effective authority with statutory powers to undertake systematic planning and development of the NCR with time-bound programme of development.

4. Finally, the National Capital Region Planning Board Act, 1985 (which replaced the Ordinance issued earlier in this regard) was passed by the Parliament in January, 1985 after the State Legislatures of Haryana, Uttar Pradesh and Rajasthan had passed resolutions by virtue of Article 249, 250 and 252 of the Constitution for setting up the Board and received the assent of the President on the 9th February, 1985. With the passing of the Act by the Parliament and constitution of the National Capital Region Planning Board (NCRPB) on the 28th March, 1985, a long awaited need has been fulfilled. Composition and functions of the Board may be seen at Annexure-I.

5. The NCR Planning Board has set about its task in a business like manner right from its inauguration by the Prime Minister on 4th June, 1985. The Board has met six times and discussed vital policy issues relating to the development of the Region. The Planning Committee, another statutory body within the Act, has met nine times. The preparation of a regional plan for the NCR was an exercise being attempted almost for the first time in the Country. The Board, therefore, felt that it would be proper to prepare an Interim Development Plan even though it may not have any statutory backing. Accordingly, an Interim Development Plan was approved by the Board in August, 1986. The Plan was later approved by the Prime Minister as well. This Plan was primarily an inter-related policy frame comprising various sectors of development and provides the basis for conceptualising the proposals to be included in the Draft Regional Plan 1987–2001.

After the Regional Plan has been approved by the Board, the participating States/UT will prepare plans for their respective Sub-Regions.

The Board will prepare functional plans for proper guidance of the participating States and the Union Territory simultaneously.

6. Section 7(a) of the National Capital Region Planning Board Act, 1985, provides for the preparation of a Draft Regional Plan by the Board and its publication under Section 12(1) for inviting objections and suggestions from the public. Section 10 of the Act broadly lays down the parameters and subjects which have to be included in the Plan. The preparation of the Plan has involved intensive consultations with representatives of the participating States/UT belonging to various Departments and Senior Officials of the Ministries of Central Government. A list of Study Groups constituted for this purpose is included at Annexure-II. The Board also commissioned a number of expert studies as indicated in Annexure-III which have provided a vital input in the recommendations made in the Plan. Thus, the Plan is the result of the combined labour of a large number of individuals, institutions and finally, the limited staff of the Board who have really toiled very hard. We owe to them our deepest sense of gratitude. The Board, in its meeting held on 21st July, 1987 has approved the Draft Regional Plan for the National Capital Region for inviting objections and suggestions from public and local authorities within the Region as per Sections 12(1) and 12(2) of the NCR Planning Board Act, 1985. We would consider our efforts as successful in case the Draft Plan is subjected to close scrutiny by the various interested groups of people and people at large and we are able to incorporate their suggestions in the final Plan so that it is owned by them and then implemented as their Plan.

NATIONAL CAPITAL REGION AND POLICIES FOR DEVELOPMENT

1.1 Physical Setting

The National Capital Region delineated for the purpose of being developed in a balanced and harmonious manner such that the rate of inflow of migrants into Delhi is substantially reduced over years in order that the population of Delhi UT is contained to 112 lacs by 2001 AD, spreads, with the Delhi UT as its core, over parts of the States of Haryana, Rajasthan and Uttar Pradesh. It lies between 27°18' and 29°29' north latitude and 76°09' and 78°29' east longitude.

The prominent natural features of the Region are the Ganges skirting it as its eastern boundary, the Yamuna traversing through north-south forming the boundary between Uttar Pradesh and Haryana, and the sand dunes and barren low hills of the Aravalli chain and its outcrops in the west, flat topped prominent and precipitous hills of the Aravalli range enclosing fertile valleys and high table lands in the south-west, and the rolling plains dominated by rainfed torrents in the south. The rest of the Region is plain with a general slope of north-east to south and south-west.

i) Constituents of the NCR

The administrative units and their extent are as under: (Figure 1)

- a. Union Territory of Delhi (1,483 sq. km).
- b. Haryana Sub-region (13,413 sq.km) comprising Faridabad, Gurgaon, Rohtak and Sonapat districts; Rewari and Bawal tehsils of Mahendragarh district and Panipat tehsil of Karnal district. This accounts for 30.33% of the area of the State.
- c. Rajasthan Sub-region (4,493 sq.km) comprising six tehsils of Alwar district, namely, Alwar, Ramgarh, Behror, Mandawar, Kishangarh and Tijara. The area under the Region is 1.31% of the total area of the State.
- d. Uttar Pradesh Sub-region (10,853 sq.km) comprising three districts namely, Meerut, Ghaziabad and Bulandshahr. About 3.68% of the area of Uttar Pradesh is under the Region.

ii) Morphology

The National Capital Region in terms of morphology can be divided into

- a. The Ganga—Yamuna Doab,
 - b. Area West of Yamuna—the alluvial plains and extension of the Aravallis and the sandy region.
- a. The Ganga—Yamuna Doab

This seemingly featureless plain lacks topographic prominences and the monotony of the physical landscape is broken at places by the river bluffs, levees, dead arms of river channels and the river channels themselves. The Region is covered by new alluvium (Khader) and older alluvium (Bhangar). Bhangar is found all over the 'doab' while there are finger like extensions on khader along the main streams. Due to the

Figure—1:

NCR: CONSTITUENT AREAS



presence of fertile soil, level land and canal irrigation, the area is intensively cultivated and supports a high density of population.

b. Area West of Yamuna

The slope of the alluvial plains from the Siwaliks is towards the south and south west upto the Najafgarh drain and then towards the north. North of Delhi, the old high bank of the Yamuna forms the summit level of the plain. In the extreme south of these plains are the outliers of the Aravallis which are intensely folded and eroded. One arm of the Aravallis forms a continuous range terminating in Delhi and in between, there are only low hills to the west of Bawal and Rewari towns. The Aravallis are quartzite rocks, with numerous ravines on the western slope, densely forested in some areas and bare in the other. North of the Aravalli extensions, the whole tract is traversed by a number of sand ridges which mostly run north-south and form higher prominences in the physical landscape.

iii) Hydorlogy

a. The Region in general is a part of the well intergrated drainage system of the Ganga. Almost, all streams follow north-west, south-east course concomitant with the slope of the land. The extremely gentle gradient almost all over the Region restricts the degradational activities of the streams. Wide floodplains and high banks are common features in the course of the Ganga and the Yamuna, alongwith silt and clay deposits.

The canal system primarily to irrigate the doab area, has been aligned between the four rivers of the area. Earlier, the area east of Bulandshahr in the Ganga—Kali doab was not irrigated by any canal but a new canal is under construction which would help in reclaiming more land for intensive cultivation.

b. The main river of the alluvial plain is the Yamuna. The khader of the Yamuna lies between the present water course and the old high bank of the river. Western Yamuna Canal is the major canal of the Region which irrigates the area north of the Najafgarh drain. The only major river in the extension of the Aravallis and the sandy region is the Sahibi, which flows in a south-west—north east direction. It is ephemeral and ends up in the sandy region of Haryana, but sometimes during heavy monsoons, it drains into the Najafgarh depression and joins the Yamuna. The outliers of the Aravallis also have numerous seasonal streams which erode the bare rocks giving rise to ravines, which are more on the western side. In the depressions of the rocky area, water stagnates resulting in the formation of lakes.

1.2 Resources

i) Human

As of 1981, the Region accommodated a total population of 191.92 lacs in 94 urban settlements and 6677 villages. Of the total population, as much as 36% was in the U.P. Sub-region followed by 32% in the Delhi UT and about 26% in the Haryana Sub-region.

The urban component of the population was 91 lacs accounting for 47.4% and the rest nearly 101 lacs lived in rural areas. The density of population in the Region was 634 persons per sq. km against the all India average of 221 in 1981. Of the constituents, Delhi UT is the most congested with a density of 4192 followed but distantly by the U.P. Sub-region with 642. In regard to male-female ratio, Delhi UT is the least balanced with 808 females for 1000 males against the Region's average of 840 and the Nation's 934.

ii) Water

The Region is well endowed with water resources both surface and sub-surface. The main sources of surface water supply in the NCR are the rivers, canals and lakes. The rivers Yamuna and Ganga meet bulk of the water requirements. The other important rivers are the Hindon, the Kali and the Sahibi. Various canals

which irrigate lands are: the eastern and western Yamuna canals, the upper Ganga canal, the Agra canal and the Jawahar Lal Nehru canal. The prominent lakes in the Alwar region are the Siliserh and Kaduki.

The existing irrigation network in the NCR is well established and has been in use since several decades. The areas located left of the river Yamuna have very less rainfall and are frequented by droughts. The western Yamuna canal, its branches and distributaries, form the life lines for agricultural as well as for drinking purposes. In the Uttar Pradesh Sub-region, the eastern Yamuna canal irrigates 'doab' area between the Yamuna and the Hindon and, the upper Ganga canal irrigates rest of the 'doab' plains.

Ground water resource is mainly controlled by geology and precipitation in the area. 85% of the annual precipitation occurs during monsoon period. The rainfall ranges between less than 50 cm in south western portion of the Region to more than 75 cm in the north western portion. Around Delhi on the north and north east, it is about 180 cm.

Geologically, the quarternary alluvium is the most favourable lithology for the aquifer systems. The southern portion of the NCR has precambrian Delhi group of rocks and the older alluvium increases in general from east to west. The general water table depth ranges between 6 to 15 metres below the ground level. Most of the borewell water comes from aquifers. However, there are two to five confined aquifer systems with great water potential. These systems go up to a depth of 230 metres and, most of the tubewells are dug into these systems. The recharge of these systems is mainly through rivers and precipitation. The ground water quality varies from place to place depending on the local geological setting.

iii) Soil

The Region basically has alluvial soils ranging between hard clay—clayey loam—sandy loam and sandy soils. Based on the morphological setting such as nearness to the riverine track, fertility, etc. there are certain local names given to these soils viz. khadar, bangar, dabar, bhur, usar, reh, etc. There are alkaline and saline soils which occur as patches particularly near the canals.

In Alwar district of Rajasthan Sub-region, there are three different types of soils viz. (a) Loam Soil—in parts of Alwar and Behror tehsils, (b) Sandy soils—in Tijara, Behror, Mandawar and Kishangarh—these are less fertile owing to their moisture retaining capacity and (c) clay—loamy in low lying tracks such as beds of tanks in Ramgarh and Alwar tehsils. The Uttar Pradesh Sub-region has rich loamy soils which are very fertile. However, in Bulandshahr and Khurja region, there are certain 'usar' or sandy soils which are barren. The Meerut and Ghaziabad districts are mainly covered by older alluvium with occasional alkaline efflorescences. The soils very close to the rivers Yamuna and Ganga are sandy in nature. Sandy patches are the main problem areas in the Uttar Pradesh Sub-region. In the Haryana Sub-region, there are alluvial soils which range between totally sandy to loamy and clayey soils. Hard clays and sandy soils are not very fertile. Hard clay soils are predominant in Gurgaon district. Sandy soils dominate in Jhajjar area. Saline encrustations and water logging are the main problems of the area. The soils in Faridabad, Rohtak, Sonapat and Panipat (Karnal Distt.) are fertile sandy loams and light coloured alluvial tracts. However, these soils are deficient in nitrogen and organic matter. In Delhi Sub-region, the soils are described as (a) Khader (low lying strip along the Yamuna)—a fertile silty loam; (b) Bangar (old alluvium) constitutes north western portion of Delhi, fertile soils with high moisture holding capacity; (c) Dabar tract (of low lying areas) mainly saline and alkaline with low fertility (West of Yamuna); (d) Kohi tract (hilly) — sandy loams which are less fertile.

iv) Forests

On account of pressure of population and extensive cultivation, very little has been left of the natural vegetation. The study based on satellite imageries reveals that only 1.2% of area of the Region is under forest cover. The forest cover is of "Tropical thorn type" ranging from open shunted forests to xerophytic bushes occurring both on plains and hills. The common tree types are acacias, khair, dhak, kikar and babul. The forest cover in the NCR is important, more as a source of fuel and fodder than as timber.

In the Rajasthan Sub-region, the forest cover is about 4.3%, mostly accounted by hill forests of Alwar and Behror tehsils. The forests are mainly "dry deciduous type" with dominant tree types being 'Kikar' and

'Dhak'. Other tehsils have only shrub vegetation. The hill forests of Alwar and Behror have been classified as Reserved and Protected forests. The forest cover on the hills could be described as dense or sparse. The dense forests are confined to narrow valleys in the hills where there is sufficient supply of water. The upper areas of the hills support only thorny shrub type forest (sparse) with occasional big trees. In the Uttar Pradesh Sub-region, forests account for only 1% of the area. This again is due to extensive use of land for cultivation. This region has dry deciduous forests. The dominant trees are Sal, Shisam and Teak. In the drier parts, the forests are of thorn type. The Haryana Sub-region accounts for the least amount of forest cover. Most of this forest cover is concentrated in Gurgaon district. 'Khair' and 'Dhak' form the important tree species in the Aravalli hills. The other forest cover is mainly in the form of orchards in the plains. In the Delhi Sub-region, owing to low rainfall and the gravelly substratum, the upper strata of the soil does not support any dense perennial vegetation. The forest cover of 1.8% is mainly due to the forest on the ridge and other recreational areas in Delhi urban area.

v) Minerals

The mineral wealth in the Region is very limited and is restricted to constructional materials with the exception of Alwar district where industrial minerals like copper and asbestos are mined. The major minerals found in the district are baryte, building stone and copper. Important baryte deposits are at Sahanpuri, Basti, Jundoti and Khora-Makroda. The annual production is over 2000 tonnes. The quartz-rich phyllilite, Schists and Sericitic quartzite (State Stones) provide excellent building material. The copper deposits are found in Bhaguni and Kho-Dariba. The other minor mineral deposits are asbestos, china clay, felspar, fire clay, soap stone and quartz. In the Uttar Pradesh Sub-region there are notable mineral deposits. The minerals such as Kankar and sands are used for constructional purposes. In the Haryana Sub-region too, there are no notable mineral deposits.

China clay (kaolin) deposits occur in Faridabad district. Gurgaon contributes silica and sand. Mahendragarh is known for slate deposits. Rohtak, Sonapat and Panipat areas do not have any mineral deposit. The Delhi Sub-region is known for building stones (Delhi quartzites) and sand.

1.3 Perspective

This Draft Regional 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 revised with the year 2001 as the perspective.

1.4 Objective

With the regional population remaining at the projected 325 lakhs of which 234 lakhs will be urban and 91 lakhs rural by 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. 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 overall 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 kept conducive to a healthy growth. 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, which, therefore, without being a point of attraction for the people from outside will become so attractive so as to attract the core area population to these places

voluntarily.

The success of the entire proposals contained in the Draft Regional 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.

The phenomenal growth of industries and the growth of public sector offices, especially in the decade 1971-81, apart from the growth of Government Offices, have been identified as the most important employment generating activities in Delhi. To curb the unwanted growth in these sectors, locational policies have been proposed.

The other important economic activity which has also exhibited strong elements of centralisation in Delhi is the whole-sale and distributive trade. In the case of these trades, the large differential in the local tax structure favouring Delhi has been identified as one of the most important factors for such concentration. Unless steps are taken to bring about some uniformity in the tax structure of the NCR, all efforts to woo or wean whole-sale and distributive trades away will not bear any result. Therefore, efforts would be made to rationalise tax structure in the entire Region.

Transport is essentially looked upon as a service. However, it has also its economic by-products. Sound transport policy will not only service the population but also prove to be a catalyst for growth of the identified areas and will 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 bypass the area. The bypass will open up economic opportunities 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 and social infrastructure and also for the development of power. The policies are, by and large for three distinct zones viz. Delhi UT, Delhi Metropolitan Area excluding Delhi UT and area beyond Delhi Metropolitan Area within the NCR. (Figure 2).

With the aforesaid objectives and suggested strategies in view, a package of policy directive for various developmental aspects to be adopted are enumerated in the following paragraphs.

1.5 Goal

- i) Evolving harmonised policies for control of land use and development of infrastructure in the NCR so as to avoid any haphazard development of the Region.
- ii) Achieving a manageable Delhi by 2001 A.D.

1.6 Policies

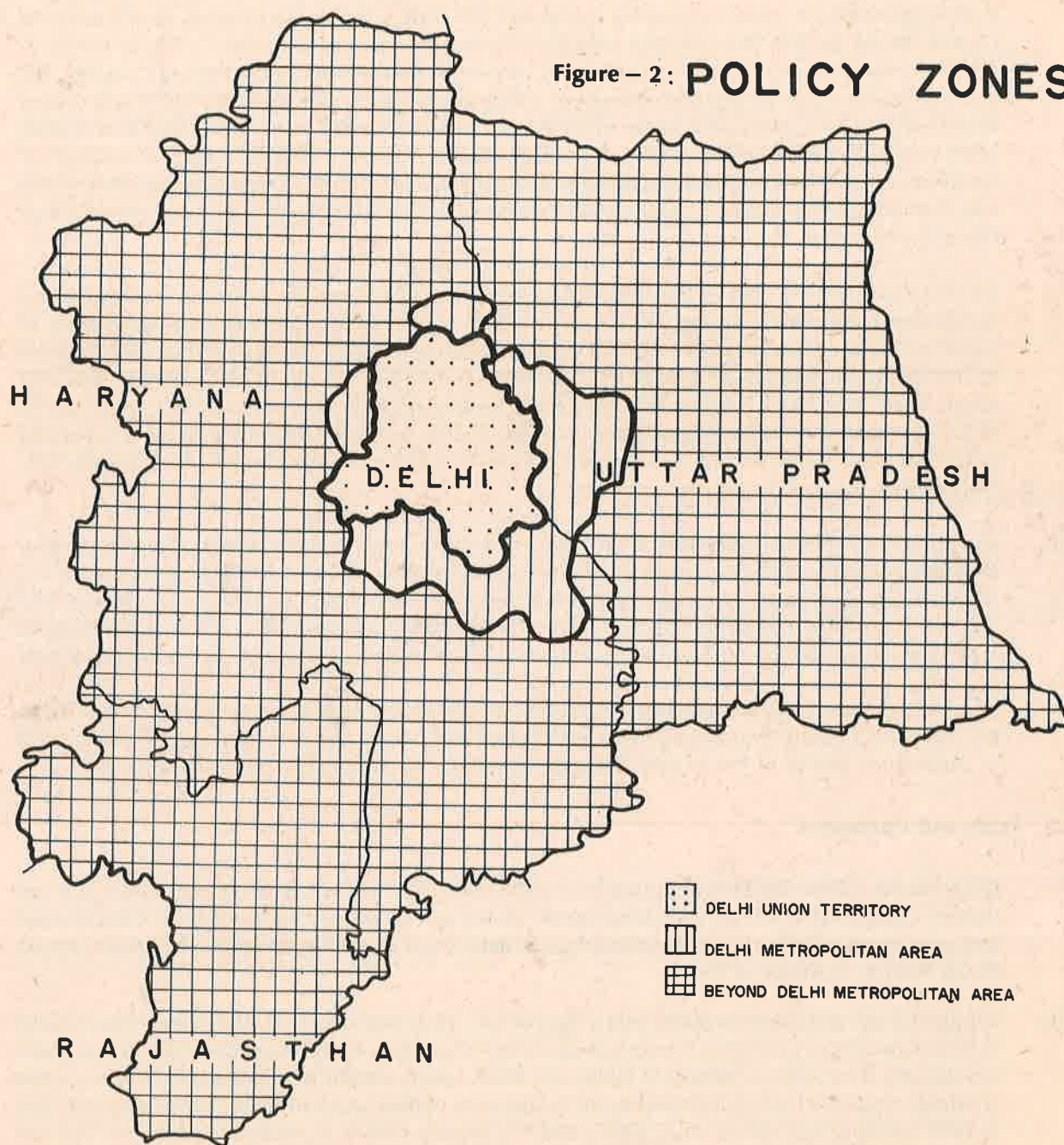
1) Population Policy

- i) To *decelerate* the growth of Delhi UT to achieve a manageable Delhi by 2001 A.D. with a population of 112 lakhs.
- ii) To *control* the population increase of Delhi Metropolitan Area (DMA) excluding Delhi to achieve a *moderate* growth.
- iii) To *induce* growth rate of urban population in the area beyond DMA in the NCR.

2) Settlement Pattern Policy

- i) To counter-act the pull factors exerted by Delhi and also to absorb the difference between the projected and the assigned population figures of both Delhi and the Delhi Metropolitan Area, the policy proposes to develop a few selected area intensively on priority basis.
- ii) In evolving a future settlement pattern for the Region for judicious distribution of population, the policy proposes a four-tier hierarchical system of settlements consisting of regional centres, sub-regional centres, service centres and basic villages for the balanced development of the Region.

Figure - 2: **POLICY ZONES**



3) Economic Base

i) 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 criterion for location of offices in the Capital should be that they perform ministerial functions, protocol functions or liaison functions 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 identified and shifted from Delhi. In the case of public sector offices, there is an urgent need to scrutinise the list of existing offices and allow them to retain only very small establishments to cater for corporate and liaison functions. The rest of the establishments should be shifted out of Delhi. The accommodation which may thus become available could be used to cater to the needs of the essential growth of Central Government offices.
- (b) Control outside Delhi but within the DMA: 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 alone should be allowed to be located in the DMA towns. 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 also. Rest of them have to go out to the priority towns to be developed in the NCR or in the counter-magnet areas identified by the Board.
- (c) Incentives outside DMA but within NCR: 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 be given to employees who may be affected by this shifting, for a limited period. Other incentives like providing government accommodation, generous allowances for study of their children also be given to act as an incentive.

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.

ii) Trade and Commerce

- (a) Disincentive within Delhi: An approach of disincentives to the wholesale trades which are not directly consumed in Delhi should be adopted. Only those wholesale trade 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 in Delhi.
- (b) Controlled development outside Delhi within DMA: The policy of checks and disincentives is also to be followed in case of DMA towns, but with some relaxations. Only those wholesale trades which are directly used and consumed in Delhi and DMA towns should be allowed. There are certain wholesale trades in Delhi which are hazardous because of their location in congested areas and due to bulk handling activities such as plastic and PVC goods, chemical, timber, food grains, iron and steel and building materials. These wholesale trades should be encouraged to develop in DMA towns.
- (c) Outside DMA within NCR: Incentives, concessions and infrastructure should be made available in the regional towns to encourage and accelerate the growth of trade.

iii) Industry

- (a) Strict control within the Union Territory of Delhi: While continuing the present policy of not promoting location of medium and large scale industries within Delhi, location of even small scale industries is to be restricted to those which employ 20 or less persons and, are required either for providing or servicing the consumer needs of Delhi's population. The NCR Planning Board should be represented in the Statutory Licensing Committee for new industries in the UT, so that strict compliance of these policies is ensured.
- (b) Control outside Delhi but within the DMA: No large scale or medium scale industries should be permitted to be set up in the DMA. Only small scale units should be permitted.
- (c) Incentives for industries outside the DMA but within the National Capital Region: The towns selected for priority development should have a strong industrial content, and incentives should be given for location of large, medium and small scale industries by developing industrial estates 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) Transport

The Plan envisages to gain an organised transport network in conformity to the objectives to be attained in the National Capital Region. As such, the main thrust would be on the following aspects.

- i) To decongest Delhi roads, rail and road terminals by diverting the bypassable traffic away from Delhi.
- ii) To provide linkages among each other of the regional urban settlements in the outlying areas of the NCR.
- iii) To connect regional centres with the Capital by an efficient and effective transport network for facilitating faster movement of traffic.
- iv) To link the sub-regional centres with efficient and effective transport network.
- v) To link directly the urban nodes having maximum attraction and generating characteristic of goods traffic by shortest routes.
- vi) To increase the efficiency of rail traffic by increasing the number of coaches per train, and increasing the freight movement and re-routing the regional trains and increasing the efficiency of the railway system through power traction.
- vii) To integrate rail and road services and coordinate various transport authorities and modes in the Region by way of creation of a unified metropolitan transport authority for the entire Region.

5) Telecommunications

The foremost need for the Region is an adequate and effective telecommunication network which would provide impetus to the dispersal and development of economic activities away from Delhi to outlying areas. The NCR 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 essential. The policy stipulates:

- Full automatisisation of telephone services.
- Replacement of all life expired exchanges and other equipments.
- Provision of telephone and telex connections practically on demand.

- Provision of subscribers dialling facilities between Delhi and the priority towns and Delhi Metropolitan Area 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.

6) Power Development

- i) The National Capital Region has to be given special importance and attention so that power supply is uninterrupted and available in adequate quantity throughout the Region. The per capita power supply standards in the DMA and priority towns will be comparable to that of Delhi.
- ii) In view of the preferences, priorities and commitment of the constituent Governments, they may not be in a position to treat the portions of their States and UT under the NCR in a special manner. This necessitates setting up of unified power agency for the NCR.
- iii) There should be provision for extra allocation of funds to meet the cost of additional generation of power and distribution of the same in the NCR.

7) Water Supply

- i) Urban: Majority of the households in urban centres who can afford and wherever possible be provided with house connections, whereas for the economically weaker sections, standposts may be provided at strategic locations. The urban centre which is not having organised/protected water supply system so far, should be accorded the foremost priority alongwith the DMA and priority towns. In some of the urban areas, the existing water supply network is old and wornout, and it causes heavy leakages besides being grossly inadequate to cope with the present demand which is beyond its design capacity. This needs special attention for its being rehabilitated with some investment. This will considerably reduce maintenance and operation costs.
- ii) Rural: More than half of the Region lives in rural areas. There is a wide backlog in the provision of drinking water to the rural areas. This sector, therefore, deserves the highest priority particularly in regard to the villages with problems such as scarcity, bad quality of water, non-availability of local sources etc. The pattern of coverage to be adopted would be to provide at least 25% by 1991 and 50% by 2001 of the rural population with piped/protected water supply and the rest through spot sources.

Different approaches will be necessary due to problems of site location. In hilly areas as in the south western part of the Region, preference has to be given to gravity systems, so that over-dependence on power supply is reduced to minimise operation and maintenance costs. Wherever possible, devices such as hydraulic rams could be employed for lifting water for small rural communities. In areas where the quality of water is affected by excess flourides and other toxic substances, reduced per capita requirement may have to be adopted.

Sanitation:

- iii) Urban: All class I cities, DMA and priority towns should be provided with sewerage and sewage treatment facilities by 1991. However, in the fringe areas of the cities, low cost sanitation measures may be adopted to start with, to be replaced by regular sewerage system subsequently. The other urban centres from class II to VI will, wherever it is not possible due to technical and other reasons to provide sewerage systems, be provided with low cost sanitation facilities.
- iv) Rural: Simple sanitary latrines, septic tanks and pit privies could be adopted in rural areas. Different versions of these devices to suit the local conditions have been brought out by the National Engineering and Environmental Research Institute, Nagpur.

- v) Water Supply and Sanitation should be taken as one integrated project, and the water supply and sewer lines should be kept sufficiently away from each other to avoid difficulty in execution and subsequent repairs and also possible pollution in case of leakage of sewer lines. Sewerage and drainage should be separate where the average annual rainfall exceeds 75 cm. The sewage should invariably be treated to safe limits before it is let off into water bodies or for irrigation purposes. The waste water should not be allowed to stagnate anywhere in and around human habitation. All the drains should be covered. In large towns, the sewage treatment process should include units to obtain its by-products such as cooking gas and manure in the form of sludge. Solid-wastes should be properly managed and recycled to the extent possible to provide a healthy and living environment to the human settlements.

8) Education and Health Facilities

- i) Educational and health facilities to be atleast comparable to that of Delhi in Regional Centres and DMA towns.
- ii) For the location of educational and medical facilities in the Sub-regional Centres, Service Centres and Basic Villages, to have uniformity in Sub-regions, the Plan proposes specific norms for urban and rural areas.

9) Land Use

a) Agricultural Land

- i) Protection of cultivated land as per land records from conversion into urban and non-agricultural use.
- ii) In view of the anticipated changes in land use, there would be heavy pressure on agricultural land to the extent that new employment opportunities are proposed in non-agricultural sector and for consequent concentration of population in urban areas, the urban expansion would have to be met mostly from the non-agricultural lands. This necessitates a rational policy as to the utilisation of less and least valuable land for the urban expansion/new urban centres.

b) Forest Development

- i) Conservation and improvement of existing forest areas in the Region. Increase in the forest cover from existing 1.2% to a minimum of 10% of the total area of the Region by 2001.
- ii) Encourage social forestry and tree plantation along transport routes, rivers, canals and on Government land.
- iii) Strict implementation of National Forest Act to safeguard the forest cover and promote the forest development on marginal and barren lands.

c) Urban Development

- i) It has been proposed that out of the assigned population of 325 lakhs by 2001 AD, about 234 lakhs would be accommodated in the urban areas of NCR. In view of the scarcity of land, it is necessary to adopt stringent methods for land being allocated for urban and other non-agricultural uses. Master Plans for the DMA and Priority towns should be prepared under the existing rules and Acts of the participating States. In order to avoid land use conflicts especially in DMA towns, the Master Plans of all the towns within the National Capital Region should be prepared in consultation with the NCR Planning Board and approval of the Board obtained before notifying them statutorily.

d) Green Areas/Green Wedge

The peripheral agricultural zone in the immediate vicinity of urbanisable area is very vulnerable to encroachment by development. To arrest any such undesirable encroachment in this zone and ensure an orderly and compact urban development, a control belt in the form of a 'green' is proposed all around the future urbanisable area. The development need to be restricted or strictly controlled in this green belt. In addition, the policy stipulates creation of green buffer of 300 metres depth on both sides of National Highways and 200 metres depth in the case of State Highways to prevent ribbon development along the highways.

e) Regional Recreational Areas

- i) To develop Regional recreational area in the Region.
- ii) National Parks/Wild Life Sanctuary in the vicinity of the Region would also be developed for tourist attraction.
- iii) Conservation and improvement to natural environment through controlled development.

10) Environment and Ecology

a) Air Pollution

The main sources which contribute to air pollution are emission from automobiles, industries, thermal power plants, fertilizer plants, coal burning and indirectly putrefying odour from slaughter houses, raw sewage disposal, solid waste dumping and stagnating waste water. There is a direct relationship to air pollution levels and urbanisation and industrial activities. The levels of air pollution in the NCR are severe in several pockets such as in the metropolitan and urban industrial areas, major transport corridors etc. Any further urbanisation and industrialisation in the NCR has to be reckoned for their air pollution impacts and the general tolerance levels that should be achieved for viable development programmes. These have to be identified through appropriate field research studies so that the levels and types of industrialisation can be established for the different Sub-regions.

b) Water Pollution

- (i) No industry be permitted to discharge its effluents over land or other water bodies without treating it to requisite pollution control standards.
- (ii) As far as possible, new industries be developed in identified and classified industrial areas/estates which should have proper effluent treatment facilities in-situ before they are discharged into natural areas.
- (iii) Urban wastes should be treated to requisite levels of pollution control standards before being discharged into rivers or other water bodies.
- (iv) The existing water sources should be developed through inter-State cooperation and water supply problems should be dealt with in an unified manner for the NCR as a whole.

c) Sewage Disposal

Detailed schemes should be prepared at local level for sewage treatment for all DMA, priority and other towns so that the sewage water may be recycled for irrigation and other purposes. The settlements where regular sewerage schemes are not available, low cost sanitation system for individual family or community may be adopted as a short-term measure.

d) *Solid Waste*

Solid waste from urban and agricultural areas, if properly recycled, can be a valuable source of nutrient and energy. This approach will also lessen the pollution loads of the solid wastes on the environment or the eco-system. A scientific approach should be adopted for the solid waste management and its re-use in all urban and agricultural areas.

e) *General*

(i) To lessen the pollution effects of human wastes on soil and water environments, efforts should be made to introduce alternate technologies like low cost sanitation, integrated bio-gas generation system, etc. in towns and villages where the conventional sewerage system is not available.

(ii) A Joint Board for prevention and control of pollution of water and air should be established for the NCR. Its main functions may be as below:

- (a) To coordinate the activities of the State Boards for the prevention of pollution and the environmental committee constituted at local levels and to provide them the technical assistance and guidance to carry out and sponsor investigations and research relating to problems of water and air pollution and prevention, control and abatement of such pollution.
- (b) To enforce law for treatment of liquid effluents from domestic areas, industrial and commercial areas for making them fit for recycling.
- (c) Promote solid waste management for extracting its nutrient value.

f) *Human Settlements*

Care should be taken by the local planning and plan implementing authorities at the time of preparing and implementing the development plans of the urban areas in their Sub-region to contain the spread of corridor developments all along the major arteries of the Region. All urban developments should be regulated within identified geographical areas. As far as possible, each of the settlements may be surrounded by a green belt comprising social forestry, urban forestry or agro-horticulture with adequate vegetal and bio-mass cover. These would inter-alia, act as climate balancers.

Location of industries in the NCR should be regulated with respect to pollution propensities. Industries should be located in such a way that smoke emitted by industries is carried away from the main human settlement. Industries that may generate liquid wastes should be located on such sites so that the water sources are not polluted and no liquid effluents should be released without proper treatment to reduce its toxic effects.

DEMOGRAPHIC PROFILE 1981-2001

2.1 Metropolitan Growth: National Scene

One-fourth of the population of India lives in urban areas. The urban population of 1981 (159.73 million) was distributed over 3,245 urban settlements. The twelve metropolitan cities, namely, Calcutta, Bombay, Delhi, Madras, Hyderabad, Pune, Ahmedabad, Bangalore, Kanpur, Nagpur, Jaipur and Lucknow alone account for more than one-fourth (42.12 million) of the total urban population. The process of concentration of urban population in bigger urban centres has been greater in the recent years. Even though, the average rate of metropolitan growth (41.3%) has been less than the all India rate of urban growth (46.39%) during the decade 1971-81, Delhi metropolis has been constantly growing at a decadal growth rate of more than 50% since 1951 (Table 2.1). During 1971-81, Delhi's growth rate has been 57% as compared to that of Calcutta (30.8), Bombay (38.2) and Madras (35.3). Apart from the natural increase, immigration, specially in the metropolitan cities has been the major factor for their extraordinary growth.

2.2 Population Distribution in the NCR

The National Capital Region accommodated a total population of 191.92 lakhs in 1981. Of this, the Uttar Pradesh Sub-region accounted for a major share of 36.31% followed by Delhi UT (32.41), Haryana (25.74) and Rajasthan (5.54) (Table 2.2).

Though the Uttar Pradesh Sub-region accounted for a major share of population of the NCR in 1981, the share has been declining over years. The Uttar Pradesh Sub-region accommodated 42.04% of the NCR's population in 1961, which declined to 38.69% and 36.31% in 1971 and 1981 respectively. In the case of the Haryana Sub-region too, this declining trend prevailed. However, Delhi has been adding population unabatedly and is emerging fast as the major population absorbant among the NCR constituents, having increased its contribution from 25.11% in 1961 to 32.41% in 1981 to the population of the NCR.

i) Rural Population

The NCR has extensive rural tracts and accommodated about 100.94 lakhs of population in 1981. This forms 52.60% of the total population of the NCR. The Uttar Pradesh Sub-region has about 50% of the rural population of the NCR followed by the Haryana Sub-region (36.97%), the Rajasthan Sub-region (8.82%) and Delhi UT (4.48%). The fact that the NCR is getting fast urbanised is evident from the declining rural population proportion from 65.31% in 1961 to 60.72% in 1971 and 52.60% in 1981 (Table 2.3).

ii) Urban Population

Urban population has been increasing steadily over years in the NCR. About 91 lakhs or 47.40% of the population in the Region resided in urban areas in 1981 as against only 34.69% in 1961 and 39.28% in 1971. Delhi UT had 57.68 lakhs or 63.40% of the urban population of the NCR followed by Uttar Pradesh (21.42%), Haryana (23.27%) and Rajasthan (1.91%) Sub-regions in 1981. The urban population of the NCR has registered an extraordinary decadal growth rate of 64.70% during 1971-81. It is, however, significant

Table 2.1: Growth of Metropolises of India 1951-81

Metropolis	Population (in million)			1981	51-61	Growth rate %	
	1951	1961	1971			61-71	71-81
Calcutta UA	4.59	5.74	7.03	9.19	25.0	22.6	30.8
Gr. Bombay UA	2.97	4.15	5.97	8.24	39.9	43.8	38.2
Delhi UA	1.44	2.36	3.65	5.73	64.2	54.6	57.1
Madras UA	1.54	1.94	3.17	4.29	26.1	63.0	35.3
Hyderabad UA	1.13	1.25	1.80	2.55	10.8	43.8	41.7
Ahmedabad UA	0.88	1.21	1.74	2.55	37.5	44.4	46.3
Bangalore UA	0.78	1.20	1.65	2.92	54.6	37.8	76.7
Kanpur UA	0.70	0.97	1.27	1.64	37.7	31.3	28.5
Pune UA	0.60	0.79	1.14	1.69	30.6	43.5	48.5
Nagpur UA	0.49	0.69	0.93	1.30	42.2	34.8	39.9
Jaipur UA	0.30	0.41	0.64	1.01	34.8	55.2	59.4
Lucknow UA	0.50	0.66	0.81	1.01	32.0	24.1	23.8
Total Metropolises	15.92	21.37	29.80	42.12	34.2	39.5	41.3
All India (urban)	62.44	78.94	109.11	159.73	26.41	38.23	46.39

UA — Urban Agglomeration

Sources : 1. Census of India, 1971—Part IIA(i) General population Tables, India.
2. Census of India, 1981—Part IIB(i) Primary Census Abstract, India.

Table 2.2: Area and Population of the NCR

(Population in lakhs)

Sub-region	Area sq.km 1981	Population			Growth rate % 1971-81
		1961	1971	1981	
Delhi UT	1483 (4.90)	26.6 (25.11)	40.6 (28.91)	62.2 (32.41)	53.2
Haryana	13413 (44.36)	28.9 (27.33)	38.0 (27.01)	49.4 (25.74)	30.0
Rajasthan	4493 (14.86)	5.8 (5.52)	7.6 (5.39)	10.6 (5.54)	39.47
Uttar Pradesh	10853 (35.88)	44.5 (42.04)	54.4 (38.69)	69.7 (36.31)	28.12
N C R	30242 (100.00)	105.8 (100.00)	140.6 (100.00)	191.9 (100.00)	36.48

Note: Figures in brackets indicate proportions(%) to NCR total

that the Haryana and Uttar Pradesh Sub-regions have registered higher rate of growth than that of the Delhi UT.

Urban Population of NCR:

Sub-Region	Proportion to NCR urban population 1981 %	Growth rate 1971-81 %
Delhi UT	63.40	58.16
Haryana	13.27	78.14
Rajasthan	1.91	56.62
Uttar Pradesh	21.42	79.06
N.C.R.	100.00	64.70

Table 2.3: Rural-Urban Composition 1961-81**Population in Lakhs**

Sub-Region	1961		1971		1981	
	Rural	Urban	Rural	Urban	Rural	Urban
Delhi UT	2.99 (11.25)	23.59 (88.75)	4.19 (10.29)	36.47 (89.71)	4.52 (7.27)	57.68 (42.73)
Haryana	24.32 (84.06)	4.61 (15.94)	31.21 (82.17)	6.77 (17.83)	37.32 (75.57)	12.07 (24.03)
Rajasthan	5.11 (87.55)	0.73 (12.45)	6.46 (85.34)	1.11 (14.66)	8.90 (83.66)	1.74 (16.34)
Uttar Pradesh	36.72 (82.50)	7.79 (17.50)	43.52 (79.99)	10.89 (20.01)	50.20 (72.03)	19.49 (27.97)
N C R	69.14 (65.31)	36.72 (34.69)	85.38 (60.72)	55.24 (32.28)	100.94 (52.60)	90.98 (47.40)

Note: Figures in brackets indicate percentages to total population.

2.3 Density and Sex-ratio 1981

The density of population in the NCR was 634 persons/sqkm against the all India average of 221 in 1981. Of the constituents of the Region, Delhi is the most congested with 4192 persons over one sq.km area followed but distantly by the Uttar Pradesh Sub-region with 642. The other two Sub-regions are significantly below the regional average. Excluding the Delhi UT, the density of the Region works out to only 451.

In the male—female ratio, Delhi UT is comparatively the least balanced with 808 females for 1000 males and, all the Sub-regions but Delhi UT have more than the regional figure. The NCR as a whole is discernibly low in the sex ratio compared to the nation's 934 due to concentration of job opportunities and consequent inflow of more males.

Density and sex ratio: 1981

Area	Density	Sex-ratio
Delhi UT	4192	808
Haryana	368	864
Rajasthan	238	895
Uttar Pradesh	642	844
NCR	634	840
India	221	934

2.4 Growth Patterns of the Sub-regions

Population of the NCR has swelled to 191.92 lakhs in 1981 from 140.60 lakhs in 1971 and 105.80 lakhs in 1961, thus registering a growth rate of 36.48% during 1971-81 against 32.89% during 1961-71, compared to the national decadal growth rate of 25% during 1971-81. However, varied trends are observed in the constituent areas. Delhi UT exhibited a growth rate of 53.20% followed by Rajasthan (40.79%), Haryana (29.74%), and Uttar Pradesh (28.12%) Sub-regions during 1971-81. The Uttar Pradesh and Rajasthan Sub-regions have been growing faster in their population count while the Haryana Sub-region registered a 1.75% reduction during 1971-81 compared to the 1961-71 rate. The net addition of population during the 1971-81 decade was 51.33 lakhs. Of this, Delhi UT accounted for 42.11% followed by the Uttar Pradesh (29.82%), Haryana (22.03%) and Rajasthan (6.04%) Sub-regions. These proportions are perceptibly more than that during 1961-71. (Table 2.4).

Table 2.4: Decadal Growth Rates of Total Population and Additional Population during 1961-81

Sub-region	Decadal Growth Rate of total Population		Additional Population in Million	
	1961-71 %	1971-81 %	1961-71	1971-81
Delhi UT	52.63	53.20	1.40 (40.23)	2.16 (42.11)
Haryana	31.49	29.74	0.91 (26.15)	1.13 (22.03)
Rajasthan	31.03	40.79	0.18 (5.17)	0.31 (6.04)
Uttar Pradesh	22.25	28.12	0.99 (28.45)	1.53 (29.82)
N C R	32.89	36.48	3.48 (100.0)	5.13 (100.0)

Note: Figures in brackets indicate percentages to NCR totals.

Delhi UT:

The population of Delhi has been growing at a rapid pace since independence. During the four decades preceding 1941, it gained a modest total of 7 lakhs. However, it experienced a phenomenal growth in the following decade registering 90.18% growth and more than 52% in the successive decades ending 1981.

Year	Population (in lakhs)	Decennial rate of growth
1941	9.17	—
1951	17.44	90.18
1961	26.59	52.46
1971	40.66	52.91
1981	62.20	52.98

Of the two chief components of population growth, namely, the natural growth and in-migration, the share of natural growth has been declining over years. The partition of the Country in 1947 resulted in a large influx of population into Delhi. In addition, the attainment of independence and the resultant need to develop Delhi as the Indian Capital created a huge demand for manpower and, thus, there was a tremendous influx of population into the Capital. The rate of growth has stabilised around 52% from 1961.

2.5 Migration Pattern and Trend

According to the 1981 Census, there were 22,99,252 migrants in Delhi constituting about 37% of the total population. Immigration into Delhi has seen a rapid increase especially during the last two decades and, the average annual immigration has gone up more than thrice during this period. Among the 22,99,252 migrants in Delhi upto 1981, 12,29,745 persons, which constitute 53.48% came during 1971-81 alone. Of the net addition of population during 1961-71, proportion of immigrants was only 37.33% and, it registered a sharp increase to constitute as much as 57.07% of the additional population during 1971-81 (Table 2.5).

An analysis of this phenomenon indicates that immigration into Delhi has been mainly from the surrounding States (Table 2.6). The National Capital Region participating States taken together accounted for about 71% of the total migrants that moved into Delhi during 1971-81. Of the total, migrants from Uttar Pradesh alone account for 48.2% followed by that from Haryana (15.5%), Punjab (9.8%) and Rajasthan (7.6%). This trend in in-migration has been that while inflow from Punjab and Haryana has declined from 11.3% to 6.4% and 16.4% to 12.9% during the decades 1961-71 and 1971-81 respectively, that from Uttar

Pradesh and Madhya Pradesh has been on the increase. Rajasthan maintained almost the same share of contribution of in-migrants to Delhi since 1961. In absolute terms, it is Uttar Pradesh from where maximum number of people come to Delhi.

Table 2.5: Pattern of Immigration into Delhi 1941-81

Census Year	Population	Net Decadal Increase	Total Decadal immigrants**	Proportion of immigrants to total Pop. (%) in that year (4/2)	Proportion of immigrants to net increase (%) (4/3)	Decadal Growth of immigration (%)
1941	917939					
1951	1744072	826133				
1961	2658612	914540	544198*	20.47		
1971	4065698	1407086	525309	12.92	37.33	
1981	6220406	2154708	1229745	19.77	57.07	134.10

* Represents immigrants upto 1961 and includes migrants for 'period not known' category (99,143)

** In the population Census, migrants are classified on the basis of either (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 enumeration during the Census is other than the place of his/her immediate last residence. Till 1961, statistics on migration was based on 'birth place', but since 1971, it is on the basis of 'place of last residence'.

Table 2.6: Migrants to Delhi by States of their Origin

State	Before 1961	1961-71	1971-81	Period not known	Total
Haryana	98324 (22.1)	85945 (16.4)	159028 (12.9)	14412	357709 (15.5)
Madhya Pradesh	5585 (1.2)	8860 (1.7)	37709 (3.1)	2496	54650 (2.4)
Punjab	749944 (16.8)	59503 (11.3)	78671 (6.4)	11447	224565 (9.8)
Rajasthan	33341 (7.5)	39885 (7.6)	93836 (7.6)	7603	174665 (7.6)
Uttar Pradesh	185550 (41.7)	260748 (49.6)	616021 (50.1)	54362	1107681 (48.2)
Other (including outside India)	47311 (10.7)	70368 (13.4)	244480 (19.9)	17823	379982 (16.5)
Total	445055 (100.0)	525309 (100.0)	1229745 (100.0)	99143	2299252 (100.0)

Note: Figures in brackets indicate % to the respective totals.

All the States mentioned in Table 2.6 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 States. In the 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.

Though migration to Delhi is taking place mainly from the neighbouring States, contribution from the other States too is a prime factor leading to higher growth rate of population in the National Capital. In fact, migration from the other States (other than Haryana, Uttar Pradesh, Madhya Pradesh, Punjab and Rajasthan) has shown an increasing trend, both in absolute as well as relative terms. The proportion of flow of in-migrants from the other States including abroad to total migrants has gone-up from 10.7% in 1961 to about 20% in 1981.

In-migration into Delhi from urban areas has been equally pronounced as that from rural areas. Of the total migrants from the five surrounding States of Haryana, Madhya Pradesh, Uttar Pradesh, Punjab and Rajasthan during 1971-81, 39.05% has been from urban areas (Table 2.7). Urban migrants formed a maximum of 68.35% of the total from Punjab. In the total migrant population, proportion of urban migrants to Delhi has been more than 34% from all the States.

The prime reasons for in-migration into Delhi have been the 'employment' and 'family movement'. The large inflow into Delhi in recent times can be attributed to the substantial growth of industries, especially, small scale ones and, expansion of trade and commerce. 'Employment' and 'family movement' accounted for 73% of all in-migrants in 1981 from the five States discussed earlier (Table 2.7).

Table 2.7: Rural-Urban Break-up of Migration and Causes of In-migration to Delhi
(Population in lakhs)

States	No. of Migrants During 1971-81			Causes of Migration	
	Total	Rural	Urban	Employment	Family Movement
Haryana	1.59	0.98 (61.64)	0.61 (38.36)	0.36 (22.64)	0.60 (37.73)
Madhya Pradesh	0.38	0.22 (57.90)	0.16 (42.10)	0.14 (36.84)	0.17 (44.74)
Punjab	0.79	0.25 (31.65)	0.54 (68.35)	0.16 (20.25)	0.36 (45.57)
Rajasthan	0.94	0.62 (65.96)	0.32 (36.04)	0.32 (34.05)	0.42 (42.55)
Uttar Pradesh	6.16	3.94 (63.96)	2.22 (36.04)	2.31 (37.50)	2.37 (38.50)
Total	9.86 (100)	6.01 (60.95)	3.85 (39.05)	3.29 (33.37)	3.90 (39.55)

Note: Figures in brackets indicate percentages to the respective totals.

Usually the head of a family moves to another place for employment earlier and 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'.

An analysis of employment structure of migrant workers of 1971 indicates that tertiary sector engaged the highest proportion (69.17%) of all migrant workers followed by secondary (28.87%) and primary sectors (1.96%). Majority of the inmigrants are absorbed in petty trades, low grade production or processing activities, and the population growth induced service sector. Incidentally, proportions of total workers in Delhi in different sectors too reflect roughly the same proportions as for migrant workers—66.01%, 29.04% and 4.95% in tertiary, secondary and primary sectors of employment respectively as shown in Table 2.8.

Table 2.8: Proportion of Migrant Workers and total Workers by Sector of Employment: 1971 — in Delhi

Sector	Migrant Workers (%)	Total Workers(%)
Primary	1.96	4.95
Secondary	28.87	29.04
Tertiary	69.17	66.01
Total	100.00	100.00

Source: Census of India, Delhi Migrant Workers and General Economic Tables.

2.6 Delhi Metropolitan Area

Delhi's growth is not confined to the boundaries of the Union Territory. This urban spatial expansion had spread into the surrounding areas of Uttar Pradesh and Haryana. The contiguous urban areas around Delhi along with Delhi UT constitute the Delhi Metropolitan Area (DMA). They are Faridabad—Ballabgarh complex, Gurgaon, Bahadurgarh and Kundli and in addition, the ridge area falling outside the area of Delhi UT, Gurgaon and Faridabad in Haryana; Ghaziabad including Loni and NOIDA in Uttar Pradesh. There areas, owing to their location, have exhibited growth characteristics similar to that of Delhi in recent years. Constituent units of DMA and their growth characteristics are as in Table 2.9.

Table 2.9: Population and Growth Characteristics of DMA

Constituent Units of N C R	Population (1981) in Lakhs	Decadal Growth (%)		
		1951-61	1961-71	1971-81
Delhi UT	62.20	52.43	52.92	52.98
Bahadurgarh	0.37	34.43	72.28	45.23
Faridabad-Ballabgarh	3.31	57.88	103.42	169.39
Ghaziabad including Loni	2.97	61.01	68.71	141.65
Gurgaon	1.01	103.42	50.94	76.50
Kundli	—			
NOIDA	0.42	Did Not Exist Till 1981		

2.7 Population Projection

Recognising the urban growth dynamics in the Region, projections have been made for Delhi by the Office of the Registrar General of India, Census Operations and the constituent units of the NCR based on the urban-rural growth differential method that has been advocated by the United Nations for projecting population of urban areas. In this method, the growth differentials of the areas falling in the NCR and other areas of the NCR States are examined, and these differentials are then projected by which the total population and rural-urban composition of the Sub-regions are arrived at as may be seen from Table 2.10.

Table 2.10: Population Projections for the NCR by Constituents (Population in lakhs)

Sub-Region		Population 1981	Projected 1991	Population 2001
Delhi UT*	Total	62.2	92.5	132.6
	Rural	4.5	4.4	3.6
	Urban	57.7	88.1	129.0
Haryana	Total	49.4	62.7	72.1
	Rural	37.3	40.3	34.4
	Urban	12.1	22.4	37.7
Rajasthan	Total	10.6	11.3	11.9
	Rural	8.9	8.7	8.5
	Urban	1.7	2.6	3.4
Uttar Pradesh	Total	69.7	87.6	108.6
	Rural	50.2	51.8	45.0
	Urban	19.5	35.8	63.6
N.C.R.	Total	191.9	254.1	325.2
	Rural	100.9	105.2	91.5
	Urban	91.0	148.9	233.7

* Projection for Delhi UT is based on the draft recommendations of the Expert Committee on Population appointed by the Planning Commission.

i. Delhi UT

Projections indicate that if the present trend of population of Delhi UT is allowed to continue, it will reach a figure of 132 lakhs by the year 2001. A major contributing factor for such an increase in the population in the past, has been the continuous inflow of migrants into Delhi. Continued growth of population and in-migration into Delhi on the scale experienced between 1971 and 1981, and continued intensification of activities in the existing urban Delhi, if not controlled through associated growth and distribution over the Region, would inevitably lead to enormous pressure on and deterioration of the limited urban services of Delhi.

Growth of population in Delhi, at the present rate, will soon pose a serious problem. The scarcity of some of the services already presents an alarming situation. Therefore, there is a need for decelerated growth of population in Delhi without losing any more time.

In the attempt to arrive at a population for Delhi UT, which would be manageable, the assumptions made are:

- i) that the natural growth rate of population has been declining, and with various population control measures and growing literacy level, annual growth rate would continue to decline to reach a figure of 2.0% per annum during the decade 1981-91 and, subsequently, to 1.2% per annum during the decade 1991-2001.
- ii) that immigration would continue at the same rate as it would have otherwise registered during 1981-1991. With efforts on creating greater employment opportunities in the surrounding areas, it should be possible to achieve a minimum of 50% reduction in the rate of immigration during 1991-2001 from that of 1981-91.

Under these assumptions, the population of Delhi UT would be 112 lakhs by 2001 (Table 2.11) of which 2 lakhs would be rural.

To restrict the population of Delhi UT to 112 lakhs by 2001, measures are to be taken right from now so that the annual immigration into the city is controlled and limited to about 84,000 persons during 1991-2001 from the volume of 1.79 lakhs per annum that might be observed during 1981-91. This would bring down the contribution of immigrants into Delhi to the decadal addition to 46.32% by 2001 from the observed 57.07% during the decade 1971-81 and projected 59.01% during 1981-91.

Table 2.11: Controlled Population Projection of Delhi UT 1981-2001

Year	Population (in lakhs)	Net increase (in lakhs)	Decadal Growth Rate	Decadal By Natural Growth (%)	Increase By immigration in lakhs (%)
Actual					
1961	26.59				
1971	40.66	14.07	52.91	8.82 (33.17)	5.25 (19.74)
1981	62.20	21.54	52.98	9.24 (22.74)	12.30 (30.24)
Projected					
1991	92.55	30.35	48.79	12.44 (20.00)	17.91 (28.79)
2001	112.00	19.45	21.01	11.11 (12.00)	8.34 (9.01)

Note: Figures in brackets indicate components of decadal growth rate.

ii. Population Projection and Assignment—DMA

The DMA towns excluding Delhi, which form a contiguous urban area around Delhi have shown great potential for housing and industrial activities. This growth in the immediately adjoining areas of the city is striking and, has been sharply increasing over years. This rapid growth of the DMA, is mainly due to industrial development around Delhi, creation of NOIDA township by Uttar Pradesh, proposed development of Kundli industrial township by Haryana, inclusion and agglomeration of Narela town with Delhi Urban Area, spurt in the concentration of industrial and institutional activities along the Delhi-Gurgaon National Highway and Faridabad-Ballabhgarh Highway. While this development, to some extent, would reduce the problems of Delhi, this may lead to problems of greater magnitude in terms of stresses and strains on the Delhi's civic services leading to their break-down unless these areas are planned in a regulated and co-ordinated manner hence-forth. They may, in the near future, identify themselves with the urban form of Delhi and become a single urban continuum.

Recognising the potential of the DMA in solving the problems of over-congestion in Delhi and at the same time problems that may arise in Delhi due to over growth of the DMA, a MODERATE growth has been proposed for the towns falling in the DMA excluding Delhi.

Presently, the DMA excluding Delhi accommodates a population of 8.08 lakhs, and it has been assigned a population of 38 lakhs including rural population of 50,000 each in the U.P. and Haryana parts of the DMA. By the year 2001, the DMA would have a population of 150 lakhs against the 1981 figure of 70.28 lakhs (Table 2.12).

Table 2.12 Population Assignment for the DMA

Units of DMA	Population 1981	Assigned Popln. 2001	Annual Growth Rate	
			1971-81 (Actual)	1981-2001 (Proposed)
Delhi	62.20	112.00	5.29	4.00
Bahadurgarh	0.37	2.00	4.52	22.02
Faridabad-Ballabhgarh	3.31	10.00	7.65	10.10
Ghaziabad	2.97	11.00	14.16	13.52
including Loni				
Gurgaon	1.01	7.00	7.65	29.65
Kundli	—	1.50	—	—
NOIDA	0.42	5.50	—	155.89
Rural areas falling in UP and Haryana	—	1.00	—	—
DMA (inc. Delhi)	70.28	150.00	—	5.67
DMA (exc. Delhi)	8.08	38.00	—	18.51

iii. Population Assignment for Rest of the NCR

A significant fact about the migration to Delhi is that majority of these migrants are from the immediate surrounding States of Delhi. The additional population of 20 lakhs which otherwise would have moved to Delhi from these States during 1981-2001 should be deflected towards the urban areas beyond the DMA within the National Capital Region. It is proposed to contain and accommodate this additional population in the sub-regional areas of Haryana, Rajasthan and Uttar Pradesh respectively. The projected and assigned population for the Sub-regions and the DMA towns are given in Table 2.13.

Based on the urban growth trends and the projected urban population in the constituent Sub-regions by the year 2001, it is proposed to contain and accommodate about 5.5 lakhs, 1.5 lakhs and 12 lakhs in the urban areas beyond the DMA of Haryana, Rajasthan and Uttar Pradesh Sub-regions and 1 lakh in the rural areas. The proposed measures for this induced growth and for a subdued rate of growth in the Delhi and DMA towns are indicated in subsequent chapters of this Plan.

Table 2.13: Population Assignment by 2001 AD For Delhi, DMA & NCR
(in lakhs)

Sl.No.	Area	Population 2001					
		Projected			Assigned		
		Total	Urban	Rural	Total	Urban	Rural
1.	Region	325	324	91	325	234	91
2.	Delhi Sub-region	132	129	3	112	110	2
3.	Haryana Sub-region	72	38	34	78	43.5	34.5
4.	Rajasthan Sub-region	12	3.5	8.5	14	5	9
5.	Uttar Pradesh Sub-region	109	63.5	45.5	121	75.5	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 areas outside DMA				(Urban 87 and rural 88 lakhs)		
	a. Haryana	17	17		57	23	34
	b. Rajasthan	4	4		14	5	9
	c. U.P.	47	47		104	59	45

SETTLEMENT SYSTEM 1981-2001

3.1 Rural Settlement System

There are 6,677 villages (1981) in the NCR. Villages are predominantly medium sized with 55% of them having population 500-1999 persons and 20.75% of them 2000-4999 persons. While large villages with population above 5000 formed 3.45%, smaller ones with less than 500 formed 20.71% of the total number of villages (Table 3.1). In the Rajasthan Sub-region, however, 40% of the villages are smaller. Delhi and the Uttar Pradesh Sub-regions have the highest number of medium sized settlements.

Among such large number of rural settlements, it is necessary to identify some basic villages for location of relatively higher order facilities, to serve large number of the scattered population over vast area.

Table 3.1: Number of Villages in Different Population Range – 1981

Sub-region	No. of Villages	Population Less than 200	200-499	500-1999	2000-4999	5000-9999	10000 and above
Delhi U.T.	214	9 (4.20)	9 (4.20)	110 (51.40)	71 (33.20)	15 (7.00)	—
Haryana	2386	158 (6.62)	335 (14.04)	1287 (53.94)	508 (21.29)	93 (3.90)	5 (0.21)
Rajasthan	1088	125 (11.49)	318 (29.23)	573 (52.67)	65 (5.97)	7 (0.64)	—
U.P.	2989	149 (4.98)	283 (9.47)	1705 (57.04)	742 (24.83)	107 (3.58)	3 (0.10)
N.C.R.	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-region's total

3.2 Urban Settlement System

There are 94 urban centres in the NCR with 6 in the Union Territory of Delhi, 58 in Uttar Pradesh, 27 in Haryana and 3 in Rajasthan Sub-regions. There has been a spectacular increase from 48 to 94 in the number of urban centres during the period 1971-81 while during the decade 1961-71, there was an addition of only 4 (Table 3.2).

There are 11 Class I urban centres including Delhi accommodating about 70% of the urban population of the NCR. Delhi Urban Area alone contains 57 lakh persons and, the other Sub-regions accommodate lesser proportions of urban population. As such, as much as 63.45% of the entire urban population of the NCR is concentrated in Delhi alone. Of the remaining, 21.44% is in Uttar Pradesh followed by 13.19% in Haryana and 1.92% in Rajasthan Sub-regions. Class-wise proportions of urban population in Class I to VI urban centres are 70.32%, 1.38%, 4.55%, 3.14%, 2.3% and 0.10% respectively.

Table 3.2: Distribution of Urban Settlements 1961-81

Size Class	N.C.R. 1961	N.C.R. 1971	N.C.R. 1981	Delhi UT 1981	UP-Sub Region 1981	Haryana Sub-Region 1981	Rajasthan Sub-Region 1981
I.	2	4	11	1	4	5	1
II.	3	6	3	—	2	1	—
III.	10	9	16	—	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

Note: Figures indicate number of urban centres.

3.3 Urban Population Density

Greater concentration of activities and resultant population lead to higher density in urban areas. While higher densities indicate development of compact urban form, it may be due to physical limitations for spatial expansion too.

The Region had an urban density of about 6,300 persons per sq km (1981). An analysis of the density patterns in the Region indicates that the process of activity and population concentration followed size class of town. While the Class I cities had an average density of about 7,488 persons, the other class towns from II to VI had densities of 6725, 6016, 2764, 1835 and 1260 persons respectively in 1981. Among the Class I cities, however, those of Haryana and Rajasthan Sub-regions had relatively lower densities compared to that of Uttar Pradesh and Delhi UT Sub-regions (Table 3.3). This indicates the scope in terms of space availability within existing urban areas for additional development and requirement for urban expansion.

3.4 Growth Pattern of Urban Areas

Urban growth has been extraordinary in the Uttar Pradesh Sub-region. The urban population increased from 10.68 lakhs in 1971 to 19.49 lakhs in 1981 thus registering a growth rate of 82.5% during 1971-81. While the urban growth of the Uttar Pradesh was only 60.62% during this period, the Class I cities in 1981 registered 63.44% of growth rate. Class IV and V towns registered 252.71% and 278.83% respectively. However, this extraordinary growth in Class IV and V towns has been mainly due to addition of towns which were either declassified in 1971 and subsequently became towns in 1981 or addition of new towns in 1981. There was an addition of 29 towns in 1981. The 20 towns which were declassified in 1971 added a population of 1.99 lakhs and, the 9 new towns added 0.79 lakh of population in 1981.

The Haryana Sub-region too, registered substantial growth rate in its urban population. While the number of towns increased from 22 to 27, population increased from 7.63 lakhs in 1971 to 12.04 lakhs in 1981, registering 57.79% growth during this period. Including Faridabad complex administration, which was formed after Census 1971, the Class I cities registered 60.28% growth during 1971-81. There was an addition of 6 towns, of which 5 were declassified in 1971 and one newly added in 1981 adding a population of 0.41 lakh in 1981.

The Rajasthan Sub-region had an urban population growth rate of 56.63% during 1971-81. One new town that was declassified in 1971 was added in 1981. Alwar, the Class I city of Rajasthan, registered a growth rate of 45.25% during 1971-81. The National Capital Region thus, is a highly urbanised area and the position is likely to show a further remarkable change in 2001 with 72% of the population living in urban areas.

Growth rate of population of individual towns provide an insight into the capacity of such towns to attract economic activities and subsequently population. Towns have been classified as very fast growing, fast growing, slow growing and stagnating based on their decadal growth rates (1971-81) such as those that

Table 3.3: Urban Density Patterns in NCR – Classwise : 1981

Delhi UT				Uttar Pradesh Sub-region				Haryana Sub-region				Rajasthan Sub-region				NCR	
Class Size	No.	Pop. Lakhs.	Area Km ²	Class Average Density Persons/km ²	No.	Pop. Lakhs.	Area Km ²	Class Average Density Persons/km ²	No.	Pop. Lakhs.	Area Km ²	Class Average Density Persons/km ²	No.	Pop. Lakhs.	Area Km ²	Class Average Density Persons/km ²	Class Average Density Persons/km ²
I	1	57.29	540.74	10595	4	10.30	161.81	6366	5	8.48	252.79	3346	1	1.46	80.00	1522	7488
II	—	—	—	—	2	1.55	24.72	6261	1	0.52	6.06	8508	—	—	—	—	6725
III	—	—	—	—	12	3.66	56.18	6518	4	1.35	27.09	4993	—	—	—	—	6016
IV	1	0.13	17.00	743	17	2.24	93.68	2395	8	1.09	35.47	3078	2	1.73	41.64	4159	2764
V	4	0.26	34.17	770	20	1.63	74.62	2176	9	0.65	29.58	2195	—	—	—	—	1835
VI	—	—	—	—	3	0.11	8.73	1300	—	—	—	—	—	—	—	—	1260
All classes																	
NCR	6	57.68	591.91		58	19.49	419.74		27	12.09	350.99		3	3.19	121.64		6300

registered above twice that of national average urban growth (92%), between 96% and national average urban growth (46%), between 46% and national total population growth (25%) and less than 25% respectively.

The very fast growing towns identified are Ghaziabad UA (124.88%) and Modinagar UA (101.67%) in the Uttar Pradesh Sub-region, Faridabad Complex Administration (169.40%), Ganaur (96.32%) and Hailey Mandi (350.27%) in the Haryana Sub-region. The fast growing towns are Baghpat (47.07%), Baraut (48.07%), Bulandshahr (73.83%), Dadri (51.01%), Garmukteshwar (63.79%), Mawana (51.34%), Muradnagar (86.25%), Muradnagar OF (45.66%) and Pilkhuwa (58.24%), in the Uttar Pradesh Sub-region, Gohana (56.31%), Gurgaon (76.51%) (76.51%), Panipat (56.77%) and Sonapat (75.29%) in the Haryana Sub-region and Khairthal (49.36%) in the Rajasthan Sub-region. Out of the 52 towns for which comparable data was available for 1971, only 18 could be classified as very fast or fast growing. This indicates that most urban centres in the Region being in the shadow of larger urban centres are devoid of economic activities and higher order facilities. Despite being larger in population size, many of them have weak economic base to sustain even organic growth and hence have registered such low rates of growth.

3.5 Functional Classification of Urban Areas

Classification of urban areas based on functional specialisation indicates the close relationship between population concentration and functional diversification in the NCR. The 1971 Census had provided data on 9 categories of occupation which have been regrouped for analysis into five classes of economic activities viz. industries, trade and commerce, transport and communications, service and primary activities. However, the 1981 Census provides data only on four categories of workers viz. cultivators, agricultural workers, household industrial workers and 'others' which includes workers engaged in manufacturing other than household industries, construction, trade and commerce, transport, storage and communications, fishing, hunting, mining and quarrying and other services. So the effective change in functional character of towns as compared to 1971 Census is not discernible.

Diversification in functions has been the phenomenon in the higher order towns. All the towns upto Class III have shown greater diversification in terms of activity concentration. Industries, trade and commerce and primary activities to a lesser extent in many cases, are equally pronounced in these towns. However, with the limitation of data, all the higher order towns have shown 'others' orientation in 1981. The Class IV to VI towns most of which are either newly added in 1981 or became towns again in 1981 after

remaining declassified in 1971 had primary activities as either dominant function or equally dominant function amongst other functions in 1981, except a few. (Table 3.4).

The foregoing discussion indicates that the process of activity concentration has followed class size of towns. Industrial activities have not gained momentum in the lower order urban areas and consequently, diversification too has been limited to bigger urban centres only. Characteristic to metropolitan regions of such size, the smaller towns in the periphery of the Region stagnate in the shadow of Delhi and other bigger urban areas. The bigger centres provide better opportunities in terms of agglomeration economies for activity location and infrastructural facilities and thus encourage intra-regional migration from rural to urban and smaller urban to larger urban areas. While shadow effect of metropolitan towns on their periphery is a common phenomenon, there is a need to clearly define the role of different size towns in terms of their functions.

Table 3.4: Functional Classification of Towns in NCR 1971-81

Sl. No.	Name of the Town	Census Class Size	Population in 1981	Density (per sq.km) 1981	Growth rate in 1971-1981	Function in	
						1971	1981
1		2	3	4	5	6	7
Delhi UT Sub-Region							
1.	Delhi UA	I	5729283	10594	57.09	Others Industry	Others
2.	Alipur	V	6735	787	**	—	Others
3.	Biwana	IV	12637	745	**	—	Others
4.	Bijwasan	V	7389	678	**	—	Others
5.	Pehlampur Banger	V	5011	1073	**	—	Others
6.	Poth Khurd	V	7145	716	**	—	Others
Uttar Pradesh Sub-Region							
7.	Abdullapur	V	6383	3940	*	—	Primary-Others
8.	Agarwal Mandi	V	9353	10116	*	—	Primary-Others
9.	Aminagar Sarai	V	6837	3617	21.97	Industry-Trade & Commerce-Others	Others
10.	Anup Shahr	IV	15193	5866	23.99	Others—Industry—Primary	Others
11.	Aurangabad	IV	11622	3874	*	—	Others—Primary
12.	Babugarh	VI	2389	445	*	—	Others
13.	Baghpat	IV	17157	5957	47.07	Primary	Others—Primary
14.	Bahusama	V	7906	2635	*	—	Primary
15.	Baraut	III	46292	4468	48.07	Trade & Commerce-Industry—Others	Others
16.	Bhawan Bahadur Nagar	V	6779	1808	**	—	Others—Primary
17.	Bilaspur	V	4661	2188	*	—	Others
18.	Bugrasi	V	8307	1298	16.12	Primary—Others Industry	Others
19.	Bulandshahr	I	103436	11016	73.83	Others—Trade & Commerce—Industry	Others
20.	Chhaprauli	IV	13805	12550	*	—	Primary
21.	Chhatari	V	5862	982	*	—	Primary
22.	Dadri	IV	19723	3156	51.01	Others—Trade & Commerce—Industry	Others
23.	Dankaur	V	7935	802	14.18	Others—Trade & Commerce—Industry	Others
24.	Daurala	V	9146	8710	*	—	Primary
25.	Debai	III	22430	9627	31.62	Industry—Trade & Commerce—Primary	Others
26.	Doghat	IV	10019	10890	**	—	Primary
27.	Faridnagar	V	9116	20718	20.89	Industry—Primary	Others

1	2	3	4	5	6	7
28. Garmukteshwar	IV	17914	560	63.79	Primary Industry Others	Others
29. Ghaziabad (UA)	I	287170	4366	124.88	—	Others
30. Gulaothi	III	24416	10949	40.52	Trade & Commerce Industry	Others
31. Hapur	I	102837	17639	44.30	Trade & Commerce Industry—Others	Others
32. Hastinapur	IV	11637	3803	30.91	Industry—Others	Others
33. Jahangirabad	III	29301	10317	35.79	Primary—Industry Trade & Commerce	Others
34. Jahangirpur	V	6447	626	**	—	Primary—Others
35. Jewar	IV	15275	837	*	—	Others
36. Kakod	VI	4299	3495	*	—	Others—Primary
37. Karnawal	V	9895	8315	**	—	Primary
38. Khanpur	V	8311	5099	*	—	Primary
39. Kharkhoda	V	8708	4976	*	—	Primary—Others
40. Khekada	III	24984	20648	*	—	Others
41. Khurja	II	67119	6479	33.58	Industry—Others Trade & Commerce	Others
42. Kithaur	IV	13791	4522	*	—	Primary
43. Lawar	IV	11535	3178	*	—	Primary—Others
44. Loni	IV	10259	3901	*	—	Others
45. Mawana	III	37620	14525	51.3w	Diversified	Others
46. Meerut (UA)	I	536615	6640	44.34	Others—Industry	Others
47. Modinagar (UA)	II	87665	6105	101.67	Industry	Others
48. Murad Nagar	III	26047	16279	86.25	Industry—Trade & Commerce—Primary	Others
49. Narora	V	9573	1760	*	—	Others
50. Niwadi	V	7078	4424	*	—	Primary
51. OF Muradnagar	IV	13147	1983	45.66	Others	Others
52. Pahasu	V	9016	39200	45.66	Others	Others
53. Parikshitgarh	IV	11328	3293	*	—	Others
54. Patiala	V	7847	6539	**	—	Primary
55. Palauda	IV	10357	4523	*	—	Primary
56. Pilkhua	III	37884	8363	58.24	Industry	Others
57. Rabupura	V	8999	868		—	Primary—Others
58. Sardhana	III	30138	2145	36.48	Industry—Primary Trade & Commerce	Others
59. Sewalkhas	IV	10278	12534	**	—	Primary
60. Shajahanpur	V	8867	1483	20.80	Primary—Industry	Primary
61. Shikarpur	III	21449	43876	29.79	Primary—Industry Others	Others
62. Siana	III	22410	4335	35.79	Primary—Others Trade & Commerce	Others
63. Sikandrabad	III	43135	4913	34.67	Industry—Primary Trade & Commerce	Others
64. Tikri	IV	11315	10286	**	—	Primary
Haryana Sub-region						
65. Bahadurgarh	III	37488	4165	45.23	Others—Industry	Others
66. Bawal	V	7760	21556	18.85	Primary	Others
67. Beri	IV	13490	5208	9.35	Primary	Others—Primary
68. Faridabad Complex Administration	I	330864	1856	NA	Industry	Others
69. Farukknagar	V	6367	4760	16.04	Primary—Trade & Commerce—Industry	Others
70. Ferozepur	V	9400	1061	18.06	Primary—Trade & Commerce—Industry	Others
71. Ganaur	IV	16489	1820	96.32	Industry—Trade & Commerce—Others	Others

1	2	3	4	5	6	7
72. Gohana	III	26188	3986	56.81	Trade & Commerce Others—Primary	Others
73. Gurgaon	II	100877	4181	76.51	Others	Others
74. Hailey Mandi	IV	10140	3915	350.27	Trade & Commerce	Others
75. Hassanpur	V	5109	5494	**	—	Primary—Others
76. Hathin	V	6553	3293	**	—	Primary—Others
77. Hodal	IV	18740	8329	32.49	Diversified	Others
78. Jhajjar	III	24247	4041	27.97	Primary—Others— Trade & Commerce	Others
79. Jharsa	V	8412	842	**	—	Others
80. Kalanaur	IV	12380	2172	*		Others
81. Maham	IV	11722	3359	11.20	Primary—Trade & Commerce	Others
82. Nuh	V	5992	19973	26.68	Trade & Commerce Others	Others
83. Palwal	III	47328	8574	30.72	Others—Trade & Commerce—Industry	Others
84. Panipat	I	137927	6625	56.77	Industry—Trade & Commerce—Others	Others
85. Pataudi	V	8422	2165	39.32	Primary	Others—Primary
86. Rewari	II	51562	8509	17.49	Trade & Commerce Others—Industry	Others
87. Rohtak	I	166767	7570	33.68	Others—Trade & Commerce	Others
88. Samalkha	IV	13532	2222	**	—	Others
89. Sohna	IV	12667	3424	44.35	Trade & Commerce Others—Industry	Others
90. Sonipat	I	109369	5118	75.29	Industry—Other— Trade & Commerce	Others
91. Taoru	V	6912	19749	**	Primary—Industry	Others
Rajasthan Sub-region						
92. Alwar	I	145795	1822	45.25	Others	Others
93. Khairthal	IV	15962	728	49.36	Primary—Trade & Commerce	Others
94. Tijara	IV	12199	556	**	—	Others

Note:

* Declassified in 1971

** Newly added town

NA Not Available

3.6 Strategy Evolution

The strategy to be adopted should keep in view the following aspects:

- 1) that the population policy proposes to control the extraordinary growth of Delhi to 112 lakhs by the year 2001 and aims to achieve a moderate growth of DMA towns so that population increase in Delhi Metropolitan Area excluding Delhi is restricted to 38 lakhs by 2001. The excess 19 lakhs of urban population of Delhi would have to be diverted and contained in the urban areas beyond DMA.
- 2) that most of the regional towns are stagnating and lack diversification in their functional character. There is a need to evolve a spatially and functionally articulated settlement system with purposive development of urban areas of the Region beyond DMA to meet the objective of controlling the growth of Delhi and achieving balanced development in the Region. Specific studies* on migration pattern in the

* Study on 'Migration Patterns in the National Capital Region' conducted by National Institute of Urban Affairs (NIUA) for NCR Planning Board.

NCR indicate that about 80% of the potential migrants intend to move to Delhi when they ultimately decide to move. Further, there is a large intra-regional migration taking place at present within the NCR and in the context of the NCR, urban-urban movement has acquired special importance due to their volume.

3) that there are large number of rural settlements in the Region which are predominantly medium sized. The rural areas of the constituent States contribute greater number of migrants to Delhi mainly for employment and services. There is a need to identify few basic villages which may be provided with relatively higher order services to serve the scattered population around them.

Two-fold strategy:

(i) To revitalise the economy of the stagnating regional urban centres and to integrate them in a form of a well-knit system of settlements with specific functions that would encourage an orderly development of economic activities and, to integrate the small urban centres and villages in relation to priority towns to achieve the objective of balanced development of the NCR, the settlement pattern policy proposes to develop a four tier hierarchical system of settlements consisting of Regional centres, Sub-regional Centres, Service Centres and Basic villages. Even though such location and function recognition would be objective specific, the likely population size and probable functions of each tier settlement are as follows:

Sl. No.	Level of Settlements	Population Size	Functions
1.	Regional Centres	3.0 lakhs and above	to accommodate the overspill Delhi's population by creating employment opportunities in secondary and tertiary sectors and to act as a magnet centre for decentralisation of economic activities.
2.	Sub-regional Centres	0.50 lakh to 3.0 lakhs	To serve as a focal point with development and revenue functions as that of a Sub-divisional Headquarters with corresponding facilities. In addition, this also will serve as a growth centre with industrial and other economic activities.
3.	Service Centres	10,000 to 50,000	to cater to the rural hinterland as agro-service centres including marketing functions.
4.	Basic Villages	5,000 to 10,000	To cater to basic needs of cluster of villages

Whereas the main centres of utmost activity concentration in this hierarchical system are the Regional centres and Sub-regional centres, the Service towns and Basic villages are mutually dependent upon one another – in particular upon the Regional centres being self contained, thus forming an inter-dependent system independent to a great extent of the Delhi Metropolis.

(ii) To attract and contain the Delhi bound potential migrants to the extent of 19 lakhs, the 'intervening opportunities approach' would be followed. This is based on an understanding of migration motives and also on the assumption that the potential migrants will not be easily deterred from coming to the National Capital unless equally attractive possible destinations are developed between the origin and destination (Delhi) of migrants. It is further assumed that only a near metropolitan environment would be able to offer variety in occupational structure and opportunities and hence a few selected centres would be developed on an intensified scale with conscious intervention to organise and stimulate economic activities so that these intervening centres are able to attract and contain the Delhi bound potential migrants. Such towns would be developed on priority basis.

3.7 Order of Settlements – 1981

To identify such settlements which may form Regional and Sub-regional centres, a development hierarchy has been proposed. Every settlement depending on its size in terms of population and areal spread, location with reference to transport network, availability of social facilities and concentration of economic activities, places itself among others in a development hierarchy within the Region. In consonance with its size and rank, these centres provide higher order services to the scattered population around them.

The aim being identification of such a hierarchy mainly to select centres that may attract Delhi bound migrants, the urban areas of Delhi UT have not been incorporated in the analysis for its relative development. The various indicators that have been considered for determining the hierarchy of 87 urban settlements (excluding 6 settlements in Delhi UT and Murad Nagar of the Uttar Pradesh Sub-region for which data are not available) relate to revenue and development administration, demographic characteristics like population size, sex ratio, literacy level, growth trends during 1951-81, participation ratio and industrial work-force, rate of migration, location of various facilities, such as educational, health, road, railway, water supply, power, marketing facilities, financial institutions, recreational facilities etc. in relation to population size. A total number of 38 indicators were used.* Of the four tier settlement system, as has been envisaged in the policy, the first and second order settlements, i.e., Regional and Sub-regional centres have been identified, while the third and fourth order settlements, i.e. Service centres and Basic villages would be identified in the Sub-regional Plans.

The basic model that has been used to identify relative weightages of each settlement in reference to the 38 indicators is based on composite index. By taking 10% and 5% of the higher composite value obtained by any centre, the first and second order settlements have been identified as under, through a computer based model known as "Full information based composite Index" which is a modified form of "Factor Analysis":

Order of Towns	Sub-region	Population(1981)
1. Meerut	Uttar Pradesh	536615
2. Ghaziabad	Uttar Pradesh	287170
3. Faridabad Complex Administration	Haryana	330864
4. Rohtak	Haryana	166767
5. Alwar	Rajasthan	145795
6. Panipat	Haryana	137927
7. Sonipat	Haryana	109369
8. Bulandshahr	Uttar Pradesh	103436
9. Gurgaon	Haryana	100877
10. Modinagar (UA)	Uttar Pradesh	87665
11. Hapur	Uttar Pradesh	102837
12. Khurja	Uttar Pradesh	67119
13. Shikarpur	Uttar Pradesh	21499
14. Mawana	Uttar Pradesh	37620
15. Baraut	Uttar Pradesh	46292

* Study on 'Settlement System in NCR' by Physical Research Laboratory, Ahmedabad for NCR Planning Board.

16.	Rewari	Haryana	51562
17.	Pilkhua	Uttar Pradesh	37884
18.	Sikandrabad	Uttar Pradesh	43135
19.	Murad Nagar	Uttar Pradesh	26047
20.	Bahadurgarh	Haryana	37488
21.	Palwal	Haryana	47328
22.	Pahasu	Uttar Pradesh	9016
23.	Khekhada	Uttar Pradesh	24984
24.	Jahangirabad	Uttar Pradesh	29301
25.	Gohana	Haryana	26188
26.	Gulaothi	Uttar Pradesh	24416
27.	Sardhana	Uttar Pradesh	30138
28.	Debai	Uttar Pradesh	22430
29.	Jhajjar	Haryana	24247
30.	Siana	Uttar Pradesh	22410
31.	Ganaur	Haryana	16489
32.	Bawal	Haryana	7760
33.	Faridnagar	Uttar Pradesh	9116
34.	Baghpat	Uttar Pradesh	17157

The urban centres ranked 1 to 14 qualify for first order settlements. However, considering their spatial organisation in the regional context and location of them being too close to each other, the towns of Shikarpur and Mawana in the U.P. Sub-region are proposed to be developed as Sub-regional centres. For the same reason, the second order towns of Rewari and Palwal have been proposed to be developed as first order settlements. Sonipat (Haryana) and Modi Nagar UA (Uttar Pradesh), which have ranked in developmental hierarchy to be considered as Regional Centres, owing to their location and direction of development that has been taking place, would be developed as Sub-regional centres. The population policy has already proposed moderate growth of the DMA towns excluding Delhi and as such Regional Centres would have to be identified from among the centres that rank in the development hierarchy and are located beyond the DMA. As such, the finally identified Regional centres which would be developed on priority basis and would be known as priority towns are:

Regional Centres

1. Meerut
2. Rohtak
3. Alwar
4. Panipat
5. Bulandshahr
6. Hapur
7. Khurja
8. Rewari
9. Palwal

Sub-region

- Uttar Pradesh
Haryana
Rajasthan
Haryana
Uttar Pradesh
Uttar Pradesh
Uttar Pradesh
Haryana
Haryana

Sub-regional Centres

1. Sonipat
2. Modi Nagar (UA)
3. Shikarpur
4. Mawana
5. Baraut
6. Pilkhwa
7. Sikandrabad
8. Murad Nagar
9. Pahasu
10. Khekhada
11. Jahangirabad
12. Gohana
13. Gulaothi
14. Sardhana
15. Debai
16. Jhajjar
17. Siana
18. Ganaur
19. Bawal
20. Farid Nagar
21. Baghpat

Sub-region

Haryana
Uttar Pradesh
Uttar Pradesh
Uttar Pradesh
Uttar Pradesh
Uttar Pradesh
Uttar Pradesh
Uttar Pradesh
Uttar Pradesh
Uttar Pradesh
Uttar Pradesh
Haryana
Uttar Pradesh
Uttar Pradesh
Uttar Pradesh
Haryana
Uttar Pradesh
Haryana
Haryana
Uttar Pradesh
Uttar Pradesh

The Regional towns would be developed primarily to accommodate the over-spill of Delhi's population by creating employment opportunities in secondary and tertiary sectors and they would act as magnet-centres for decentralisation of economic activities. In order that various regional centres are planned to accommodate the excess population of Delhi, a rational distribution has to be attempted. To decide whether all these centres should be equipped to attract and contain potential migrants or the number should be limited to a few, a scientific study had been undertaken to evolve alternative models* for primary urban form in the NCR.

Various scenario's were evaluated against developmental costs for residential, commercial, industrial, public and semi-public and community facilities, city infra-structure and provision of Telecommunication facilities and benefits—assessed in terms of employment absorption potentiality of each scenario, acceptable rate of growth, standard of living and an acceptable standard of linkages between Delhi and the scenario settlements. Cost-efficiency ratios have been evolved for each scenario. The results indicate that the model which involves developing all the Regional Centres/Complexes (8) to attract and contain the additional population to be directed from Delhi is the least cost and most efficient model. Growth trends and regional potentials of each of the selected Regional Centres have been assessed. The Regional Centres — Bulandshahr and Khurja would be developed as a complex while Rewari would be planned in relation

* Study on 'Methodology for Alternative Models for Towns of National Capital Region' by Central Building Research Institute (CBRI), Roorkee for NCR Planning Board.

to Dharuhera and Bhiwadi Industrial townships in a form of a complex. The priority towns and their assigned population are as under:

Regional Centre		Population (in lakhs)	
1981		2001	
Uttar Pradesh			
1.	Meerut	5.36	15.50
2.	Hapur	1.02	4.50
3.	Bulandshahr— Khurja Complex	1.03 0.67	5.00 3.00
Haryana			
4.	Palwal	0.47	3.00
5.	Panipat	1.38	5.00
6.	Rohtak	1.68	5.00
7.	Rewari— Dharuhera	0.52 —	1.10 0.75
Rajasthan			
	Bhiwadi Complex	—	1.15
8.	Alwar	1.47	5.00

3.8 Rural Development Strategy

It is expected that if the living conditions of the people in rural areas are improved by providing community facilities, health services, recreational, cultural, civic and other amenities in addition to employment opportunities in the vicinity if not in each village, the rapid migration of the rural population to urban centres in search of employment and a better life in the wake of rising expectations would be diminished — if not totally curtailed. The service centres and basic villages as identified in the Sub-regional Plans would be based on their centrality to serve greater volume of population.

ECONOMIC PROFILE 1981-2001

4.1 Regional Economic Base

In 1971, the participation rate of work-force in the Region was 27.44%. Primary activities were the dominant occupations with 44.29% of the work-force engaged in such activities while 21.33% were employed in services and 16.21% in manufacturing activities (Table 4.1).

Table 4.1 Distribution of Workforce 1971

Sub-region	Work Force (in lakhs)	Participation rate (%)	Proportion of work force in (%)				Transport storage, communication (VIII)	Services
			Primary (I to IV)	Manufacturing V (A) & V (b)	Construction (VI)	Trade & commerce (VII)		
Delhi	12.28	30.21	4.95	23.74	5.30	19.91	9.36	36.74
Haryana	9.65	25.02	61.63	12.86	2.00	6.73	2.54	14.24
Rajasthan	2.16	26.33	73.42	6.64	1.19	4.98	1.46	12.31
Uttar Pradesh	14.82	27.25	61.39	13.54	1.41	6.32	2.86	14.48
NCR	38.91	27.44	44.29	16.21	2.77	10.64	4.76	21.33

Source: Compiled from Census of India Tables – 1971

In 1981, the participation rate was 28.69% against 27.44% in 1971. There was a substantial reduction in the proportion of workers in primary activities. Agricultural labourers(I) and cultivators(II) together formed only 37.38% of the total work force in 1981 as against 42.98% in 1971. Work force in manufacturing other than household industry, construction, trade and commerce, transport, storage, and communications, livestock and forestry, mining and quarrying and other services increased from 52.74% in 1971 to 59.33% in 1981 indicating a shift in the occupational character of the Region from primary to secondary and tertiary activities (Table 4.2).

4.2 Urban Employment Structure

The urban population formed about 39.28% of the total population in 1971 while the urban participation rate was 29.36%. The Region accommodated many important administrative/service centres of the constituent States and as such the urban areas of the Region had 35.13% and 25.01% respectively of the total workforce employed in service and industrial occupations. Being located in the rich agricultural belt, trade and commerce has been one of their main functions with 21.24% of the work force in trade and commerce occupation (Table 4.3).

Table 4.2 Distribution of Workforce – 1981

Sub-region	Total Workforce (in lakhs)	Participation Rate (%)	Proportion of Workers engaged in (%)			
			Cultivators (I)	Agricultural Labourers (II)	Household Industries Mfg, Processing, servicing and repairs V(a)	Other* Workers III, IV, V(b) & VI to IX
Delhi	19.86	31.93	1.75	0.81	1.69	95.75
Haryana	13.66	27.65	41.59	12.67	3.26	42.48
Rajasthan	2.71	25.45	60.96	5.98	2.72	30.34
Uttar Pradesh	18.82	27.01	40.54	16.98	4.81	37.67
NCR	55.05	28.69	27.84	9.54	3.29	59.33

*Other workers include workers engaged in Livestock, Forestry, Fishing, Hunting and Plantation (III); Mining and quarrying (IV); Manufacturing other than Household Industry V(b); Construction (VI); Trade and Commerce (VII) Transport, Storage and Communications (VIII) and others (IX).

Source : Compiled from Census of India Tables – 1981.

Table 4.3 Distribution of Urban Workforce – 1971

Sub-region	Total Work force (in lakhs)	Participation rate (%)	Proportion of Workers in (%)					
			Primary (I to IV)	Manufacturing V (A) & V (b)	Construction (VI)	Trade & commerce (VII)	Transport, storage, communications (VIII)	Services (IX)
Delhi urban	11.17	30.63	1.59	23.98	5.51	21.46	9.61	37.85
Haryana	1.79	26.29	10.00	28.89	2.82	23.20	7.23	27.86
Rajasthan	0.28	24.97	10.41	18.16	4.30	21.32	7.20	38.61
Uttar Pradesh	3.01	27.50	11.26	27.18	2.94	19.18	10.34	29.10
NCR	16.25	29.36	4.47	25.01	4.71	21.24	9.44	35.13

Source: Compiled from Census of India Tables – 1971

Among the Sub-regions, Haryana and Uttar Pradesh urban areas had about 28.89% and 27.18% of their workforce respectively engaged in manufacturing activities while the Rajasthan Sub-region's urban areas had only 18.16% in this occupation. However, the Rajasthan Sub-region's urban areas were primarily administrative towns with 38.61% of the workforce in services.

In 1981, there was a marginal increase in the participation ratio. It was 30.38% in 1981 against 29.36% in 1971. The increase has been mainly in the Haryana and Rajasthan Sub-regions. However, there has not been a perceptible change in the occupational structure during 1971-81. In 1971, about 93.4% of the workforce remained in 'Other' activities which include construction, trade and commerce, manufacturing other than household industries, transport, storage and communications, livestock, forestry, fishing and other services and it remained at 92.6% in 1981 (Table 4.4).

Table 4.4 Distribution of Urban Workforce – 1981

Sub-region	Total Urban Population (in lakhs)	Urban Workforce (in lakhs)	Participation Rate (%)	Work Force in (%)			
				Cultivation (I)	Agricultural labourers (II)	Household industries Mfg. Processing & Repairs V(a)	Other workers (III, IV, V(b) & VI to IX)
Delhi	57.68	18.57	32.20	0.39	0.26	1.69	97.66
Haryana	12.07	3.52	29.18	5.23	2.69	4.00	88.08
Rajasthan	1.74	0.46	26.45	7.66	1.29	3.41	87.64
Uttar Pradesh	19.49	5.32	27.28	8.15	6.23	7.14	78.48
NCR	90.98	27.87	30.38	2.60	1.72	3.05	92.63

Source : Compiled from Census of India Tables : 1981

4.3 Proposed Employment Structure – 2001

The population projection and assignment for the Sub-regions have been made in the Chapter on 'Demographic Profile'. While the total population is expected to reach 325 lakhs by 2001 against 191.92 lakhs of 1981, the urban population would be 234 lakhs against 91 lakhs as of 1981. Such a substantial shift in the rural-urban composition by 2001 warrants greater employment opportunities in the non-agricultural activities. Along with the expected population growth, demand for employment opportunities too would increase. With the proposed induced development in the Region beyond Delhi Metropolitan Area specially in the priority towns, employment opportunities would have to be made available at a greater scale and as such a higher participation rate is expected in the Region. While the participation rate of total population may reach about 31 to 33% by 2001 as against 28.69% in 1981, the urban participation rate is expected to reach around 33 to 35% as against 30.38% in 1981 (Table 4.5):

Table 4.5 Participation Rates 1971-2001

Year	Total population (in lakhs)	Rural	Urban	In Percentage
				Total
1971	140.6	26.54	29.36	27.44
1981	191.9	26.55	30.38	28.69
2001	325.0	L 26	33	31
		H 28	35	33

L – Low Estimates H – High Estimates

The Region is likely to have a total employment potential for 100.75 lakhs (L) 107.25 lakhs (H) of persons by 2001. In this, the urban areas are expected to provide employment opportunities for about 77.22 lakhs to 81.90 lakhs of persons by 2001. The Table 4.6 indicates the projected population and likely participation rates by the year 2001.

4.4 Delhi Urban Area and Delhi Metropolitan Area

As of 1981, Delhi had a participation rate of 32.20% against the participation rate of 30.63% in 1971. The participation rate for Delhi UT is expected to reach 35% by 2001 and it would be mainly a service cum

Table 4.6 Participation Rate – 2001

Population – 2001 (in lakhs)			Employment (in Lakhs)					
Rural	Urban	Total	Rural		Urban		Total	
			L	H	L	H	L	H
91.00	234	325	23.53	25.35	77.22	81.90	100.75	107.25
28%	72%	100	(25.85)	(27.86)	(33.00)	(35.00)	(31.00)	(33.00)

L – Low Estimates

H – High Estimates

Note: Figures in brackets indicate likely participation rate (%) by 2001 under the assumption of Low and High Estimates.

industrial city. The Delhi was primarily a service city with almost 37.8% of its workforce engaged in services. This declined to 31.4% in 1981 while the workforce in the manufacturing including household industry which was only 23.9% in 1971 rose to 29.18% in 1981, thereby clearly showing a functional shift in Delhi from administrative to industrial city. Therefore, it is proposed to keep the work force proportion in service at 31.5% and manufacturing 29% by 2001.

Forecasts of employment are difficult to attempt in case of the DMA towns excluding Delhi since spurt in activities and rapid population growth have been only a recent phenomenon in this area. However, taking clue from the trends exhibited by these towns in terms of nature of activities concentration in recent years, the likely employment structure by 2001 has been worked out. Emphasis has been to derive location specific realistic structure rather than search for generalistic modules. The assumptions made in the forecast are as follows:

- 1) Owing to the location of the DMA towns adjacent to Delhi, the DMA towns would attract economic activities at a greater scale and hence, the participation rate would be much higher in 2001, than that obtaining in 1981.
- 2) These towns initially having specially been planned for industrial development, would continue to generate employment opportunities in industries. However, with a view to restricting the population growth to a moderate scale, only small scale industries would be permitted in the DMA towns.
- 3) All these towns having crossed the initial stage and entered the take-off stage of physical development, would have the potential for employment opportunities in construction, trade and commerce, and transport activities.

Table 4.7 indicates employment structures during the years 1971 and 1981 and Table 4.8 presents the proposed employment structure by 2001.

4.5 Economic Base of Priority Towns

In the preceding paragraphs, an attempt has been made to project the regional occupational structure for the NCR in broad terms for 2001. An attempt is being made to project the occupational structure of the towns identified for priority development reflecting the role these towns are expected to play in inducing the growth and thereby creating employment opportunities to meet the objectives of the Plan. In the context of the policy of deflecting purposely 19 lakhs of urban population from Delhi to the priority towns beyond the DMA, it is proposed to develop such activities that are appropriate to the location of priority towns, their potential and the growth process that has already set in. It is expected that with associated incentives, such activities may continue to thrive to provide greater employment opportunities.

The occupational bias which each priority town will have has been indicated based on the present work force composition and employment structure and trends exhibited in the past. In view of the manufacturing employment having greater multiplier effect on the expansion of employment

Table 4.7 Employment Structure of DMA Towns 1971-81

Town	Popu- lation 1971 (in lakhs)	Parti- cipa- tion rate (%)	Proportion (%) of workers in 1971 in							Proportion (%) of workers in (1981)				
			Pri- mary	Indus- try	Cons- truc- tion	Trade & com- merce	Trans- port & stor- age com- muni- ca- tions	Other servi- ces	Popu- lation 1981 (in lakhs)	Parti- cipa- tion rate (%)	Culti- vators	Agri. labou- rers	Hou- sehold Indus- try	Others
Delhi Urban	36.17	30.63	1.59	23.98	5.51	21.46	9.61	37.85	57.68	32.2	0.39	0.26	1.69	97.66
Ghaziabad (including Loni)	1.28	28.5	4.08	34.63	4.61	17.4	14.74	24.54	2.97	29.93	2.18	1.91	2.99	92.92
NOIDA	—	—	—	—	—	—	—	—	0.42*	—	—	—	—	—
Faridabad — Ballabhgarh	1.78	32.86	3.39	54.68	2.66	13.03	3.93	22.31	3.31	33.92	3.02	1.16	2.78	93.04
Gurgaon	0.57	25.4	3.54	15.8	3.55	20.44	9.73	46.94	1.01	31.62	2.29	1.31	3.9	92.50
Bahadurgarh	0.29	24.25	10.38	27.09	1.79	21.15	8.47	31.12	0.37	28.13	5.3	2.81	3.02	88.87
Kundli	—	—	—	—	—	—	—	—	—	—	—	—	—	—

*Estimated population

Source: Compiled from Census of India Tables 1971 and 1981.

Table 4.8 Proposed Employment Structure in DMA Towns — 2001

Town	Popula- tion 2001 (in lakhs)	Proposed parti- cipa- tion rate (%)	Total workers (in lakhs)	Proportion of workers (%) in					
				Primary	Industry	Const- ruction	Trade & Com- merce	Transport & Com- muni- cations	Services
Delhi UT	112	35	39.2	58800 (1.5)	1136800 (29.0)	196000 (5.0)	862400 (22.0)	431200 (11.0)	1234800 (31.5)
Ghaziabad	11.0	30	3.3	1650 (0.5)	125400 (38.0)	19800 (6.0)	51150 (15.0)	33000 (10.0)	99000 (30.0)
NOIDA	5.5	35	1.925	3850 (2.0)	77000 (45.0)	11550 (6.0)	38500 (20.0)	23100 (12.0)	38500 (20.0)
Faridabad Ballabhgarh	10	35	3.5	7000 (2.0)	157500 (45.0)	21000 (6.0)	56000 (16.0)	24500 (7.0)	80500 (23.0)
Gurgaon	7	35	2.45	4900 (2.0)	98000 (40.0)	24500 (10.0)	39200 (16.0)	24500 (10.0)	53900 (22.0)
Bahadurgarh	2	35	0.7	4200 (6.0)	21000 (30.0)	2800 (4.0)	17500 (25.0)	700 (10.0)	17500 (25.0)
Kundli	1.5	35	0.525	1050 (2.0)	21000 (40.0)	5250 (10.0)	8400 (16.0)	5250 (10.0)	11550 (22.0)

Note: Figures in brackets indicate % to total workers of respective town.

opportunities than employment in other sectors, a bias oriented projection such as 'highly industrialised', 'moderately industrialised' and 'low industrialised' for each town along with proportion in other occupations have been worked out based on all India average proportion of workers in towns of similar size and character. The occupational structure of priority towns as of 1971 and 1981 are presented in Table 4.9 while Tables 4.10 and 4.11 present the anticipated participation and composition of work force in terms of percentage and absolute numbers.

4.6 Development of Economic Activities in NCR

The basic character of the regional economy of the National Capital Region would have a change from the one of agricultural and pre-industrial to more diversified one since more than 70% of the population would be living in urban areas by 2001. This would entail the creation of more jobs in non-agricultural occupations than at present. For this purpose, there should not only be creation of additional activities in the existing and new centres outside urban Delhi, but also development of agro-based industries in the rural areas in order to support urbanisation on the one hand and to stabilise the rural economy on the other.

Table 4.9 Employment Profile of Priority Towns – 1971-81

Town	Popu- lation 1971 (in lakhs)	Parti- cipa- tion rate (%)	Proportion (%) of workforce in 1971							Proportion (%) workforce in				
			Pri- mary	Indus- try	Cons- truc- tion	Trade & com- merce	Trans- port, sto- rage, com- muni- ca- tions	Other servi- ces	Popu- lation 1981 (in lakhs)	Parti- cipa- tion rate (%)	Culti- vators (I)	Agri- cul- tur- lab- our- ers (II)	Hou- se III, IV, hold Ind- ustry V(a)	Others V(b), VI-IX
Meerut	3.68	28.59	4.53	24.68	2.32	18.17	9.68	40.70	5.36	28.26	1.75	2.43	9.32	86.50
Hapur	0.71	25.43	13.22	22.24	2.54	24.12	15.53	21.65	1.02	25.85	3.80	6.19	4.19	85.82
Bulandshahr	0.60	25.00	5.93	19.83	3.38	27.38	11.53	31.95	1.03	24.34	3.77	2.32	4.99	88.92
Khurja	0.50	27.03	13.31	25.29	3.06	23.52	10.17	24.05	0.67	26.01	5.77	4.12	4.97	85.13
Panipat	0.88	26.77	9.47	32.82	2.70	25.86	6.05	23.10	1.38	30.37	2.32	2.83	7.77	87.08
Rohtak	1.25	24.07	4.67	16.77	2.62	29.44	8.68	37.82	1.68	26.68	2.73	1.25	2.84	93.17
Palwal	0.36	24.30	16.59	17.97	4.43	25.59	8.11	27.36	0.47	26.90	8.52	2.40	3.60	85.48
Rewari	0.44	23.94	4.24	20.67	1.96	35.09	16.33	21.71	0.52	26.68	1.98	0.43	8.51	89.08
Dharuhera	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bhiwadi	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Alwar	1.00	25.02	7.78	18.54	4.43	21.08	7.60	40.57	1.47	26.73	4.21	0.95	3.09	91.75

Source: Compiled from Census of India Tables – 1971 and 1981.

Major employment generators for dispersal within the National Capital Region fall under three categories: Government and Public Sector Offices, Wholesale Trade and Commerce and, Industry. For the dispersal and development of economic activities in the Region, a three tier policy approach has been envisaged in the Plan. A policy of strict control for creation of employment opportunities within the Union Territory of Delhi, moderate control outside Delhi within the Delhi Metropolitan Area and encouragement with incentives in the area outside Delhi Metropolitan Area within the NCR is proposed for the balanced development of the Region.

Table 4.10: Proposed Occupational Structure in the Priority Towns by 2001

(in Percentage)

Priority Town	Predominant Occupation (Proposed)	Population 1981	Projected Population 2001	Assigned Population 2001	Participation Ratio -1981 (%)	Participation Ratio -2001 (%)	Proportion (%) of workers in					
							Primary	Industry	Construction	Trade and Commerce	Transport & Storage	Service Communications
1. Meerut	Service-Industry	5.36	10.28	15.50	28.26	32	2	29	4	20	9	36
2. Hapur	Industry, Trade & Commerce	1.02	2.3	4.50	25.85	30	6	28	4	22	13	27
3. Bulandshahr-Khurja	Industry	1.03	2.35	5.00	24.94	30	4	40	4	20	12	20
4. Panipat	Industry	0.67	1.21	3.00	26.01	30	4	40	4	20	12	20
5. Rohtak	Service-Industry	1.38	2.86	5.00	30.37	32	4	40	4	20	12	20
6. Palwal	Service-Industry	1.68	2.97	5.00	26.68	30	7	28	4	20	13	28
7. Rewari	Service, Trade & Commerce, transport	0.47	0.63	3.00	26.9	30	9	15	4	17	21	34
8. Alwar	Service-Trade & Commerce.	0.52		1.10	26.68	30	9	15	4	21	15	36
	Dharuhera		0.77	0.75	—	30	5	50	4	16	7	18
	Bhiwadi			1.15	—	30	5	50	4	16	7	18
8. Alwar	Industry Service	1.47	2.85	5.00	26.73	30	5	30	4	20	11	30

Table 4.11: Projected workforce by Occupations in the Priority Towns 2001

Priority Town	Participation Ratio -2001 (%)	Total Workers -2001 (in lakhs)	No of workers in						
			Primary	Industry	Construction	Trade & Commerce	Transport, Storage, & Communication.	Service	
1. Meerut	32	4.96	9920	143840	19840	99200	44640	178560	
2. Hapur	30	1.35	8100	37800	5400	29700	17550	36450	
3. Bulandshahr-Khurja	30	1.5	6000	60000	6000	30000	18000	30000	
4. Panipat	30	0.9	3600	36000	3800	18000	10800	18000	
5. Rohtak	32	1.6	6400	64000	6400	32000	19200	32000	
6. Palwal	30	1.5	10500	42000	6000	30000	19500	42000	
7. Rewari	30	0.9	8100	13500	3600	15300	18900	30600	
8. Alwar	30	0.33	2970	4950	1320	6930	4950	11880	
	30	0.23	1150	11500	920	3680	1610	4140	
	30	0.345	1725	17250	1380	5520	2415	6210	
8. Alwar	30	1.5	7500	45000	6000	30000	16500	45000	

A. GOVERNMENT AND PUBLIC SECTOR OFFICES

Delhi is a multifunctional city serving as a magnet to all sections of society for not only the immediate region but also the entire country. The major attraction in Delhi has been the employment in the Government Offices and Public Sector Undertakings, which have been expanding fast. The setting up of a large number of foreign embassies, foreign missions, research and cultural organisations have also had its distinct impact on the growth of the city.

The employment in the various types of the Government and Quasi-Government offices has been constantly increasing ever since 1921 (Table 4.12). 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 2.30 lakhs in 1985. While comparing the employment of 1941 with the present employment, it may be seen that more than two lakhs new jobs have been created in this sector during the period just preceding the independence and the post independence period. The alarming addition of 1.17 lakh jobs in Central Government offices during the decade 1961-71 caused concern to the planners and the administrators alike and a curb in the sector of employment by way of deflecting new job opportunities to the other NCR towns was envisaged in the NCR plan of 1973. Besides this, it was also considered to shift some of the Central Government offices outside Delhi to the priority towns of the NCR where some infra-structural facilities already existed. The addition during the 1971-81 decade has been of the order of 0.14 lakh only but, this clearly shows that

Table 4.12 Employment in Public Sector Offices in Delhi (1921-85)

(Figures in lakhs)

Sector	1921	1931	1941	1951	1961	1971	1981	1982	1983	1984	1985
1. Central Govt.	0.08	0.11	0.26	0.85	0.94	2.11	2.25	2.31	2.29	2.35	2.30
2. Delhi Adm.	0.01	0.03	0.03	0.07	0.25	0.53	0.58	0.62	0.65	0.64	0.65
3. Local Bodies	0.02	0.01	0.12	0.14	0.34	0.9	1.09	1.13	1.17	0.83	0.84
4. Quasi-Govt.	N.A.	N.A.	N.A.	N.A.	0.06	0.56	1.41	1.51	1.63	1.72	1.83
Total	0.11	0.15	0.41	1.06	1.59	4.1	5.33	5.57	5.74	5.54	5.62

Source: Delhi Statistical Handbook — 1986

there has been no noticeable movement of Central Government offices outside Delhi. At the same time, the employment in Government Undertakings poses an alarming situation and continues to rise unabated. The employment was only 6,000 persons in 1961 which grew to 1.41 lakhs in 1981, adding nearly 1.35 lakh persons in just two decades. In the decade 1971-81, about one lakh persons sought jobs in these Undertakings, which means a total addition of roughly 5 lakh population during the decade 1971-81 through employment in Public Sector Undertakings. During the period 1981-85, there has been an addition of 42,000 jobs in this sector, meaning that the trend continues to remain the same.

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 meagre 3,000 persons employment which grew to 1.82 lakh persons in 1983 but the employment declined to 1.49 lakh persons by 1985.

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 located in Delhi, in the name of performing liaison functions and to avail superior infra-structural facilities, these undertakings, instead of operating a small liaisoning unit in Delhi, overlooking the costlier living and scarcity of space for office establishments and housing needs in Delhi, have established their huge offices here. These Undertakings operate on commercial basis and are in a position to seek built-up space for offices and housing from open market.

The result is that the 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 negligible in 1961 in comparison to Central Government employment, is now expected to outgrow 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 somewhat stabilised or constant trends whereas employment in Quasi-Government activities is expected to register still a higher rate of growth and needs to be curbed effectively.

To ensure that Central Government offices and Public Sector Undertakings do not add to further employment, a three tier policy is proposed:

i) 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 criterion for location of offices in the Capital should be that they perform ministerial functions, protocol functions or liaison functions 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 identified and shifted from Delhi. In the case of Public Sector offices, there is an urgent need to scrutinise the list of existing offices and allow them to retain only very small establishments to cater for ministerial and liaison functions. The rest of the establishments should be shifted out of Delhi. The accommodation which may thus become available could be used to cater to the needs of the essential growth of Central Government offices.

ii) Control outside Delhi but within the DMA

A similar control on the opening of new Central Government and Public Sector offices of 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 alone should be allowed to be located in the DMA towns. 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 also. Rest of them have to go out to the priority towns to be developed in the NCR or in the countermagnet areas identified by the Board.

iii) Incentives outside DMA but within NCR

The Central Government offices which are considered for being shifted from Delhi and DMA towns should be located in other towns of the NCR and incentives in the form of CCA, HRA etc. as given to employees working in Delhi, should be given to employees who may be affected by this shifting for a limited period. Other incentives like providing Government accommodation, generous allowances for study of their children also be given to act as an incentive.

B. WHOLESALE TRADE AND COMMERCE

The other important economic activity which has exhibited strong element of centralisation in Delhi is the wholesale and distributive trade. This has been facilitated due to four determining factors which have been favourable to Delhi and given it dominance over the Region: 1) the spatial location of Delhi in relation, 2) the resources available in Delhi and its environs, 3) the attractive tax structure, and 4) 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 only to Bombay and Calcutta.

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 19.30. The total number of workers increased from 1,17,338 to 1,43,809 during this 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, 4,13,430 people were working which is about 22% of the total workers. The number of workers in trade and commerce sector has almost doubled during the decade 1971-81.

As per information gathered through the 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 the revised master plan of Delhi, it has been revealed that out of the total 12,000 commodity handling shops surveyed, the largest number of 2142 shops, i.e. 17.8% were of textile products, followed by auto-motor parts and machinery (1965 shops, 16.3%) fruits and vegetables (858 shops, i.e. 7.1%) hardware and building materials (659 shops, i.e. 5.5%) and paper, stationery and books (590 shops, i.e. 4.9%) (Table 4.13).

Table 4.13 Wholesale shops by Commodities in Urban Delhi – 1981

Sl. No.	Commodity	No. of Shops	%
1.	Textile 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 materials	659	5.5
5.	Paper stationery and books	590	4.9
6.	General merchant and kiriyana	541	4.5
7.	Iron and steel	423	3.5
8.	Bicycle, tyres and tube	411	3.4
9.	Electrical and electronics	405	3.4
10.	Chemicals	365	3.1
11.	Rubber and plastic goods	383	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 toiletries	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, ghees etc.	110	0.9
25.	Foot wear	71	0.6
26.	Pan, beedi, cigarette	69	0.6

Sl. No.	Commodity	No. of Shops	%
27.	Water, clock, opticals	47	0.4
28.	Fodder and straw	34	0.3
29.	Medicines	28	0.2
30.	Surgical and scientific instruments	18	0.1
31.	Seeds	18	0.1
32.	Cotton	14	0.1
33.	Others	15	0.1
		12,029	100.0

Source: Perspective Planning Wing, DDA.

The major part of the commodities which are brought to Delhi are distributed outside Delhi. A survey conducted in 1981 with regard to distribution of wholesale commodities outside Delhi revealed that percentages of exports outside Delhi, in some of the commodities like textiles and textile products, radio, T.V. parts, fruits and vegetables, electrical and electronics, chemicals, food grains, cosmetics and toiletries, dry fruits and spices, surgical and scientific instruments were as high as 80 (Table 4.14).

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

The two important aspects which are to be considered while highlighting the distributive trades of Delhi are:

- i) The concentration of wholesale activity in central city has grown in an unplanned manner and has resulted into congestion, encroachment of public land, traffic bottlenecks and parking problems, besides causing excessive noise in the area, thus reducing the quality of life of the resident population.

- ii) Due to the concentration of trade and commerce activities in Delhi, a regional imbalance has been created. The other towns of the Region are lacking in economic activities with weak economic base.

The wholesale trade in Delhi is more regional in nature than local. It is, therefore, in the larger interest of regional development and the necessity of limiting population of Delhi within manageable limits that consideration has to be given to the shifting of some of these distributive trades along with dispersal of Central Government offices and industries in the Region.

In order to achieve the objective of harmonised development of the Region, and to curb population pressure on Delhi and for restructuring the economy of the Region, relocation of the distributive trades of Delhi in the various towns of the NCR is necessary. A three tier approach in this direction is proposed to be adopted.

a) *Disincentives within Delhi*

An approach of disincentives to the wholesale trades which are not directly consumed in Delhi should be adopted. Only those wholesale trades 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 in Delhi.

b) *Controlled development outside Delhi within DMA*

The policy of checks and disincentives is also to be followed in case of DMA towns, but with some relaxations. Only those wholesale trades which are directly used and consumed in Delhi and DMA towns

should only be allowed. There are certain wholesale trades in Delhi which are hazardous because of their location in congested areas and due to bulk handling activities such as plastic and PVC goods, chemical, timber, food grains, iron and steel and building material. These wholesale trades should be encouraged to develop in DMA towns.

Table 4.14 Distribution of Wholesale Commodities by exports outside Delhi – 1981

Sl. No.	Commodity	Ratio of 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 toiletries	80
8.	Dry fruits and spices	80
9.	Surgical and scientific instruments	80
10.	Leather, fur, skin and woollen products	78
11.	Bicycles, Tyres and Tubes	77
12.	Hosiery	75
13.	Watch, Clock, opticals	75
14.	Petroleum products	71
15.	General merchants and Kiryana	64
16.	Rubber and Plastic goods	63
17.	Other metal products	60
18.	Medicines	60
19.	Auto motor parts and machinery	50
20.	Paper stationery and books	50
21.	Furniture and fixtures	50
22.	Hardware and building material	40
23.	Timber and plywood	40
24.	Iron and steel	34
25.	Crockery and utensils	25

Source : Perspective Planning Wing, DDA

C) Outside DMA within NCR

Incentives, concessions and infra-structure should be made available in the regional towns to encourage and accelerate the growth of trade.

Possible Areas of Development of the Distributive Trades:

Such trades should be considered for shifting and development in the areas outside Delhi Metropolitan Area within the NCR for which Delhi performs at present the functions of a regional centre. Some of these

trades may be identified as cloth trade, bicycle trade, fruits and vegetables, dry fruits, spices, herbs, iron and steel, oil, motor parts and machinery and hosiery. The infrastructure that would encourage and accelerate the growth of trade in regional towns are:

1. Accessibility by rail and road and central location in the Sub-regions;
2. Railway sidings and goods shed facility;
3. Truck-terminal facilities;
4. Telecommunication facilities;
5. Commercial warehousing facilities;
6. Wholesale market yards;
7. Housing and social infrastructure;
8. Financial institution and banking facilities;
9. Fiscal incentives.

A study with regard to inward and outward movement of certain commodities in Delhi along the National Highways and major roads was done by DDA in 1981 (Table 4.15). The study identified the areas from where these commodities were procured and distributed. For suggesting locations of the distributive trades in different towns of the NCR, potential surveys of the towns and their economic linkages with Delhi would be necessary. In addition, re-routing of the commodities in the new wholesale markets and the pattern of their distribution may also be necessary. These studies should be carried out by the NCRPB on priority basis and alternative locations suggested. The Board should also actively participate or assist development of such wholesale markets.

Table 4.15 Commodity-wise goods movement by N.H./Major Road in Delhi – 1981

Unit: Trucks

S. No.	Commodity	NH-1		NH-2		NH-8		NH-10		NH-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
1.	Building material	46	39	260	41	170	46	37	15	77	37	181	32	771	210
2.	Fruits & Vegetables	445	84	31	188	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	175	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	68	146	68	51	194	162	42	58	190	179	16	20	578	616
7.	Coal	2	30	54	4	10	9	—	12	78	—	—	—	144	55
9.	Ind. raw material	33	65	139	65	111	50	13	30	84	94	8	26	388	320
10.	Commodities miscellaneous	22	157	121	125	157	106	117	36	125	242	16	21	558	687
Total		694	692	1001	571	902	660	403	227	765	992	292	135	4055	3277

Source: Perspective Planning Wing, DDA

C INDUSTRY

The NCR is endowed with some of the best industrially developed areas of the constituent States. Since the primary sector does not have much scope for absorption of more workers, the Region's industrial development holds the key to expansion of employment opportunities as well as the future urban growth. The growth potentials of different industries, manufacturing resources, present and potential demand for manufactured goods, scope for the development of new auxiliary and ancillary industries and most important of them all, the availability of good infrastructural facilities, are some of the elements which have already geared up the pace of industrialisation in the Region.

Industrial Development – Existing Position

1) Haryana Sub-Region

A major portion of industrial activities in Haryana State is located in the Haryana Sub-region. Out of the total number of registered factories in the Haryana State, 58.97% are located in the districts of the Haryana Sub-region which employ more than 68.68% of the total employment in registered factories of the State (Table 4.16).

Table 4.16 Registered Factories in Haryana Sub-region – 1983

District	No. of registered factories(%)	No. of working factories	No. of workers (%)
1. Gurgaon	210 (7.87)	175	9844(6.17)
2. Faridabad	1197 (44.90)	1146	105435 (66.06)
3. Mohindergarh	106 (3.97)	99	4016 (2.52)
4. Karnal	650 (24.38)	613	16464 (10.32)
5. Sonapat	275 (10.33)	263	13900 (8.71)
6. Rohtak	228 (8.55)	215	9949 (6.22)
Sub-region	2666 (100.0)	2511	159608 (100.0)
Haryana State	4522		232404
Sub-region as % of state	58.97		68.68

Source: Statistical Abstract of Haryana – 1983-84

The distribution of registered units and their employment for the year 1983 amongst the districts of the Sub-region shows that regional concentration is a major characteristic of the industrialisation in the Sub-region. There is an overwhelming concentration of industrial units and employment in Faridabad, Karnal and Sonapat districts. These districts comprised 44.90%, 24.38% and 10.33% of registered factories and 66.06%, 10.32% and 8.71% of employment generated by them respectively.

The percentage share of major groups at the district level in the NCR shows that non-metallic mineral products, wood and wood products, machinery and machine tools, basic metals and alloys and food products industries together formed over 55% of a total of 2511 units, comprising the respective shares of 13.8% 12.54% 11.5%, 9.76% and 8% units. (Table 4.17).

There are about 23 industrial estates in the Haryana Sub-region. Faridabad complex has two industrial estates, one each at Faridabad and Ballabhgarh. In addition to the Regional centres, industrial estates have been provided in other towns also.

Table 4.17 : Distribution of working factories (Industry-wise) – Haryana Sub-Region of NCR-1983

NIC	Gurgaon	Faridabad	Mohindergarh	Karnal	Rohtak	Sonepat	Total Sub-Region	Total State
Total	175	1146	99	613	215	263	2511	4245
Sub-Region	(6.97)	(45.64)	(3.94)	(34.41)	(8.56)	(10.47)	(100.0)	(100.0)
20-21	7	44	7	107	19	17	201	465
	(3.48)	(21.89)	(3.48)	(53.23)	(9.45)	(8.46)	(100.0)	(10.95)
22	1	2	-	6	-	2	11	16
	(9.09)	(18.18)		(54.55)		(18.18)	(100.0)	(0.38)
23	5	53	2	29	9	15	113	231
	(4.42)	(46.90)	(1.77)	(25.66)	(7.96)	(13.27)	(100.0)	(5.21)
24	1	17	3	93	2	3	119	125
	(0.84)	(14.29)	(2.52)	(78.15)	(1.68)	(2.52)	(100.0)	(2.94)
25	-	1	-	-	-	1	2	2
		(50.0)				(50.0)	(100.0)	(0.05)
26	-	23	-	19	1	1	44	46
		(52.27)		(43.18)	(3.37)	(2.27)	(100.0)	(1.08)
27	22	96	21	76	46	54	315	629
	(6.98)	(30.48)	(6.67)	(24.13)	(14.60)	(17.14)	(100.0)	(14.82)
28	-	44	2	10	3	6	65	93
		(67.69)	(3.08)	(15.33)	(4.62)	(9.32)	(100.0)	(2.19)
29	1	6	-	4	-	3	14	14
	(7.14)	(43.86)		(28.57)		(21.43)	(100.0)	(0.33)
30	13	59	1	4	9	22	108	121
	(12.04)	(54.68)	(0.93)	(3.70)	(8.33)	(20.37)	(100.0)	(2.85)
31	4	76	2	17	24	38	161	201
	(2.49)	(47.20)	(1.24)	(10.56)	(14.91)	(23.60)	(100.0)	(4.73)
32	46	112	43	101	25	20	347	547
	(13.26)	(32.29)	(12.39)	(29.11)	(7.20)	(5.75)	(100.0)	(12.89)
33	11	152	9	31	23	19	245	384
	(4.49)	(62.04)	(3.67)	(12.65)	(9.39)	(7.76)	(100.0)	(9.05)
34	23	102	6	33	12	19	195	624
	(11.79)	(52.31)	(3.08)	(16.92)	(6.15)	(9.74)	(100.0)	(14.70)
35	17	189	2	56	16	11	291	374
	(5.84)	(64.95)	(0.69)	(19.24)	(5.50)	(3.78)	(100.0)	(8.81)
36	4	82	-	8	14	12	120	135
	(3.33)	(68.33)		(6.67)	(11.67)	(10.0)	(100.0)	(3.18)
37	7	48	-	5	7	10	77	87
	(9.09)	(62.34)		(6.49)	(9.09)	(12.99)	(100.0)	(2.05)
38	9	17	-	1	2	5	34	74
	(26.47)	(50.0)		(2.94)	(5.88)	(14.71)	(100.0)	(1.74)
40	-	4	-	1	-	-	5	8
		(80.0)		(20.0)			(100.0)	(0.19)
41	2	7	-	-	1	-	10	13
	(20.00)	(70.0)			(10.0)		(100.0)	(0.31)
74	-	1	-	2	-	2	5	6
		(20.0)		(40.0)		(40.0)	(100.0)	(0.14)
92	-	1	-	-	-	-	1	1
		(100)					(100.0)	(0.02)
97	2	10	1	10	2	3	28	54
	(7.14)	(35.71)	(3.57)	(35.71)	(7.14)	(10.71)	(100.0)	(1.27)

Source: Statistical Abstract of Haryana 1983-84.

2) Uttar Pradesh Sub-Region

During the period 1978-81, the number of registered factories in the Uttar Pradesh Sub-region increased from 774 to 932, showing an increase of 20.41%. The growth in registered factories, during 1981-84 was much faster, and showed 44.96% increase bringing the tally to 1351. However, growth rate in the intervening period was not uniform throughout. The increase in employment in the registered factories in the period 1981-84 corresponding to increase in the number of factories, as compared to increase in 1978-81 shows that the factories which were added in the period 1981-84 were less employment intensive.

Table 4.18 Number of Registered Factories and Employment in U.P. Sub-Region During 1978-1984.

Year	Number of Regd., Factories		Employment	
	Number	% increase	Number	% increase
1978	774		70,270	
1979	977	26.23	86,991	23.80
1980	947	(-) 3.07	89,072	2.30
1981	932	(-) 1.58	95,100	6.77
1984	1351	44.96	98,333	3.40

Source: District Statistical Hand books: 1986.

Of the 977 registered factories in the U.P. Sub-region in 1978-79, Gaziabad district alone had 61.11% of them. Of the rest, Meerut district accounted for 28.25% and Bulandshahr district 10.64%. The position more or less remained the same in the following years (Table 4.19).

Table 4.19 District-wise concentration of registered factories in U.P. Sub-Region

District	No. of Registered Factories in			
	1978-79 (%)	1979-80 (%)	1980-81 (%)	1983-84 (%)
Meerut	276 (28.25)	270 (28.51)	284 (30.47)	401 (29.68)
Bulandshahr	104 (10.64)	98 (10.35)	93 (9.98)	138 (10.21)
Ghaziabad	597 (61.11)	599 (61.14)	555 (59.55)	812 (60.11)
Total	977	947	932	1351

Source: District Statistical Hand books : 1986.

Ghaziabad district accounted for 64.28% of total employment in registered factories in this Sub-region in the year 1978-79 followed by Meerut (27.67%) and Bulandshahr (8.05%). In 1983-84 also, Ghaziabad district occupied the first place followed by Meerut and Bulandshahr (Table 4.20).

The emerging employment growth trend in the three districts of the U.P. Sub-Region indicate that there is concentration of registered sector employment in Ghaziabad district. If the trend is allowed to continue, it will promote regional imbalances and growth of Delhi Metropolitan Areas.

Among the various types of industries, Textile products, Wood and Wood products, Leather and Fur products, Rubber, Plastic, Petroleum and Coal products, Chemical and Chemical products, Electric and Electronic equipments are some of the industries that have grown faster in comparison to other industries.

Table 4.20 District-wise Concentration of Employment in Registered Factories

District	Employment (Daily average)			
	1978-79 (%)	1979-80 (%)	1980-81 (%)	1983-84 (%)
Meerut	24,072 (27.67)	24,442 (27.44)	30,601 (32.15)	28,086 (28.56)
Bulandshahr	7,002 (8.05)	6,982 (7.84)	7,026 (7.38)	7,698 (7.83)
Ghaziabad	55,917 (64.28)	57,648 (64.72)	57,553 (60.47)	62,549 (63.61)
Total	86,991	89,072	95,180	98,333

Source: District Statistical Hand books — 1986.

Meerut, Bulandshahr and Ghaziabad districts had one, two and one industrial estates respectively in 1980-81. There was no increase in the number of industrial estates during 1981-82. However, in 1982-83, Ghaziabad district had added one more industrial area taking the number of total industrial estates to five in the Sub-region.

3) Rajasthan Sub-Region

The growth of industries started as early as 1952 when there were only 7 registered factories in the whole district of Alwar. Subsequently, more industries were set up in the district raising the total to 28 in 1961 and 40 in 1971. The development of industries made a further headway and 6 industrial units were added to Alwar town and 12 in the district as a whole in 1971. By 1983, there were in all 279 registered factories in Alwar district employing 8106 persons. There are at present 30 large, 28 medium scale units in the district of which 27 large and 27 medium scale units are in the Sub-region.

The major concentration of large and medium scale industries has been at Alwar followed by Bhiwadi. Out of 27 large-scale industries in the district, 19 are located in Alwar, seven in Bhiwadi and only one in Behror. Similarly, out of 27 medium-scale units, 19 units are located at Alwar and rest of the eight at Bhiwadi.

The distribution of registered factories, in Alwar District of Rajasthan shows that out of 279 registered factories (in 1983), maximum number of industries 57 (20.44%) are covered under manufacture of food items followed by 44 (15.77%) in printing, publishing and allied activities, 38 (13.62%) in Iron and steel industries, and 24 (8.60%) in manufacture of wood and its products. Out of total 8106 persons employed in these factories more than 50% are employed in Iron and steel industries only, followed by 2500 (30.84%) in manufacturing of textiles. (Table 4.21).

Till early Seventies, the old industrial area in Alwar was the only industrial estate in the district covering an area of about 50 hectares. After that, RIICO has developed a very large industrial estate (Matsya Industrial Estate) in about 930 hectares of land. In order to promote the industrial activities in the district, Rajasthan Government has taken steps to industrialise, in addition to Alwar, other parts of the district. It has singled out four growth centres in the Sub-region. They include Bhiwadi, Shahjahanpur and Behror complex and Khairthal.

4) Delhi Union Territory

Industrial progress in Delhi in the last two decades has been phenomenal. The growth of industries in Delhi followed a typical trend, with slow progress upto 1970-71 and rapid one from 1976 onwards.

There was a sharp increase in the number of units from 26,000 in 1970-71 to 62,000 in 1984-85 i.e. an increase of 9.89% per annum. The industrial employment increased from 2.15 lakhs in 1970-71 to 5.58 lakhs in 1984-85 registering a growth rate of 11.37% per annum. The investments in this sector which were of the

Table 4.21: Distribution of Registered Factories (Industries-wise) in Alwar district – 1983.

Sl. No.	N.I.C. Code	Type of Industry	Units (%)	Employment (%)
1.	204.1	Atta Mill	1 (0.36)	15 (0.19)
2.	204.9	Dal Mill	9 (3.23)	70 (0.86)
3.	211	Mfg. of edible oil and fats	47 (16.85)	95 (1.17)
4.	23 & 24	Mnfg. of textiles	10 (3.58)	2500 (30.84)
5.	271	Sawing and planning of wood	24 (8.60)	60 (0.74)
6.	289	Printing, publishing and allied activities	44 (15.77)	160 (1.97)
7.	312	Mnfg. of paints, varnishes and lacquers	2 (0.72)	20 (0.25)
8.	313	Mnfg of drugs & medicines	20 (7.17)	256 (3.16)
9.	321	Mnfg. of glass & glass products	1 (0.36)	—
10.	325	Mnfg. of structural stone goods, stone dressing and stone crushing	16 (5.72)	170 (2.10)
11.	330	Iron and steel Industries	38 (13.62)	4200 (51.81)
12.	36	Mnfg. of electrical machinery, apparatus and appliances	4 (1.43)	200 (2.47)
13.	531	Cement	3 (1.08)	60 (0.74)
14.		Others	60 (21.51)	300 (3.70)
Total			279	8106

Source: District Statistical Hand Book, Alwar – 1984.

tune of Rs. 190 crores in 1970-71 have multiplied more than six times to Rs. 1200 crores in 1984-85. The spurt of activity in this sector has also been reflected in the production figures. The value of the production which was Rs 388 crores in 1970-71 has multiplied more than eight times to reach Rs. 3300 crores in 1984-85. (Table 4.22).

There were in all 2984 registered industries, which constitute the organised sector in Delhi in 1979. The number of factories in 1985 has gone upto 4652, adding more than 1600 units in just six years. The number of daily workers in these factories increased from 1.41 lakhs in 1979 to 1.85 lakhs in 1984-85. (Table 4.23).

4.7 Policies for Industrial Development – 2001

The industrial activities in the past two decades in the NCR has been mainly confined to Delhi and its

Table 4.22: Industrial Progress in Delhi – 1985

Item	70-71	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85
No. of indu. units (in '000)	26	37	40	41	42	45	50	54	57	62
Investment (Rs in crores)	190	550	600	650	700	867	965	1035	1105	1200
Production (Rs in crores)	388	1025	1200	1430	1700	2196	2350	2352	2483	3300
Employment (in 000)	215	300	325	350	375	450	480	507	528	558

Source: Delhi Statistical Hand Books – 1986.

Table 4.23: Registered Factories in Delhi : Group-wise – 1985

Description	Number of Factories								Workers (daily average in '000)							
	79	80	81	82	83	84	85		79	80	81	82	83	84	85	
1. Food Products	114	124	130	142	148	153	160		7	9	9	9	9	9.5	9.7	
2. Textiles & Textiles Products	457	520	545	622	666	709	746		43	46	46	46	48	50	52	
3. Wood Products	46	47	52	56	60	66	67		1	1	1	1	1	1	1.04	
4. Paper Products and Printing	230	223	255	279	290	302	315		11	12	12	12	12	12	12.6	
5. Leather, Rubber & Chemicals	396	429	434	495	534	578	581		12	14	14	14	15	17	17.1	
6. Non-metallic mineral Products	55	57	51	107	114	119	146		4	3	3	3	3	3	3.7	
7. Metal & Engineering Products	763	807	856	970	1032	1097	1128		23	26	26	27	29	31	32.2	
8. Manufacturing of Electrical machinery	308	355	374	451	480	530	545		12	14	14	15	16	18	19.6	
9. Manufacture and other Misc. of Transport Equipment	393	395	487	555	592	629	653		15	16	16	24	25	27	27.5	
10. Generation and Trans. of electricity, water supply and gas.	21	21	18	21	21	21	21		6	5	5	3	3	3	3	
11. Miscellaneous	201	215	200	219	226	241	290		7	7	7	4	5	7	7.3	
Total	2984	3193	3402	3917	4163	4445	4652		141	153	153	158	166	178.5	185.74	

Source: Delhi Statistical Hand Books – 1986.

surrounding areas. The attraction for the entrepreneurs for choosing Delhi as place for their establishments has been mainly the availability of good infrastructure and favourable situation in Delhi for investment. As a result of the spurt in industrial activities, the employment in the industrial sector increased from 17% in 1961 to 30% in 1981. Thus, Delhi which in 1951 and 1961 had administrative character is now very fast becoming an industrial township. The first Master Plan of Delhi recognised the need to put a curb on the industrial activities of Delhi and prohibited certain types in Industries, mainly large scale and obnoxious

industries, from being set up in Delhi. The increase in the industrial employment in the intervening period shows that the curbs prescribed by the Master Plan were not sufficient to check the industrial growth in Delhi.

In the industrial growth of the Region as a whole, the industrial poolicy of Delhi would remain central. In a multi-functional situation, a growth from 17% in 1961 to nearly 30% in 1981 is quite high. With the current aggressive and, commendable entrepreneurship and local administaraations promotionaal support, the share of industrial sector employment could well increase even beyond 30% by the turn of the century. For a city of national importance, the fact that industrial sector is growing the fastest of all the economic sectors, needs serious pondering over, specially if such a growth is almost entirely in the inner city.

As a result of the policies of th Master Plan and encouragement by the adjoining State Governments, with a view of take advantage of the developed infrastructure of Delhi, the industrial activities started taking place in DMA towns and they thereby registered a phenomenal growth rates in the last two decades.

It has been felt that with the pace of industrial development in these towns, adequate level of residential, commercial, telecommunicationn and other facilities have not been developed simultaneously, due to which higher and middle level executives employed in industries prefer to live in Delhi and the labour class have found shelters around Delhi, giving rise to large scale slums. The further growth of industrial activities in these towns at such a pace, with no check on the establishment of obnoxious and pollutant large and heavy industries, may prove to be deterrent for the healthy development of Delhi.

Locational aspects of industry play a significant role as the industrial locations directly influence the locational pattern of job opportunities in commerce, transportation, construction and other services. The industrial policy of the Government of India recognises the need to prevent further concentration of industries around metropolitan cities. In the NCR, some of the towns selected for induced developmen, have already developed some industrial base and, with the shifting of industrial activities in the areas outside Delhi Metropolitan Area, the activities at these places are likely to gain momentum.

A three tier system of policy is proposed to be adopted for the location of industries in the Region, so as to ensure harmonised development in the Region.

i) Strict Control within the Union Territory of Delhi

While continuing the present policy of not promoting location of medium and large scale industries within Delhi, location of even small scale industries is to be restricted to those which employ 20 or less persons and are required either for providing or servicing the consumer needs of Delhi's Population. The NCR Planning Board should be represented in the statutory licencing committee for new industries in the Delhi Union Territory, so that strict compliance of these policies is ensured.

ii) Control outside Delhi but within the DMA

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

iii) Incentives for industries outside the DMA but within the NCR.

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

4.8 Fiscal Measures

In the peculiar jurisdictional set-up of the NCR where a limited number of districts from the neighbouring States form parts of the Region, the success of dispersal of economic activities in the self-

contained proposed regional towns and in the other parts of the Region, besides the non-fiscal incentives proposed in the Plan, to a great extent will depend upon viable fiscal policies within the National Capital Region.

Among the various fiscal measures, Sales tax is one of the most important taxes. The Sales tax is governed by two sets of tax laws; on the one hand there is local Sales tax law in each State/Union Territory which is applicable to local dealings and, on the other, there is Central Sales Tax governed by provisions of Central Act, 1956. While in Rajasthan and Uttar Pradesh, this tax follows predominantly the first point structure, Delhi and Haryana, by and large, rely on last point levy, although in Haryana, a substantial amount of sales tax yield comes from first point tax also. Like the points of levy rates of sales tax too vary from one commodity to another. Sales tax rates in Delhi are relatively lower for most commodities. In addition, Delhi has no surcharge or additional sales tax whereas Uttar Pradesh levies an additional Sales tax of 5% and Haryana and Rajasthan levy a surcharge at the rate of 2% and 10% respectively. The effective rate of tax in all the neighbouring States of Delhi is, therefore, greater than that prevailing in Delhi. Apart from those commodities which are taxed, there are several which enjoy exemption in some States, while they are taxed in others. For instance, all cereals and pulses are taxed in Haryana, Rajasthan and Uttar Pradesh, whereas these are exempted in Delhi. Bread is exempted from tax in Delhi and Haryana, while Rajasthan and Uttar Pradesh tax this item at the rate of 2% and 4% respectively.

In the case of Central Sales Tax, variations exist on account of the provisions under Section 8(5) of the Central Sales Tax Act, which permits variations in rates to suit the specific requirements of a particular State. To illustrate, whereas the rate of tax on the re-export of goods from Delhi is 2%, in all the States whose areas fall within the NCR, this rate is 4%.

Taxation of road transport is another important issue which might be a contributing factor in sub-optimal decisions regarding location of economic activities. In fact, variation in the annual combined tax burden of both motor vehicle tax and the passengers and the goods tax among different States of the NCR might cause diversion of vehicles for registration in low-tax State. Consequently the cost of transporting goods could be much more in low-tax area.

There are wide variations also in the matter of tax treatment of raw materials and inputs used in industrial production. Whereas Delhi and Haryana allow tax-free purchases by manufacturers, Uttar Pradesh provides for exemption on some raw materials and a concessional rate of 4% on certain specific raw materials. Rajasthan exempts purchase of raw materials for a few select industries but in general provides for a concessional rate of 1% for the purchase of raw materials by manufacturers.

Incentives in Sales tax are given in all the States of the NCR to attract new industries. These concessions are in the form of (a) complete and unconditional exemption from payment of Sales tax for a limited period of time, (b) conditional exemption depending upon the type of the industry, and (c) deferment of sales tax payment on finished goods as an interest free loan for a limited number of years upto a specified limit related to the size of capital or assets of the manufacturer. These concessions have wide variation in the States of the NCR.

The electricity duty is also being levied at varying rates in the constituent parts of the NCR. These rates are lowest in Delhi. Tax rates in Haryana and Uttar Pradesh are quite high inspite of some concessions and apparently low effective rates.

Among the local taxes, Octroi is the most important source of local finance. The rates of this tax vary widely from one State to another. Besides the variations in the rates, there is a general feeling that this tax has several demerits, such as hinderance to smooth traffic flow, corruption in its administration, high cost of collection, regressivity of incidence, collection of large revenue from inputs and producer's goods leading to cascading and perfunctory assessment of the tax. Looking at these demerits, a general consensus and policy of the Government is also to do away with such tax.

Compared to other NCR constituents, property tax rates, are high in the Union Territory of Delhi. Notwithstanding a gradation of rates according to residential, commercial or Industrial use, the concentration of property ownership in Delhi has increased over the years. In order to achieve a preventive effect on the diversification of ownership of assets, the comparison to the neighbouring States, levy of an additional tax on the preferences of the persons owning property in Delhi, can be considered as a disincentive measure.

The approved practice of stock transfers and consignment despatches to Delhi from places outside Delhi, as most of the manufacturers and big traders have opened their Sales offices and godowns, has also been considered as one of the most important factors which has resulted in concentration of wholesale distributive trades in Delhi. This practice not only deprives the States from where the goods originate of the tax revenue which would have otherwise accrued to them, but has also created alarming locational problems of trade and commerce in Delhi.

The variety of conflicting taxation policies and the schemes of incentives/dis-incentives, some of them, mentioned above, in the neighbouring States and the large differential in the local tax structure, till now, had been favouring Delhi and it has been identified as one of the most important factor for the concentration of economic activities in Delhi.

For an integrated development of the NCR, it is necessary to look at the NCR as an economically unified area. That is, inspite of its constituent parts belonging to different States, for a proper development of the Region, the fiscal policies within the Region should be so harmonised that the Region comes to have the character of a unified whole and the growth of the different constituents of the Region takes place on the basis of their comparative advantages.

5

TRANSPORT

The NCR Plan has been conceived to achieve an optimum growth of the Region through a balanced development. It would be multisectoral in its nature and scope, ensuring inter and intra-sectoral integration. Transport network and facilities have been identified as one of the most important factors for promoting the social and economic activities from Delhi to other parts of the Region and an accelerated development of priority towns by providing accessibility and mobility to enable efficient movement of passengers, goods and services within the Region. As transportation network and facilities are the vital prerequisites for development of any area, the basic objective of the transport sector plan in the NCR is to provide an efficient linkage among the settlements having development potential in the Region, and link them with Delhi.

The approach adopted to evolve a viable settlement system in the 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 intensified scale which would form first order settlements irrespective of other tier of settlements which would be identified later and selection of such centres based on their ability to attract and accommodate greater volume of activities and population.

Preparation of the Plan for the Transport sector is based on adequate and relevant data/information. For this purpose, the National Capital Region Planning Board for traffic and transportation studies conducted through a professional Consultant. The following surveys were conducted:

- 1) Volume count by vehicle type on all important links (NH and SH) in the NCR.
- 2) Roadside interviews on sample basis at about 60 cordon points representing major nodes (urban) in the NCR.
- 3) Road inventory survey.
- 4) Origin-Destination characteristics of passengers and goods by bus and rail at major rail road terminals.
- 5) Rail network inventory and, speed and delay surveys etc.

5.1 Existing Transport Network

Transport development in the NCR has been essentially corridor oriented. There are nine corridors which form the vital network system of transport in 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 activities and population attracting corridors are utilised to gain the prime objective of the NCR of controlling the growth of Delhi and encouraging or promoting regional towns by diversion of such developmental activities towards these towns. The 9 major transport corridors of movement with Delhi are:

- 1) Delhi-Ghaziabad-Meerut
- 2) Delhi-Ghaziabad-Hapur-Garmukhteshwar
- 3) Delhi-Ghaziabad-Sikanderabad-Bulandshahr-Khurja

- 4) Delhi-Faridabad-Palwal-Hodal
- 5) Delhi-Gurgaon-Bawal-Behror
- 6) Delhi-Gurgaon-Sohana-Nuh-Alwar
- 7) Delhi-Bahadurgarh-Rohtak-Mahau
- 8) Delhi-Sonepat-Panipat
- 9) Delhi-Loni-Baghat-Baraut

i) Road Network

The road network in the NCR shows a convergence towards Delhi, with the five National Highways NH-1, NH-2, NH-8, NH-10 and NH-24 terminating at Delhi. The National Highways are four lane divided upto Sonapat on NH-1, Ghaziabad on NH-24, Ballabhgarh on NH-2, Gurgaon on NH-8 and Bahadurgarh on NH-10 and, the rest of the portions are two laned. It is also observed that flows are mostly free of obstructions beyond these stretches, where they pass through built-up or semi built-up areas. The major constraints of traffic flow in stretches beyond the built-up areas are mainly the level crossings and narrow stretches such as bridges and culverts.

The twelve major State Highways also serve to strengthen these transport corridors in the Region. Most of the State Highways are single or intermediate laned except for very busy stretches like Ghaziabad-Meerut and Ghaziabad-Bulandshahr (two to four lanes).

ii) Rail Network

The rail network in the NCR consists of a mix of gauges (broad-metre) and is highlighted by its being the converging point of 5 railway lines. The NCR rail network covers three zonal railways (Northern, Western and Central) and 5 divisions.

The rail network has two specially identified lines known as the Goods Avoiding Line (GAL) and the Delhi Avoiding Line (DAL). The goods avoiding line provides a direct entry from Ghaziabad into New Delhi, bypassing the congested Delhi Railway Station complex. The Delhi Avoiding Line provides a direct passage from the major yards-Tughlakabad and Ghaziabad directly into the Delhi-Ambala-Kalka section and the sections through Lajpatnagar, Patel Nagar, Dayabasti, Azadpur link.

It is observed that the line capacity of the railway lines in and around Delhi is heavily strained. This area around Delhi, within the Delhi division distinguishes itself from the rest and is commonly known as the "Delhi Area". 75% of the goods traffic and 65% of the mail and express passenger trains are handled in this intensively worked Delhi Area, i.e., 65 goods trains and about 230 passenger trains. Six bulk commodities, viz., coal, foodgrains, petroleum products, cement, fruits and vegetables and iron and steel are handled at the following terminals:

Tughlakabad, Shakurbasti, Sabzimandi and Patel Nagar	Coal
Guldhar, Tughlakabad, Okhla	Iron and Steel
Shakurbasti	Petroleum, Oil and Lubricants
Sabzimandi, Delhi Cantt.	Food grains
Shakurbasti, Okhla, Safdarjang	Cement
New Azadpur	Fruits and Vegetables

In addition to the above, an internal container depot (ICD) is functioning at Pragati Maidan which is proposed temporarily to be shifted to Tughlakabad according to the Ministry of Railways. A new terminal at Gheora (near Nangloi) will soon be operated as a LPG complex, shifting some load from the Shakurbasti terminal.

Due to convergence of major regional trains at Delhi and lack of loading and un-loading facilities of DMA towns, Delhi has become a major distribution centre for the NCR and other parts of North India.

While train loads of freight traffic are received into the Delhi area, no back loading is being done in block loads. Coal movement to the three power stations in Delhi account for 7 to 8 train loads a day.

5.2 Traffic Flow Characteristics in the NCR – 1987

i) By Road

a) Passenger Movement

The total daily movement of bus passengers and other vehicle passengers in the NCR in 1987 is about 5.4 lakhs and 2.25 lakhs respectively. Delhi again stands out as the important centre (Table 5.1)

	Bus Passengers	Vehicle Passengers
% attraction to Delhi	32	28
% generation from Delhi	32	26

Table 5.1 Attraction and Generation of Passenger Traffic Volume and Per Capita Trip Generation Rate in NCR Urban Areas

Towns	Vehicle Passengers (Daily)				Bus Passengers (Daily)		
	Total Traffic		Estimated population (1987) in lakhs	Per capita trip generation rate (inter urban)	Total Traffic		Per capita trip generation rate (inter urban)
	Attracted	Generated			Attracted	Generated	
1. DUA	64510	58637	83.97	0.007	176185	173722	0.021
DMA TOWNS							
2. Ghaziabad	18398	18697	5.40	0.035	36210	32298	0.060
3. NOIDA	10736	9299	2.18	0.043	32976	31026	0.142
4. Faridabad	12374	16563	5.32	0.031	14447	24675	0.046
5. Gurgaon	5747	8868	2.80	0.032	20128	18603	0.066
6. Bahadurgarh	1591	1863	0.86	0.022	3948	4123	0.048
MAJOR URBAN NODES							
7. Meerut	18112	19358	7.66	0.025	37492	34242	0.045
8. Hapur	7467	6125	1.49	0.041	8430	11436	0.077
9. Bulandshahr	12650	13455	2.49	0.054	21150	23522	0.094
10. Palwal	1022	1215	0.76	0.016	3144	1674	0.022
11. Panipat	3317	1573	2.47	0.006	3953	7097	0.029
12. Rohtak	14204	17232	2.67	0.065	23842	20845	0.078
13. Rewari	3817	5025	1.26	0.040	5789	6454	0.051
14. Alwar	2895	1937	2.52	0.008	6999	7392	0.029
15. Sonapat	1182	824	1.58	0.005	3737	4194	0.027
16. Modinagar	8238	2301	1.42	0.016	2037	909	0.006
17. Rest of NCR (primarily rural)	38700	43013	117.10	0.004	41198	39623	0.003

The share of the inter-regional traffic is, however, significantly different from that of goods traffic. For bus passengers and vehicle passengers, the intra-regional component is 64% and 87% respectively, corresponding inter-regional components being 35% and 13%.

The per capita inter-regional and intra-regional trip rate for bus passengers varies from 0.021 for Delhi to 0.142 for NOIDA. In the case of vehicle passengers, the rate varies from 0.007 for Delhi to 0.65 for Rohtak. In the case of rail, the variation is from 0.011 to 0.085. These variations are observed to be a function of both size and characteristics of an urban zone. The general trend observed is that increase in population size and diversification of economic base results in decline in the per capita trip rate. (Table 5.1).

b) Goods Movement

The total daily movement of goods in the NCR is about 1.92 lakh tonnes. The attraction and generation to Delhi is 31% and 22% respectively. In goods movement, interactions with outside NCR are found to be very high. Only about 32% of the total tonnage moved is found to be intra-regional, 63% inter-regional, the through component accounting for 4%. The goods movement shows Ghaziabad as the only other significant centre of attraction within the NCR. Adjoining States (U.P., Haryana and Punjab) account for significant part of goods traffic generation. As regards commodity movements by road, building material, food grain, vegetables and other perishables and industrial inputs for inward movement, whereas manufactured household products, building material, food grains and industrial inputs for outward movement are important.

ii) By Rail

a) Passenger Movement

The total flow of passengers from 14 selected stations (amongst DMA and priority towns) in the NCR is about 1.03 lakhs daily. This does not include about 1.07 lakh trips of inter-regional nature conducted from Delhi. Almost 50,000 of the trips from these selected stations are made to Delhi. The important rail corridor daily movements are as follows.

Delhi-Faridabad	6900
Faridabad-Palwal	5800
Delhi-Sonepat	8400
Delhi-Ghaziabad	26600
Ghaziabad-Modinagar	5000
Modinagar-Meerut	4000

b) Goods Movement

The total inward goods movement in the NCR by rail is estimated at about 22,700 tonnes daily. Delhi is the major origin and destinating area for both inward and outward movement, its share being about 60%. Ghaziabad, Meerut, Faridabad and Hapur are the other important centres. (Table 5.2).

The centres outside the Region are the major despatching centres. Eastern Railway in particular is of importance, sending more than 40% of all goods received in the NCR. Amongst the receiving centres, Western Railways attract about 40% of all traffic sent from the NCR.

iii) Conclusions

The above characteristics show that the Road system plays a much important role both in goods and passenger movement. Rail accounts only for 15% of goods traffic (inward) and 38% of the passenger traffic (generation) by public transport. The rail flows are important only in certain corridors. Except for Ghaziabad, there is no other significant centre for attraction in terms of goods traffic.

In terms of passenger traffic, the DMA towns account for a large proportion of movement with Delhi (about 60%) and only other significant linkages are with Meerut. The proportion of bypassable traffic varies from 40-80% passing through cordons of different Nodes.

Table 5.2 Indices of goods traffic generation and attraction – Selected urban centres

Town	Total Traffic (Tonnage)		Index		Index of 1987 Population	Index of Industrial* Employment
	Attracted	Generated	Attracted	Generated		
Ghaziabad	25995	23415	100.00	100.00	100.00 (5.44 lakhs)	100.00 (55510)
NOIDA	4605	2165	18.00	9.25	40.00	NA
Faridabad	4738	9676	18.5	41.50	98.00	190.00
Gurgaon	2253	2845	8.50	12.00	52.00	18.00
Bahadurgarh	1252	1721	5.00	7.50	16.00	8.00
Meerut	5705	2210	22.00	9.50	140.00	15.00
Hapur	3281	2489	12.70	10.70	28.00	3.00
Bulandshahr	1710	1705	6.60	7.30	46.00	5.00
Palwal	691	824	2.70	3.50	14.00	15.00
Panipat	5724	880	22.00	3.75	46.00	30.00
Rohtak	4004	2169	15.50	9.25	50.00	4.50
Rewari	648	829	2.50	3.50	24.00	7.50
Alwar	4438	1681	17.00	7.20	47.00	NA
Sonepat	1553	1054	6.00	4.50	29.00	25.00

- *1. Coverage of industrial employment is uniform in all urban areas, particularly in terms of employment in small industries.
 2. In view of varying growth rate of industrial employment between 1981 and 1987 among different urban areas, (e.g., higher growth rate in Ghaziabad, Hapur, Panipat and Bahadurgarh during the period), correlation between 1981 index of industrial employment and that of traffic (1987) is not always appropriate.

5.3 Projection of Flows – 2001

The projection of traffic volumes, both goods and passengers is to be necessarily integrated with the likely population size and economic base of all the internal zones within the NCR. The scenario which has been adopted for this purpose is the one which is implicit in the Interim Development Plan approved by the Board.

The objectives of the Development scenario are:

- i) Delhi to be contained in population size.
- ii) Ghaziabad and Faridabad and other DMA towns to be contained in terms of locations of large and medium industries allowing the natural growth in their population. These cities will have a balanced population-employment ratio.
- iii) Panipat, Sonepat, Hapur and Alwar to grow as important industrial centres.
- iv) Meerut, Rohtak, Bulandshahr to grow as urban centres with higher growth of trade, services and industry.

(i) Passenger Trip Projections

The important assumption underlying the forecast of future passenger traffic are:

- Trip rate by each mode is a function of the size of the population of an urban zone, its economic base and also locational factors particularly the relation between the resident workers and jobs. Other factors, though important in some cases, have not been explicitly taken into account.
- Degree of self containment as currently observed in different urban zones and as contemplated in the future development scenario provides the most important determinant of the future trip generation rate for inter-urban passenger traffic.
- The trip rate for railway is both a function of the variable noted above and also the availability of the facility itself. This explains a trip rate by railway as high as 0.067 and 0.085 for Ghaziabad and Palwal respectively compared to only about 0.011 in other centres like Bulandshahr.

Given the above three underlying assumptions, the projection of per capita trip rate and projected volume of trip generations have been arrived at in the following manner:

- Trip generation by vehicular passenger is considered to a large extent independent of movement by public transport (railways and bus).
Per capita trip generation rate (inter-urban or rural-urban) for vehicle passenger is assumed to range between 0.01 (Delhi) to 0.06 (Gurgaon).
- Trip rate by public transport, the range is assumed to vary between 0.034 (Delhi) and 0.121 (Ghaziabad). Delhi represents the extreme case of high degree of self containment in terms of inter-urban movement of regular occurrence.
- Given the above method of arriving at per capita trip rate separately for public transport and passenger vehicles, the total volume of trip generation has been projected by multiplying the per capita trip rate to total projected population (Table 5.3).

Table 5.3 Existing and Projected Passenger Trip Generation Rate (Inter Urban/Intra-Regional) and Projected Volume of Trip Generation

Town/Area	Total Traffic Generation								
	Existing Trip Rate			Projected Trip Rate			Projected		
	Vehicle Passen- gers	Bus Passen- gers	Railway Passen- gers	Pulic Trans- port	Vehicle Passen- gers	Bus Passen- gers	Total Public Trans- port	Vehicle Passen- gers	Bus Passen- gers
1. DUA	0.007	0.021	0.013	0.034	0.010	0.031	0.041	112000	347450
2. Ghaziabad	0.035	0.060	0.061	0.121	0.044	0.082	0.122	40000	73357
3. NOIDA	0.043	0.142	NA	—	0.050	0.150	NA	27500	82716
4. Faridabad	0.031	0.046	0.012	0.058	0.040	0.068	0.075	40000	67692
5. Gurgaon	0.032	0.066	NA	—	0.060	0.145	NA	42000	101151
6. Bahadurgrh	0.022	0.048	0.048	0.096	0.060	0.118	0.141	12000	23666
7. Meerut	0.025	0.045	0.012	0.057	0.050	0.099	0.106	75000	148137
8. Hapur	0.041	0.077	0.023	0.100	0.050	0.095	0.101	30000	56780
9. Bulandshahr	0.054	0.094	0.011	0.105	0.023	0.148	0.151	22500	147764
10. Palwal	0.016	0.022	0.085	0.107	0.030	0.047	0.071	90000	14188
11. Panipat	0.006	0.029	0.023	0.052	0.037	0.128	0.139	22500	77042
12. Rohtak	0.065	0.078	0.019	0.097	0.040	0.081	0.091	24000	48679
13. Rewari	0.040	0.051	0.050	0.101	0.060	0.095	0.118	18000	28439
14. Alwar	0.008	0.029	0.012	0.041	0.050	0.151	0.156	32500	98165

Vehicle Passenger

The important change which is predicted to take place is the gain in movement to and from the DMA towns, the exception being NOIDA which continues to have a limited interaction (with Delhi). Among the priority towns, interaction with Meerut, Panipat and Alwar gain significantly so also the rest of the NCR in U.P. with Hapur as centre. The other important change in the redistribution of flows is the reduced importance of Delhi flows. The important flows in the future (carrying more than 5000 passengers) are:

- i) Between Delhi and DMA Towns, rest of NCR, Alwar and rest of Haryana.
- ii) Rest of the NCR with Ghaziabad, Gurgaon, Panipat, Alwar, rest of U.P., rest of Haryana.
- iii) Meerut with Modinagar, rest of Uttar Pradesh.
- iv) Ghaziabad and Modinagar.
- v) Rohtak and Panipat.
- vi) Faridabad with NOIDA and rest of the NCR.
- vii) Rewari with rest of Haryana, rest of NCR.

Passengers by Public Transport

Currently, the public transport passenger traffic originating from Delhi or terminating at Delhi shows that about one-third of the total trips made in or through the NCR has one end of their trip at Delhi. The forecasted share of this traffic is estimated at about 18%. However, the absolute number of trips generated would increase by about 1.75 lakhs.

The regional share (% of total) of public transport is assumed to remain mostly the same as in the base year. Major investments follow similar pattern as that of vehicle passenger but the proportion of larger distance trips is more.

(ii) Goods Traffic Projections

In view of the fact that goods traffic generation is explained more by economic activity base than by population size, the conceptual model uses the four following contributory components of growth – (a) employment in large and basic industry (LI), (b) employment in small scale industry (SI), (c) index of volume of whole-scale trade (WT) and (d) index of volume of retail trade (RT).

While it is extremely difficult to establish the relative weightage of these components in explaining the growth of goods traffic which will vary with the exact nature of industry, wholesale trade, location of markets etc., ratios of relative weight used on an average for projecting the future goods traffic are 3.0 (LI); 1.0 (SI); 1.5 (WT); 1.0 (RT). This ratio implies that one unit of increase in employment in large industry will have three times more effect of growth of traffic compared to small industry. Projections have been made for all the individual towns for large and small industry separately. Retail trade has been projected to grow at the same rate as population (Table 5.4).

Commodity Flows

In this case, unlike passenger traffic where the NCR contributes a large share of the total traffic, the share of internal-internal movement of commodity to total movement of the same is much smaller; the future situation also does not show any marked change in this characteristic. As seen earlier, the share of Delhi which is about 25% of the existing traffic gets reduced to about 15%. In absolute terms, there would be an increase of 62,000 tonnes in generated traffic and a like amount in attracted traffic.

It is also observed that the flow pattern of the priority towns with each other and the DMA towns show an increase as compared to existing situation.

5.4 Strategy for Development

The Regional transport strategy for the NCR should promote and support the economic development

Table 5.4: Projected Goods Traffic (Road)

Towns	Existing		Projected		Average Annual
	Generation	Attraction	Generation	Attraction	Simple growth rate (Generation)
1. DUA	40577	59980	82980	124458	7.5
2. Ghaziabad	23415	25995	59357	72136	11.0
3. NOIDA	2165	4606	10283	23230	26.8
4. Faridabad	9676	4738	32898	16968	17.1
5. Gurgaon	2845	2253	19459	15320	41.7
6. Bahadurgarh	1721	1252	7465	5713	23.8
7. Meerut	2210	5705	11558	28810	30.2
8. Hapur/Rest of NCR	11471	3360	45061	25288	20.9
9. Bulandshahr	1705	1710	9070	14405	30.9
10. Palwal	824	691	5042	4215	26.6
11. Panipat	880	5724	14673	22906	112.0
12. Rohtak	2169	4004	9154	17017	23.0
13. Rewari	829	648	5020	3467	36.1
14. Alwar	1681	4438	10590	27072	37.9
15. Sonapat	7038	4426	28997	16917	22.3
16. Modinagar	1998	1834	8032	11397	21.6
Rest of NCR	7346	4258	25627	19769	17.8
Total	118550	135622	385266	449088	16.1

of the Region and relieve the Capital of traffic congestion. As such the strategy envisages:

- i) interconnection of regional centres among each other;
- ii) connecting them with the Capital by efficient and effective network system for faster movement;
- iii) integrating road and rail network system in Delhi, DMA and rest of the Region.
- iv) providing shortest and faster network to inter connect the maximum traffic and attraction and generating urban nodes; and
- v) decongesting Delhi roads and terminals by diverting the bypassable traffic.

5.5 Proposals for the Road Network

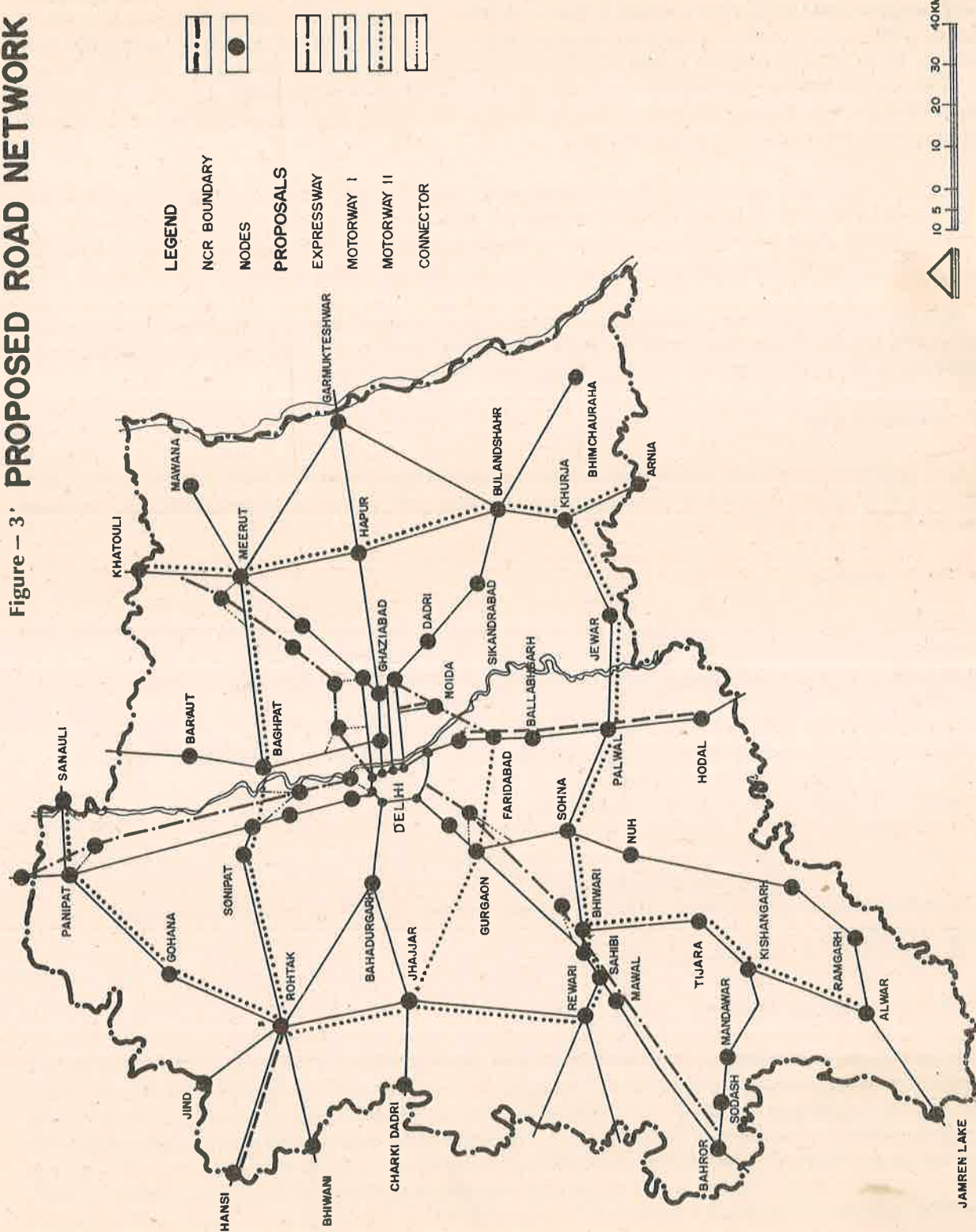
According to the projected flows based on interim findings by the year 2001, the existing network is going to be totally ineffective to carry the volume of traffic likely to move over them in NCR. As such, a road network in the Region is proposed in the following hierarchy: (Figure 3)

- i) Expressway
- ii) M-I Motorway
- iii) M-II Motorway
- iv) Sub-regional road network

i) Expressway

Traffic flow on important roads will be operating at considerable high volume for three links namely,

Figure – 3' PROPOSED ROAD NETWORK



Delhi—Ghaziabad, Delhi—Gurgaon and Sonapat—Panipat (volume/capacity ratio will exceed 1.5). As such these links need improvements by way of raising them to Expressway standard. The total stretch between Delhi—(Ghaziabad—Meerut)—NCR boundry has got 99 road junctions, stretch between Delhi—(Panipat)—NCR boundary (84 km) and Delhi—Rewari—Behror (125 km) have 53 and 67 road junctions respectively. As such it will be uneconomical to improve these existing links to expressway standards of dual carriage way with six lanes of sufficient lane width, all intersections grade separated at intervals of 3 to 5 km apart.

(a) In view of this, the existing links between Delhi—Ghaziabad—Meerut, Delhi—Gurgaon—Behror and Delhi—Panipat have been proposed to have express way on entirely a new alignment. By providing these expressways, the following will be achieved:

- i) It will reduce the traffic flow from about 90,000 PCU to 46,000 PCU on Delhi—Ghaziabad link.
- ii) The PCU on Delhi—Gurgaon section would be reduced from 78,000 to 26,000 and
- iii) Similarly the major links of Delhi—Sonapat will carry less traffic and as such the link may be used for local traffic.

(b) Ghaziabad, NOIDA and Faridabad come next to Delhi in attracting and generating maximum goods traffic and for the bypassable traffic to Delhi from these three towns passing through Delhi, a new expressway has been proposed linking Faridabad—NOIDA and Ghaziabad.

ii) M-I Motorway

Development of stretches between Delhi — Hodal and Rohtak-Hansi to the level of M-I standard which is to be 100 M right of way of dual carriageway with six lanes and bypasses to be provided wherever these standards are not achieved.

iii) M-II Motorway

Development of inner and outer grid systems of roads of the order of M-II Motorways with certain common stretches which would be of two lane carriageway initially with acquisition of right of way of 60 metres and to four lane carriageway finally by 2001 AD. The following are the proposed alignments in M-II standard:

i) Uttar Pradesh

Outer Grid—(i) From NCR Border—Khurja—Bulandshahr—Hapur—Meerut—Khatoli(NCR Border).

(ii) From Yamuna Bridge(Palwal) to Jewar—to Khurja.

Inner Grid— Meerut—Baghpat—Yamuna Bridge.

ii) Haryana:

Outer Grid— Sanauli—Panipat—Gohana—Jhajjar—Rewari—Kot Kasim—Dharuhera—Bhiwadi—Sohana—Palwal—Yamuna Bridge (Palwal)

Inner Grid— Faridabad—Gurgaon—Thajjar—Rohtak—Sonipat—Yammuna Bridge near Baghpat.

iii) Rajasthan:

Bhiwadi—Tijara—Kishangarh—Alwar.

iv) Sub-regional road network

Smaller towns of the National Capital Region have been stagnating mainly because of their location in the shadow of bigger urban centres. However, their economy could be revitalised by providing suitable infrastructure facilities so that they act as link between the rural areas and the bigger urban centres besides acting as service centres for the rural population. Transport network would be able to provide the initial momentum for their regeneration. Efforts would be to inter-connect the same order centres directly and the lower order centres of 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.

5.6 Proposals for Development of Railway

As discussed in the earlier sections on the projected total passenger traffic, there is a need to consider the system improvements in the Railways. A two step procedure termed as short-term and long-term improvements have been proposed: (Figure 4)

a) Short term improvements:

To cater to additional passenger traffic in existing network, the Railways would be required to increase the composition of passenger trains from 12/13 coaches at present. It is thus expected to increase substantially the carrying capacity of existing passenger trains without increasing their number.

In view of very large projected increase in passenger traffic in some of the corridors which is presently catered by the railway system, an attempt has been made to what extent the railway system can relieve the pressure on road system. The alternative of increasing the number of coaches on a train as well as increasing the number of trains on the various corridors have been examined in detail. Results of the same are presented in Table 5.5.

In generating the above estimates the following assumptions have been made:

- i) For Broad gauge, maximum length of train to be of 22 coaches with standard occupancy per coach for suburban traffic as 100.
- ii) For metre gauge section, maximum length of train to be of 20 coaches and passenger occupancy per coach as 80.

b) Long term improvements:

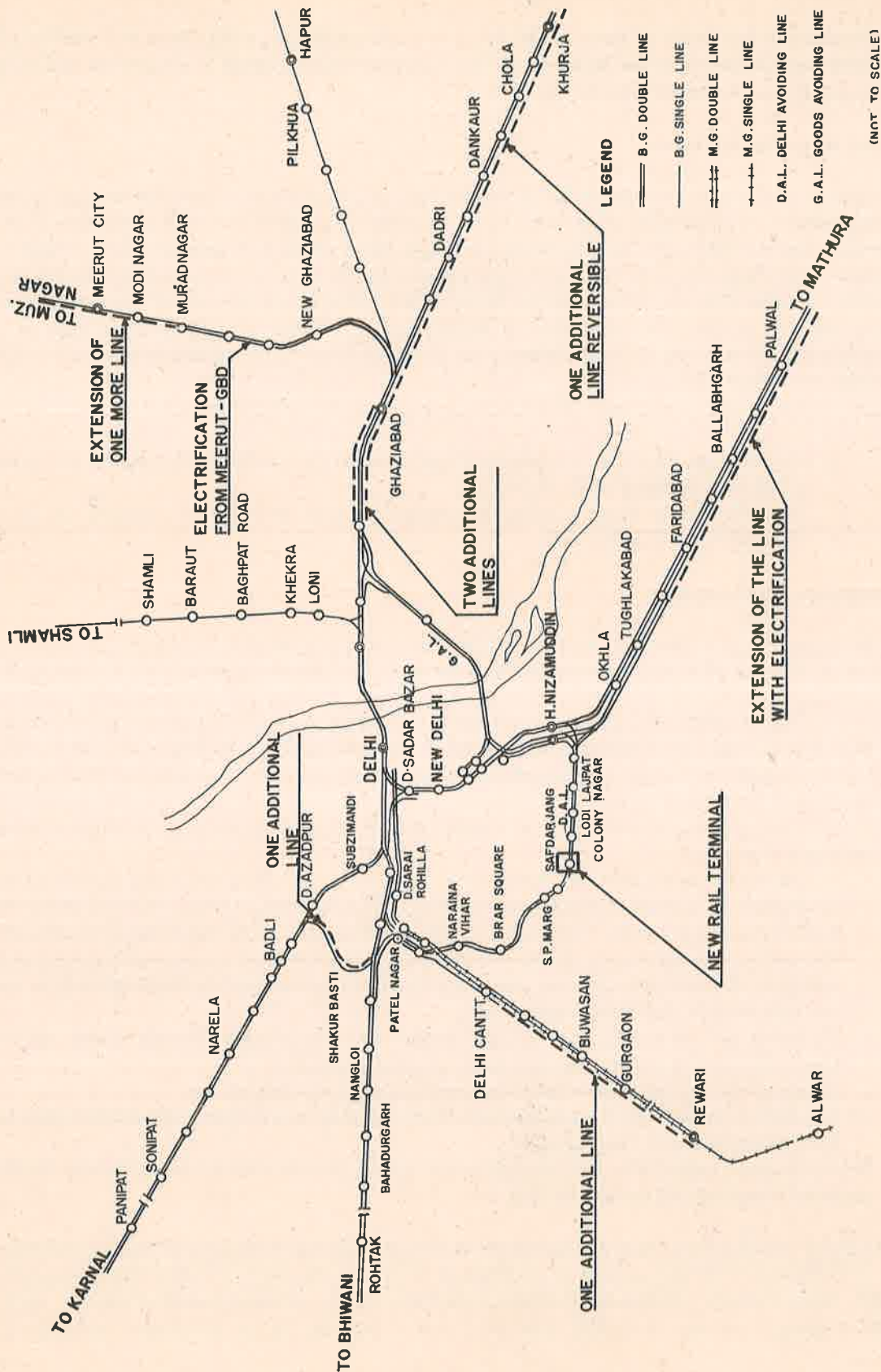
I. In the long term, it is observed that the existing network has a number of bottlenecks which can be removed to create quite a large capacity in the rail network. The most important of them are noted below:

- i) Create additional capacity by re-routing certain through trains by avoiding lines like Frontier Mail. For example this train could be routed via Delhi Avoiding Line (DAL) and sent to Punjab via Delhi—Ambala line instead of Ghaziabad—Saharanpur as at present. It would need the expansion of facilities at Safdarjung Station.
- ii) Rationalisation of movement of freight traffic to Punjab/Haryana to avoid their concentration via Delhi at present.
- iii) Eliminate existing bottlenecks on short stretches by providing following additional facilities:
 - On Palwal—Faridabad—Delhi section existing 3 lines will be converted to 4 electrified lines.
 - It will be necessary to lay a dedicated single M-G line from Delhi (Patel Nagar) to Rewari/Alwar. This section will not be electrified and trains will run with diesel traction on Pull-Push system. In addition, a full fledged suburban terminal with all facilities will have to be developed at a suitable site indicated in the Delhi Master Plan.
 - Providing an additional lines on the single line Muradnagar—Meerut Cantt. section and electrifying the entire section with EMU terminal at Meerut.
 - Quadrupling of Ghaziabad—Sahibabad section, with electrification.
 - Provision of an additional third line (reversible) and of fly over at Khurja will enable traffic to move from Bulandshahr to Ghaziabad.

The increase in capacity in the rail system by way of the short term and long term measures as outlined above are given in table 5.5.

II. In Interim Development Plan, a proposal to develop a Regional Rail bypass to diverge out bypassable traffic of Delhi that otherwise would move through Delhi was included. This line was proposed to pass through Meerut—Hapur—Bulandshahr—Palwal—Sohana—Rewari—Jhajjar—Rohtak—Panipat, with lines already existing in several stretches, new lines were required to be developed between Khurja—

Figure - 4: PROPOSALS FOR RAIL NETWORK



Palwal—Rohtak. However, the survey and studies conducted by the consultants in 1987 reveal that such a bypass will not be justified in economic terms by 2001. But from an overall planning point of view and also a longer perspective beyond 2001, it is considered necessary to have the above rail bypass to facilitate intra urban commuter traffic in Delhi.

5.7 Proposal for Airways

With identification of Regional Centres required to be developed on a priority basis by inducing their growth through economic activities, it is necessary to probe into the possibilities of extending air services to these towns through short distance carriers.

5.8 Unified Metropolitan Transport Authority

At present there is lack of coordination and intergration among various Transport Authorities operating different modes of transport systems in the Region. Due to this, the user has to spend avoidable long time, more energy and money in performing the journeys. As such it is suggested that an Unified Metropolitan Transport Authority be constituted for the entire Region, which may look into the interaction of various modes, help in rationalising the inter-city and intra-city fare structures between railway and the road transport and may also help in facilitating the inter-change from rail to road and road to rail as well as regional trains to intra-urban railway in Delhi.

The Task Force set up by the Ministry of Urban Development to make recommendations regarding the constitution of the Unified Transport Authority is already seized of the above proposal and it is expected that the Task Force will suggest the structure, staffing pattern and functional scope etc. for such an Authority.

Table 5.5 short Term and Long Term Passenger Capacity Augmentation

Corridor	Additional Passenger Carrying Capacity	
	Short term	Long term
Delhi—Faridabad	4700	29000
Faridabad—Palwal	4700	29000
Delhi—Gurgaon	8800	28000
Gurgaon—Rewari	8800	28000
Rewari—Alwar	8800	28000
Delhi—Bahadurgarh	—	—
Bahadurgarh—Rohtak	—	—
Delhi—Sonapat	6600	—
Sonapat—Panipat	6600	—
Delhi—Ghaziabad	13600	56000
Ghaziabad—Hapur	12000	—
Ghaziabad—Bulandshahr	3500	20000
Ghaziabad—Modinagar	5100	56000
Modinagar—Meerut	5100	56000

6.1 The Need

Tele-communication facilities play an important role in providing safety and stability needed for the economic development and security to the social life. An efficient telecommunication system in a way also supplements the transportation needs required for industrial development and trade and commerce.

For dispersal and development of the economic activities away from Delhi to out-lying areas and to provide proper encouragement and impetus to this action, it is the foremost need to provide there an adequate and effective network of the telecommunication facilities.

In the eight priority towns/complexes, recommended by the Board for development, the existing telecommunication facilities are very inadequate in terms of capacity and degree of sophistication. Since the existing facilities have out-lived their life, they do not function properly. As a result, the service is highly unreliable and insufficient. As such provision of reliable telecommunication facilities and network comparable to that in Delhi is of significant importance as input in selected towns and the DMA towns for their desired development.

6.2 Objectives

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

- i. Full automatisisation of telephone services.
- ii. Replacement of all life expired exchanges and other equipments.
- iii. Provision of telephone and telex practically on demand.
- iv. Provision of subscribers dialling facilities between Delhi and Priority towns and DMA towns.
- v. Connection of priority towns and DMA towns with Delhi by reliable cable and radio media.
- vi. Provision of reliable trunk services either by direct dialling facilities or through demand service among the priority towns and DMA towns.
- vii. Provisions of telegraph offices as justified.

With a view to understand and estimate the actual need of the telecommunication facilities in the major settlements of the Region, the Board held discussions with the various development agencies of the Region. The following major suggestions as an outcome of these discussions have been accepted by the Board for including them in the Draft Plan.

- i. As the telecommunication facilities are as important as other community facilities in the land use plan of a town, the planning and development agencies should make adequate provision of land for these facilities in their Master Plans right at the time of their preparation. It is recommended that the land and the buildings required for Telecom needs should be made available free of cost to the Department of Telecom in every town for better and quicker action.
- ii. It is felt necessary that a separate electricity feeder should be provided to the telephone exchanges for smooth and an unobstructed service.

- iii. Underground ducts should be provided in Delhi and major town for laying telephone cables for their safety and better maintenance.
- iv. All manual and mechanical exchanges in Delhi and the major towns should be replaced by electronic exchanges.

According to national objectives, Department of Telecommunications has agreed to (i) provide connections between all State Capitals and Delhi, District head-quarters and State Capitals and, smaller settlements and district head-quarters, and (ii) clear the waiting list of March '87 within Seventh Five Year Plan.

As the NCR Planning Board has proposed accelerated growth with incentives only in priority towns and controlled growth in DMA towns, an outlay of Rs. 162.61 crores has been proposed to meet the accelerated demand in eight priority towns/complexes and normal demand in DMA during Seventh Plan period. Of Rs. 162.50 crores, an investment of nearly Rs. 66.50 crores, forms the part of the core plan of Department of Telecommunications, Ministry of Telecommunications (Table-6.1) and an amount of Rs. 96.11 crores is to be met by the funds to be arranged by National Capital Region Planning Board through Central Government as detailed out in Table-6.2.

Details of the investment for augmentation and renovation of the existing infra-structure townwise, during Seventh Five Year Plan are as in Table-6.3.

Table 6.1 Investment for Development of Telecommunication Facilities Proposed in Telecom. Core Plan – VII Five Year Plan

		Rs. in Crores
A.	Selected Towns	
1.	Meerut	11.00
2.	Hapur	3.70
3.	i. Bulandshahr	1.50
	ii. Khurja	1.70
4.	Palwal	0.90
5.	i. Alwar	5.60
	ii. MIA Alwar	0.70
6.	i. Rewari	2.90
	ii. Dharuhera	0.50
	iii. Bhiwadi	0.90
7.	Rohtak	3.40
8.	Panipat	5.60
		<hr/> 30.40
B.	For DMA Towns	
1.	i. Ghaziabad	5.90
	ii. Loni	0.50
2.	NOIDA	7.80
3.	i. Faridabad	1.40
	ii. Ballabhgarh	1.50
4.	Gurgaon	7.50
5.	Bahadurgarh	2.60
6.	Kundli	0.90
		<hr/> 28.10

Total (A) + (B) = Rs. 66.50 crores

Source: Deptt. of Telecommunications, Min. of Communications.

Table 6.2 Investment for Provision of Telecommunication Facilities on the Basis of Accelerated Growth Projections

A. For Selected Priority Towns		Rs. in crores
1.	Meerut	13.00
2.	Hapur	2.01
3.	i. Bulandshahr	2.02
	ii. Khurja	0.65
4.	Palwal	1.88
5.	i. Alwar	3.89
	ii. MIA Alwar	0.46
6.	i. Rewari	2.21
	ii. Dharuhera	0.84
	iii. Bhiwadi	1.62
7.	Rohtak	7.93
8.	Panipat	3.89
		<u>40.40</u>
(Telecom developments have been restricted to meet the estimated demand projections instead of accelerated incremental demand).		
B. For DMA Towns		
1.	i. Ghaziabad	20.24
	ii. Loni	0.84
2.	NOIDA	6.32
3.	i. Faridabad	18.73
	ii. Ballabhgarh	1.30
4.	Gurgaon	6.48
5.	Bahadurgarh	1.80
		<u>55.71</u>

Total (A) + (B) = Rs. 96.11 crores

Source: Deptt. of Telecommunications, Min. of Communications.

Table 6.3 Details of the Augmentation and Renovation in the Telecommunication Facilities in the DMA and Priority Towns.

				Cost (Rs. lakhs)
1.	Local Switching			
	i. Augmentation	71730	Lines	9298.00
	ii. Replacement	27970	Lines	1650.00
2.	Telex			
	i. Capacity	540	Lines	93.07
	ii. Teleprinters	540	Lines	143.10
3.	Trunk Exchanges	2	Centres	55.54
4.	Transmission Schemes			
	i. Open Wire Systems			
	a. 3 Channel	24		28.80
	b. 8 Channel	12		24.00
	ii. VFT			
	a. 12 Channel	7		12.60
	b. 5 + 4D	18		21.60
	iii. Coaxial	9	Schemes	1720.16
	iv. Optical Fibre	3	Schemes	518.02
	v. V.H.F.	7	Schemes	505.00
	vi. Micro-wave	8	Schemes	996.28
	vii. PCM	5	Schemes	175.00
5.	Telegraphs	—		100.00
6.	Land and Building	—		700.00
Grand Total				<u>16241.17</u>

Source: Deptt. of Telecommunications, Ministry of Communications.

Say Rs. 162.50 crores

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.

7.1 Power Generation

Existing:

The National Capital Region falls within the northern power zone and has in operation six power generating stations—five thermal and one gas fired located within its boundaries. Three stations lie in the Delhi UT run by the Delhi Electricity Supply Undertaking (DESU) and the rest three in the Haryana portion of the NCR, two run by the Haryana State Electricity Board (HSEB) and one by the National Thermal Power Corporation (NTPC). The Sub-regions of Uttar Pradesh and Rajasthan do not have any power generating station located within them. The aggregate installed capacity of these generating stations is 1834.1 MW.

Under Construction

Five power plants with a total installed capacity of 1665.3 MW are under construction in the Region. Of them, three are thermal, one hydro and one nuclear. The Micro Hydel station is at Kokroi with an installed capacity of only 0.3 MW and is run by the alternate Hydro Energy Centre, Roorkee University as an experimental project. The atomic plant is at Narora with an installed capacity of 470 MW. Of the thermal plants, the one at Dadri is by NTPC, the extension of Panipat plant is by the Haryana State Electricity Board and the one at Rajghat by the Delhi Electricity Supply Undertaking is a replacement unit. A benefit of 815 MW from four of these plants would become available during the remaining period of Seventh Plan and, benefit from Dadri station would accrue only in the Eighth Plan. Thus, the total installed generating capacity by the end of 1995 in the NCR would be around 3489 MW.

Proposals:

Two more extension schemes with a total installed capacity of 430 MW are anticipated to come up in the near future in the Region. Thus, on completion of all these schemes, the aggregate installed capacity of all the 13 generating stations will be in the order of 3920 MW. Table 7.1 gives the power generation programmes in the Region.

7.2 Power Supply Position (1986-87)

(i) Delhi UT:

The Delhi Electric Supply Undertaking is responsible for meeting the power requirements of Delhi UT. The maximum demand of power in Delhi has already reached 968 MW (August, 1986). The

Table 7.1: Power Generation Programme in the NCR

Sl. No.	Schemes (Agency)	Location	Type	Units & rated capacity MW	Installed capacity MW	Expected year of commissioning
Existing						
1.	Rajghat (DESU)	Delhi	Thermal	1X15	15	
2.	I.P. Estate (DESU)	Delhi	Thermal	1X36.6 3X67.5 1X60	284.1*	
3.	Badarpur (NTPC)	Delhi	Thermal	3X100 2X210	720	
4.	I.P. Estate (DESU)	Delhi	Gas	6X30	180	
5.	Panipat Stage I&II (HSEB)	Panipat	Thermal	4X110	440	
6.	Faridabad (HSEB)	Ballabhgarh	Thermal	1X15 3X60	195	
Sub-total					1834.1	
Under Construction:						
1.	Rajghat (DESU) (replacement units)	Delhi	Thermal	2X67.5	135	Unit I May 88, Unit II Sept 88
2.	Panipat (HSEB) Stage III	Panipat	Thermal	1X210	210	1987-88
3.	Kokroi**	Sonepat	Hydel	3X0.1	0.3	Not known
4.	Narora (APP)	Anupsagar	Nuclear	2X235	470	£Unit I—1987/88 Unit II—1989/90
5.	Dadri (NTPC)	Ghaziabad	Thermal	4X210	840	Unit I—1991-92 Unit II—1992-93 Units III & IV 1993-94
Sub-total					1665.4	
Proposed						
1.	I.P. Estate (DESU)	Delhi	Thermal	1X210	210	
2.	Panipat Units 4&5 (HSEB)	Panipat	Thermal	2X110	220	
Sub-total					430	
Grand total					3919.4	

* Includes the share of Haryana of 62.5 MW

** By Alternate Hydro Energy Centre, Roorkee University as an experimental project.

£ Narora Atomic Power Project under central sector is being set up for the benefit of constituent states of the Northern Region. Allocation of power is yet to be decided.

Sources: 1. Ministry of Energy/Central Electricity Authority
2. State Power Boards
3. DESU

present availability to the DESU from its own sources is limited to about 200-250 MW from I.P. station at Rajghat. A gas turbine generator with an installed capacity of 180 MW has already been commissioned in November, 1986, which will take care of the peak load requirement of Delhi and also to act as a 'black start'. The Badarpur Thermal Power Station (BTPS) supplies power to an extent of 400-450 MW to Delhi. In fact, the DESU has the first charge on the power generated at BTPS and surplus power, is diverted to other States. The DESU has also a share in the Centrally sponsored schemes like Singarauli Super Thermal power station, Bairasiul Hydro power station and Salal Hydro power station. During 1986-87, Delhi UT required 5676 MU against which the supply was 5674 MU—a shortage of only 2 MU or 0.04% and thus, the power supply position in Delhi remained comfortable during the last year.

(ii) *Haryana:*

Haryana, in addition to receiving power from its own generating stations, receives power from Bhakra Beas Management Board (BBMB), Pong Dehar and Bairasiul Hydel stations and I.P. station (Delhi) to meet its demand. In Haryana as a whole, during 1986-87, against the requirement of 5945 MU of energy, only 5147 MU was available and thus there was a shortage of 13.4%, which reflects the position of the Sub-region also, which is not getting any preferential treatment.

(iii) *Rajasthan:*

Rajasthan's power demand is met by the generating stations owned by the Rajasthan State Electricity Board and power made available from the BBMB system, Singarauli Super Thermal system and power imported from the neighbouring states. In Rajasthan, against the requirement of 8090 MU of energy, 7448 MU was available. Thus, there was a shortage of 7.9% during 1986-87. However, due to some preferential treatment to the industrial areas of Alwar and Bhiwadi, shortage of electricity has been a minor constraint.

(iv) *Uttar Pradesh*

Uttar Pradesh receives power from integrated grid of the Uttar Pradesh Power System and the Northern Region grid. All the hydel and thermal power systems run as an integrated grid. Further, the Uttar Pradesh Power System is being operated in synchronisation with the Northern Region Grid comprising Jammu and Kashmir, Punjab, Himachal Pradesh, Haryana, Delhi, Rajasthan and part of Madhya Pradesh. Against the requirement of 20204 MU, the supply was only 17198 MU during 1986-87, thus, with a shortage of 14.9% in the State. Once again, the towns and industrial areas at Ghaziabad and NOIDA have been getting a preferential treatment in respect of power supply.

The position of power supply in the constituents of the NCR was as under:

	State/UT	Requirement	Availability	Shortage	Unit—MU % Shortage
1.	Delhi	5676	5674	2	0.04
2.	Haryana	5945	5147	798	13.40
3.	Rajasthan	8090	7448	642	7.90
4.	Uttar Pradesh	20204	17198	3006	14.90

Source: Ministry of Energy, Department of Power

Month-wise energy shortage (in percentage) during the period April, 1986 to March, 1987 (Table 7.2) shows that except Delhi, all the other States of Haryana, Rajasthan and Uttar Pradesh faced energy shortages throughout the year. However, the position of Rajasthan was comparatively better than that of Haryana and Uttar Pradesh.

Table 7.2: Month-wise Energy Shortage 1986-87

Month	Haryana	Rajasthan	U.P.	Delhi
April, 1986	9.3%	11.1%	11.8%	0.5%
May	10.0%	7.3%	11.8%	0
June	9.1%	7.9%	14.7%	0
July	8.0%	3.9%	16.0%	0
August	8.7%	0.5%	15.1%	0
September	16.1%	0.	12.6%	0
October	15.4%	11.1%	12.6%	0
November	18.4%	11.6%	13.9%	0
December	19.0%	13.4%	17.0%	0
January, 87	26.4%	14.7%	18.6%	0
February	13.2%	9.2%	17.5%	0
March	7.3%	1.7%	15.3%	0
1986-87	13.4%	7.9%	14.9%	0.04%

Source: Ministry of Energy, Department of Power.

7.3 Pattern of Energy Consumption

On the basis of data on consumption of power loadwise in the constituents for 1985-86, the total energy consumption was of the order of 7530 MU of which more than one-third is by industrial sector, nearly one-fourth by domestic use and about one-seventh by agricultural use.

In all the participant States, except Delhi, the energy figures refer to restricted supply only. For example, in the Haryana Sub-region, the energy consumption would have been 1892 MU against the given 1401 MU and in the UP Sub-region 539 MU against 431 MU, had not the supply been restricted. In the Sub-region wise consumption pattern, the Rajasthan Sub-region relatively tops in industrial use accounting for 80% of the energy consumed by the Sub-region followed by the Haryana Subn-region with 37%. On the whole, the consumption by the industrial sector is maximum in the Region being 37% and, also in all but the Delhi UT Sub-region. The picture of energy consumption varies among the Sub-regions. In Delhi, the highest consumption is in domestic sector which is almost one-third of the total consumption. Domestic sector occupies the second position in power consumption and the agricultural use third in the order in the Region. Agriculture ranks second in energy consumption in the Haryana, Rajasthan and Uttar Pradesh Sub-regions. Except in Delhi UT, where the commercial sector occupies third position, in the rest of the Sub-regions, it ranks the fourth and the last as also in the Region as a whole. (Table 7.3).

7.4 Per Capita Energy Consumption

Per capita energy consumption is a barometer of the status of economic development. On the population figures estimated to the middle of 1985-86, the percapita consumption figures are worked out.

The per capita consumption of energy in Delhi is one and a half times that of the Region, whereas that of Haryana, Rajasthan and Uttar Pradesh Sub-regions, fairly compares with each other. The percapita energy consumption of the Uttar Pradesh Sub-region is the least being only 236 units. At the regional level, the industrial sector leads followed by domestic use and commercial sector. Among the Sub-regions, the Rajasthan Sub-region tops in industrial percapita consumption with 231 units followed by Delhi UT with 143 units and Haryana 132 units, the least of 92 units being in the Uttar Pradesh Sub-region. Domestic sector leads in Delhi (164) whereas industry tops in other Sub-regions (Table 7.4).

The low per capita consumption of energy in the participant States compared to Delhi is mainly due to the power supply position in Delhi being satisfactory with no power shortage, whereas in the case of the other Sub-regions, the supply is heavily restricted.

Table 7.3 Pattern of Energy Consumption 1985-86**Unit: MU**

Sl.No.	Area	Domesti	Commercial	Industrial	Agricultural	Others	Total
1.	Delhi UT	1280.00 (32.32)	800.00 (20.20)	1115.00 (28.16)	— —	765.00* (19.32)	3960.00 (100.00)
2.	Haryana Sub-Region						
	i. Sonapat Distt.	31.50	4.80	78.68	40.59	1.83	157.40
	ii. Gurgaon Distt.	24.94	6.36	51.58	55.79	5.29	143.96
	iii. Faridabad Distt.	72.64	14.34	327.33	53.64	6.95	474.90
	iv. Rohtak Distt.	55.69	13.40	68.00	44.51	2.89	184.49
	v. Panipat Tehsil	28.78	9.92	168.27	151.59	2.31	360.87
	vi. Rewari and Bawal Tehsils	12.33	1.95	25.32	37.17	2.49	79.26
	+ Sub-Total	225.88 (16.12)	50.77 (3.62)	719.18 (51.33)	383.29 (27.36)	21.76 (1.55)	1400.88 (100.00)
3.	Rajasthan Sub-Region						
	i. Six Tehsils of Alwar Distt.	14.74 (4.69)	7.36 (2.35)	253.76 (80.86)	30.29 (9.66)	7.67 (2.44)	313.82 (100.00)
4.	Uttar Pradesh						
	i. Meerut Distt.	89.34	31.31	157.53	208.09	88.79	575.06
	ii. Ghaziabad Distt.	82.75	34.06	498.53	143.65	125.56	884.55
	iii. Bulandshahr Distt.	28.21	3.35	69.81	291.35	1.78	394.50
	Sub-total	200.30 (10.80)	68.72 (3.71)	725.87 (39.15)	643.09 (34.68)	216.13 (11.66)	1854.11 (100.00)
	Grand total	1720.92 (22.86)	926.85 (12.31)	2813.81 (37.37)	1056.67 (14.04)	1010.56 (13.42)	7528.81 (100.00)

Sources: Concerned State Electricity Boards and DESU**Note:** 1. Figures in brackets are percentages to total

* DESU supplied 710 MU in bulk to licencees like NDMC and MES

+ The unrestricted energy consumption would be Domestic: 305, Commercial: 69, Industrial: 1971, Agricultural: 517 and Others: 30.
Total: 1892.**Table 7.4 Per Capita Consumption of Energy 1985-86**

Sl.No.	Sub-region	Domestic	Commercial	Industrial	Agricultural	Others	Total
1.	Delhi UT	164.3	102.9	143.1	—	98.2	508.3
2.	Haryana	41.5	93.4	132.3	70.5	4.0	257.6
3.	Rajasthan	13.4	6.7	230.9	27.6	6.9	285.5
4.	Uttar Pradesh	25.5	8.8	92.4	81.9	27.5	236.1
	Region	77.6	41.8	126.9	47.6	45.6	339.5

7.5 Rural Electrification

Electrification of villages is indispensable for improving the living standards of rural people. Energisation of pumpsets goes a long way in increasing agricultural production. In the Region as a whole, about 80% of the villages are electrified (Table 7.5). All the villages in the Union Territory of Delhi and in the Haryana Sub-region are electrified. In the UP and the Rajasthan Sub-regions, only about 60% and 90% of the villages had been provided with electricity respectively till the end of March, 1987. As far the Uttar Pradesh Sub-region

is concerned, progress in rural electrification in Bulandshahr district is the least where 52% of the villages still remain to be electrified.

About 2.12 lakh pumpsets have been energised in the Region. The figure is expected to reach a minimum of 2.37 lakhs by the end of the Seventh Plan. (It may, however, be noted that the Rajasthan Sub-region has not been taken into account as figures pertaining to this area are not available).

Table 7.5 Rural Electrification and Energisation of Pumpsets

S.No.	Area	Total No. of Inhabited villages	Villages electrified	Villages proposed to be electrified during VII Plan	Villages to be electrified by the end of VII Plan	Pumpsets energised	Pumpsets proposed to be energised during VII Plan	Pumpsets to be energised by the end of VII Plan
I	Delhi UT(31.3.85) Sub-Total	214 (100.0)	214	Nil	214 (100.0)	15732	2500	18232
II.	UP Sub-Region (31.3.85)							
	1. Meerut Distt.	920	710	210	920	40154	3823	43977
	2. Ghaziabad Distt.	704	424	280	704	8727	2180	10907
	3. Bulandshahr Distt.	1365	651	714	1365	39943	4500	44443
	Sub-Total	2989	1785 (59.7)	1204	2989 (100)	88824	10503	99327
III.	Haryana Sub-Region (31.3.85)							
	1. Sonapat Distt.	331	331	Nil	331	11687	2000	13687
	2. Gurgaon Distt.	673	673	Nil	673	25374	2000	27374
	3. Faridabad Distt.	425	425	Nil	425	15174	3000	18174
	4. Rohtak Distt.	438	438	Nil	438	10987	3000	13987
	5. Panipat Tehsil	167	167	Nil	167	29295	3000	32295
	6. Rewari & Bawal Tehsils	352	352	Nil	352	14838	2000	16838
	Sub-total	2386	2386 (100.0)	Nil	2386 (100.0)	107355	15000	122355
IV.	Rajasthan Sub-Region (31.3.87) Alwar, Behror, Mandawar, Tijara, Kishangarh and Ramgarh Tehsils	1063	960	N.A.	1063	N.A.	N.A.	N.A.
	Grand Total	6652	5345 (80.35)	1204	6652 (100)	211911	28003	239914

*Includes uninhabited villages.

Note: Figures in brackets indicate percentages of the total number of villages in the respective Sub-region/region.

Sources: State Electricity Boards and DESU

7.6 Load Forecast and Sources of Supply

The demand for power has been generally rising at a rapid rate in the constituents of the Region including Delhi. The demand has invariably outstripped the availability of power causing wide spread shortages of power all over the Region except Delhi. The power supply situation has deteriorated during the Seventies and the average growth rate during the last decade came down drastically and, the overall per capita power consumption has remained almost stagnant and declining. This decline in the growth rate of electricity consumption could be largely attributed to the widespread power shortage and to certain extent to the enlarging base of power generation and evergrowing population size.

To manage the situation, the State Electricity Boards have imposed varied restrictions from time to time during the last decade, both on the demand and energy requirements. The growth of electricity reflects the growth of availability of power rather than the demand for it. The continued restrictions on the use of electricity have led to dissatisfaction among the consumers and, there has been a feeling that the inadequacy of power has adversely affected both the industrial and agricultural development in the Region. Adjustments have, therefore, to be made in the forecast to take care of the suppressed demand on account of restrictions imposed on consumption and, this is taken care of by the Central Electricity Authority while forecasting the load for the States in future.

In forecasting the load for the NCR, the uniqueness in terms of economic structure and productive sectoral contributions in shaping the microeconomy has to be considered somewhat in depth. Moreover, the intended departure in the concentration and composition of particularly the power intensive sectors such as industry and other economic activities including the tertiary occupations need specific attention in computing the power demand of the NCR for the future. It may also be noted that so far power supply is concerned, on the whole, the NCR area has been a favoured region vis-a-vis the other parts of the participant States mainly due to the inclusion of the entire Delhi UT within the NCR.

a) Norms for Demand Projections

Due to the special and induced development being envisaged in the NCR in general and the priority towns in particular, the demand projection to be realistic could not be on pro-rata basis on the lines forecasted for the respective States as a whole. For this purpose, the NCR should be treated as a separate Region. There also should be some uniform basis for power projections for the NCR. Load category wise projections based on development proposals have to be done for a realistic forecast. At present, the broad indications are that the rural-urban population ratio will undergo a substantial change by 2001, the induced development in the selected towns for development on priority basis will be mostly in the form of industries and commercial activities and, also as per the policy directives, the norms and standards of civic services including power supply in the DMA and priority towns will be comparable to that of the Delhi U.T. The categorywise percapita consumption as of Delhi can be taken as the basis and as the targets to be achieved in stages. In certain sectors, like commerce, the participating States cannot match with Delhi as is evident from the energy consumption pattern of the States: It is less than 5% in the participating States against the 21% consumption in Delhi. The norms proposed to be adopted for forecasting categorywise load are as follows:

Domestic:

The present domestic per capita consumption of Delhi as the basis and a growth rate of 10% to be taken. For rural population, the consumption may be on the basis of present domestic consumption of the respective States.

Commercial:

10% of the total consumption as commercial consumption and future growth rate of 10% per annum to be adopted.

Industrial:

This will be on the basis of indications available for the priority and the DMA towns. Presently, only the additional population to be accommodated in these towns besides the normal growth is available and this can be the basis for demand projections.

Others:

For other categories, normal growth as applicable to the respective States be taken.

Upto the 7th Plan

In view of the fact that the special development activities may not be in a position to make a perceptible thrust till the end of the Seventh Plan, the same trend as at present may be continued.

The DESU, however, has to meet its normal requirements, and it has to be taken in isolation.

i. Delhi UT

The maximum demand of power in Delhi has already reached a figure of 968 MW (August, 1986) and, as per projections made by the 12th Power Survey Committee of the Central Electricity Authority, the demand is expected to go upto 1373 MW by the end of Seventh Five Year Plan and 3409 MW by the year 1999-2000. However, taking into consideration the various development activities envisaged in the Master Plan of Delhi, the maximum demand may reach 4,000 MW mark by the year 2001 and, DESU has initiated steps to meet this demand (Table 7.6).

Already, the DESU is tapping its own sources at IP Station at Rajghat, and a gas turbine and, also draws power from the BTPS and other Centrally sponsored schemes at Singarauli, Bairasiul and Salal.

In addition to this, the DESU is also expected to be benefited out of the other Centrally sponsored schemes like Rihand Super Thermal Power Station, Narora Atomic Power Station, Chamera Hydro Electric station, Anta gas turbine station, etc. though shares of the DESU from these stations is yet to be finalised. The shortfall, if any, will be met by the DESU through assistance from the Northern Regional Grid.

In order to augment its own sources of power, the DESU has taken up the work of installing 2 units of 67.5 MW at Rajghat as replacement of the existing units. These units are scheduled for being commissioned in 1988-89. Also, the DESU is exploring the possibility of adding another unit of 210 MW at Indraprastha Station.

The National Thermal Power Corporation is setting up a new thermal station at Dadri (Uttar Pradesh) with 4X210MW thermal sets. The DESU is expected to get 90% of the available power from this Station. In order to meet the power requirement of Delhi on long term basis, the DESU has a proposal to establish a 400 KV ring around Delhi with 'Quad' conductor which will bring bulk power to Delhi from the generating stations located in the Northern Region.

ii. Haryana Sub-Region

Haryana, in addition to receiving power from its own generating stations, also receives power from Bhakra Beas Management Board (BBMB); Pong; Dehar and Bairasiul Hydel stations and Indraprastha Station to meet its demand. The Haryana Sub-region thus receives power from various sources. A diesel power plant of 100/110 MW capacity is proposed to be installed by the Faridabad Industries Association (FIA) near Faridabad. This plant is likely to come up by the end of the Seventh Plan or early Eighth Plan. Though these capacities are installed in the NCR area, they will also have to feed other parts of Haryana. To cope up with the demand of accelerated growth, it is proposed to add an additional capacity of 1X210 MW at Panipat thermal station and a thermal generating station with a capacity of 2X210 MW at Palwal.

Table 7.6 Maximum Demand/Availability of Power to DESU.

In MW					
	87-88	88-89	89-90	94-95	1999-2000
1. Demand as projected by 12th Power Survey	1146	1225	1373	2164	3409
2. Availability					
a. DESU's existing plant	176	176	176	176	176
b. 2X67.5MW replacement unit	—	67.5	135	135	135
c. 6X30MW gas turbine	180	180	180	180	180
d. BTPS	400	400	400	400	400
e. Bairasiul	20	20	20	20	20
f. Singrauli	150	150	150	150	150
g. Salal	45	45	45	45	45
Total availability	971	1038.5	1106	1106	1106
3. Deficit	175	216.5	267	1058	2303

- Note:**
1. The DESU is expected to be benefited out of the other Centrally sponsored schemes like Rihand Super Thermal Power station, Narora Atomic Power Station, Chamera Hydro Electric Station, Anta Gas Turbine Station etc. and share of the DESU from these stations is yet to be finalised. The shortfall if any shall be met by DESU through assistance from the Northern Regional Grid.
 2. 12th Power Survey Committee has assessed the maximum demand upto the year 2000 only. The demand for the year 2001, taking into consideration the development that is taking place in Delhi, shall be of the order of 4000MW.

For forecasting the load for the Haryana Sub-region, the State Electricity Board has projected the rural and urban population as under:

	(Population in lakhs)		
	1981 Actual	1991 Projected	2001 Projected
Rural	37.32	42.23	41.78(34.5)
Urban	12.07	20.47	30.38(42.5)
Total	49.39	62.70	72.16(77.0)

Note: Figures in brackets indicate the assigned population by the NCR Planning Board.

The restricted and the unrestricted (by adding 35% of the restricted demand due to power cut) energy consumption for 1985-86 is as under:

	Restricted	Unit: MU Unrestricted
Domestic	226	305
Commercial	51	69
Industrial	719	971
Agricultural	383	517
Others	22	30
Total	1401	1892

The per capita consumption of electricity in the Haryana Sub-region for 1985-86 is 253 units out of which 130 units are due to industrial consumption (on population estimated as on 31.3.1986). On the basis

of these information, the load forecast for 2001 AD has been made by the State Electricity Board for the Sub-region as follows:

	MU		MU
Domestic	3026	1985-86	1892(unrestricted)
Commercial	1054	1989-90	3328
Industrial	4054	1994-95	6203
Agricultural	813	1999-2000	8598
Others	125	2001	9072
Total	9072		

Assumptions made by the HSEB:

1. The per capita domestic consumption for Delhi area for the year 1984-85 has been assumed as 147 units.
2. It is proposed to add 3,000 Tube wells per year in the Haryana Sub-region.
3. Load per tubewell has been assumed as 5 HP and consumption is assumed as 1650 units per annum.
4. The population ending March 1986 for the Haryana Sub-region has been taken as 55 lakhs.

Assuming an annual load factor of 56%, the demand corresponding to the estimated energy requirement is worked out at 1850 MW by 2001 AD.

iii. Rajasthan Sub-region

Rajasthan's Power demand is met by the generating stations owned by the Rajasthan Electricity Board and power made available from the BBMS System, Singarauli 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 State Electricity Board, has tentatively worked out the load for 1989-90 at a rate of 10% increase per annum. Accordingly, the energy demand is projected at 657 MU in the Rajasthan Sub-region and the corresponding peak load is 125 MW. The demand for 1994-95 at the same trend works out to 1045MU, 1999-2000: 1680MU and 1850 MU by 2001.

iv. Uttar Pradesh Sub-region

The Uttar Pradesh Sub-region receives power from the integrated grid of the Uttar Pradesh Power System and the Northern Region grid. It may be noted that the entire hydel and thermal power system runs as an integrated grid. Further, the Uttar Pradesh Power System is being operated in synchronisation with Northern Region grid comprising Jammu and Kashmir, Punjab, Himachal Pradesh, Haryana, Delhi, Rajasthan and part of Madhya Pradesh.

The load forecast is made districtwise for rural and priority urban areas separately by the UP State Electricity Board. The additional population by way of deflection of Delhi bound migrants to the priority towns has been taken note of in the load forecast. Accordingly, the energy requirement of the UP Sub-region, by the end of the Seventh Plan will be in the order of 3527 MU and this will build upto 5677 MU by 1994-95, 8594 MU by 1999-2000 and 9234 MU by 2001 (Table 7.7).

As may be seen from the energy forecasts, the increase in the energy requirements is 10 to 15% per annum compounding. The energy demand in the Sub-region has gone up from 8020MU (unrestricted) in 85-86 to 36520 MU by 2001. The per capita consumption of energy will improve from 340 units (restricted) in 1985-86 to 1207 by 2001 in the Region. Sub-region wise, the Delhi resident will consume almost three and a half times and the UP Sub-region four times whereas the one from the Haryana and the Rajasthan Sub-regions four and a half times the 1985-86 level by 2001 (Table 7.8).

This is unrestricted demand and this may be fully met if the power supply situation improves substantially compared to the present power supply position where there are shortages in power supply

Table 7.7: Energy Forecast for the UP Sub-region: 1989-90 to 2001

Year	Meerut District		Ghaziabad District		Bulandshahr District	Total
	Meerut	Other Towns and rural areas	Ghaziabad NOIDA & Hapur	Other Towns & Rural		
1986-87	162	658	598	757	493	2668
1989-90	166	808	971	919	663	3527
1994-95	311	1171	1671	1330	1194	5677
1999-2000	678	1622	2450	2014	1830	8594
2000-2001	802	1696	2569	2191	1976	9234

- Note:**
1. 1986-87 figures are 'unrestricted' requirements.
 2. For Meerut rural, 25% shortage, Ghaziabad rural 22% shortage and Bulandshahr 22% shortage is taken to compute the energy requirements.
 3. The assigned population by 2001 for Meerut is 15.5 lacs, Ghaziabad-Loni and NOIDA 16.5 lacs. Hapur 4.5 lacs and Bulandshahr-Khurja 8 lacs.
 4. Rural Urban breakup not available for Bulandshahr

Sources: Basic Data from UP State Electricity Board, EDU-Meerut, Ghaziabad & Bulandshahr

Table 7.8: Energy Forecast: Sub-regionwise-2001**Unit: MU**

Sub-region	1985-86 actual	1989-90	1994-95	1999-2000	2000-2001
Delhi UT	3960	5846	10326*	16268*	19088*
Haryana	1401	3328	6203	8598	9072
Rajasthan	314	657	1045	1680	1850
Uttar Pradesh	1854	3527	5677	8594	9234
NCR	7529	13358	23251	35140	39244

* Computed

in all the participating States except Delhi. As of today, power supply position in the constituents of the NCR will be more or less the same as in the participant States and the Delhi UT.

According to the estimates made by the Central Electricity Authority in their Twelfth Electric Power Survey of India, all the constituents of the NCR have experienced shortage of power in 1985-86 and the overall shortage will be more by the end of the Seventh Plan (Table 7.9). The power situation in Rajasthan will continue to be worse, whereas in the case of Delhi, the situation may deteriorate for which the DESU is

Table 7.9: Likely Power Supply in 1989-90**Unit: MU**

State/Ut	Requirement		Availability		Deficit	
	1985-86	1989-90	1985-86	1989-90	1985-86	1989-90
Delhi UT	5002	7217	4757	5846	245	1371
Haryana	6429	9266	5710	8915	(4.9)	(13.0)
Rajasthan	9133	13613	6862	8379	719	351
Uttar Pradesh	21369	30749	18285	29466	(11.2)	(3.8)
					2271	5234
					(24.9)	(38.4)
					3084	1283
					(14.4)	(4.2)

Source: 12th Electric Power Survey of India, CEA

Note: Figures in brackets are percentages of requirements.

already taking action to meet the situation. The power survey shows a fairly hopeful scene of power supply both in Haryana and Uttar Pradesh with the present power scarcity reduced substantially by then. The power scene in the parts of the States under the NCR is a reflection of that of the respective States/UT.

7.7 Optimum Transmission and Distribution System

A well-knit network system of transmission and distribution is very important to ensure supply of energy at the point and time of need. There may be some inadequacies in the present network system. However, to distribute the electrical energy at all points of proposed developments of various sectors, an optimum transmission and distribution system has to be planned. The constituent electricity authorities have tentatively worked a network of distribution in their respective portions.

i. Delhi UT.

The 400 KV ring around Delhi with 'Quad' conductor will have a total of 5 numbers of 400/200 KV step down Sub-stations to be established by 2001. In the first instance, three sub-stations located at (i) Mandawali (ii) Bawana and (iii) Bamnoli are being established. The sub-station at Mandawali is being constructed by the NTPC as a part of the programme to evacuate power from Rihand Super Thermal power station. The remaining 400/200 KV Sub-stations have been planned at Riwara in Mehrauli block and Maharani Bagh. A suitable transmission system on 220 KV level to receive bulk power from the proposed 400/200 KV Sub-stations has also been conceived. The distribution system is also being planned to take care of all the development activities that are taking place in and around Delhi.

ii. Haryana Sub-region

In the part of the Region in Haryana, a number of 400KV, 200KV and 132KV and 66KV capacity Sub-stations and lines associated by 33KV and other Sub-stations and lines are proposed to transmit and distribute electricity to reach all pockets of the area by 2001.

During the Seventh Plan, the proposals include installation of 220KV Sub-stations at Rohtak, Faridabad, Sonapat and Karnal 104c.km of 400KV line, 284c.km of 200KV line and 176c.km of 132KV line.

iii. Rajasthan Sub-region

The power supply to the areas covered by the National Capital Region in Alwar District comprising six tehsils namely Alwar, Behror, Tijara, Kishangarh, Mandawar and Rajgarh is presently from 220/132KV sub-station (s/s) at Alwar.

Upto 1990, the proposals are to have a 220KV line (Dausa-Alwar) and 132KV lines (Dausa-Alwar) and 132KV lines (Alwar to Shahjhapur; Mandawar to Shahjhapur, Alwar-Rajasthan). During 1990-2000, a 220KV line from Alwar to Kairthal and 132KV lines from Kishangarh to Kairthal, Kairthal to Bhiwadi, Kairthal to Behror and Shahjhapur to Mandawar have to be created.

iv. Uttar Pradesh Sub-region

A number of Sub-stations and transmission lines are proposed by the UPSEB to meet the anticipated load demand upto 2001 in the UP-region.

1). The proposals for Meerut district include construction of 132KV Sub-stations at Meerut town, Sinhauli and Kaiteswari, 220KV s/s at Partapur, 400KV line for 5km, 220KV for 25km and 132KV lines for 82km upto the end of the Seventh Plan and 220KV s/s at Mawana, 132/33KV s/s at Meerut, Kharkoda, Sakori, 5km of 400KV, 80km of 220KV and 104km of 132KV lines between 1990 and 2001.

2) For Ghaziabad district, the proposals are to construct a 220KV s/s at Ghaziabad, 132KV s/s at UP Border, Hapur and Ghaziabad, 12km of 220KV, 48.5km of 132KV lines in addition to augmenting the capacity of some s/s upto the Seventh Plan. Beyond the Seventh Plan, the State Electricity Board proposed three 132KV s/s at Ghaziabad, six at other places in addition to increasing the capacity of ten 132KV s/s, 220KV s/s at Sahibabad, Hapur road, Loni road and Bulandshahr road, a 400KV s/s at Loni road, increasing the capacity of three 220KV and 40km of 400KV lines.

3) The proposals for Bulandshahr district include construction of one 220KV s/s at Jahangirabad for 132KV s/s at other places, 6km of 220KV, 40km of 132KV lines upto the Seventh Plan and four 400KV s/s, five 220KV s/s, ten 132KV s/s, 30km of 400KV, 86km of 220KV and 360km of 132KV lines in addition to increasing the capacity of a 132KV s/s beyond 1990 upto 2001.

7.8 Specific Proposals

i) In view of the importance of developing the NCR in a preferential and special manner, power being the prerequisite for any development and it also being inadequate in supply, the Region, so far as the need for power supply is concerned deserves to be treated as a special area. The Region being an interstate region, the portions of the States under the NCR in normal course, cannot be given special or additional importance or resource assistance for generating or supplying additional power as against the other parts of the States. Moreover, the State Governments will have their own priorities, commitments and preferences, and as such partial or favourable treatment to any part of the State will not be in the fitness of things. It is necessary, therefore, to overcome these problems, there should be a unified set-up, in the name of the National Capital Region Electricity Agency, with more powers and functions than that of the Damodar Valley Corporation or the Bhakra Nangal Power Generation Authority. The Agency will have powers and necessary resources to generate, and distribute power, charge and raise revenues etc.

ii) The power supply should be un-interrupted and available in adequate quantity throughout the Region. To meet the additional demand for power in the Region, the State Electricity Boards and also the Central Government can earmark adequate power for the Region. A formula to this effect may have to be worked out in consultation with the concerned authority.

iii) Modus operandi and special allocation of funds to meet the cost of generation and distribution of this additional power may have to be worked out.

iv) The electricity rates may have to be revised in such a way that Delhi becomes a 'Less-preferred area' for industrial activities.

However, to begin with, this could only take over the existing distribution network and act as a distributing agency. The participating States will have to contribute and fix quotas of electricity to the Region and similar quotas should be allocated from the central sources. The participating States will also have to share the funding arrangements for the proposed Agency with suitable assistance from the National Capital Region Planning Board.

WATER SUPPLY AND SANITATION

8.1 Urban Water Supply

i) Water Sources

In the National Capital Region, water is drawn from both surface and sub-surface sources. The Region is endowed with three perennial rivers namely the Yamuna, the Hindon, both traversing through and the Ganga skirting the eastern boundary of the Region. A good network of canals from the rivers benefit the districts of Karnal, Rohtak, Faridabad, Bulandshahr and Ghaziabad irrigating their agricultural lands and supplying water for domestic uses. Other districts draw water from sub-surface sources through handpumps, wells/tubewells and in Delhi, Ranney wells also. The sub-surface water resources to the west of the Yamuna are however, insufficient, and often brackish in quality rendering it difficult for domestic consumption. Scanty rainfall in this area leaves the groundwater resources limited and the tubewells go dry as the water table sinks deep in the summer months. There is generally shortage of water supply in the areas west of the Yamuna and the problems assume acute proportions in dry months.

ii) Water Supply Position

(a) Sources of water supply

According to the concerned departments of the participant States and the Delhi UT, out of the 94 urban settlements, at least 20 do not have organised water supply system and, all of them are in the Uttar Pradesh Sub-Region. (Information was not available for 9 towns). The main sources of water supply in the rest of the towns are wells and tubewells except in Mahendragarh and Rohtak districts in Haryana which are served by canals. In 29 towns including Delhi, the protected water supply is supplemented by the spot sources mostly through handpumps and in a few cases by wells. By and large, all the waters produced by the local bodies are treated except in Delhi where of the 1837 mld, only 1669 mld is treated.

(b) Per Capita Consumption

Out of nearly 87 lakh population of the 65 towns where organised water supply is available in the Region, only 76 lakhs or 88% are served. In only Sonapat and Hassanpur, the coverage by protected water supply is reported full. The quantity of water produced by the local bodies in the 65 towns is around 2180 mld and the quantity at the consumer points is invariably less by 20-30% due to losses in the carriers and at the consumer ends. Old water supply systems suffer losses upto 50% due to large scale leakage from the wornout mains and joints.

The per capita consumption varies from 17 to 240lpcd the extremes being respectively in Baraut and Delhi; and it is between 180 and 225lpcd (40-50gpcd) in three (one class VI and two class V) towns, 135 and 180lpcd (30-40gpcd) in seven towns (four class I and two class IV and one class V), 90 and 135lpcd (20-30gpcd) in seven towns (four class I, two class II and one class III), 45 and 90lpcd (10 to 20gpcd) in thirty two towns (including two class I, two class II and seven class III) towns and less than 45lpcd in the rest of the

towns (including one class II and four class III towns). This does not however, include contribution from spot sources and it is in a few towns between 40 to 50lpcd.

Sub-region	No. of Urban areas 1981	Information available for	Organised w/s available	Range of per capita consumption LPCD	Population covered % (range)	Supplemented by spot sources	Cost of production in Rs. per kl
Delhi UT	6	1	1	240	94.3	1	0.476
Haryana	27	26	26	30-159	30-100	15	0.12 to 1.18
Rajasthan	3	1	1	106	N.A.	1	N.A
U.P	58	57	37	17-220	45-90	12	0.10 to 1.75
NCR	94	85	65	17-240	30-100	29	0.10 to 1.75

N.A. : Not available

c) Treatment

In all the towns supplied with protected water, either complete or partial treatment is given before distribution. Of the 65 towns, only 12 give complete treatment and the rest partial treatment. In most of the cases where ground water sources are tapped, only chlorination is carried out and the canal waters are subjected to other treatments such as sedimentation, flocculation, filtration in addition to pre and post chlorination depending upon the quality of the raw water. However, water from spot sources is not treated at all.

d) Revenue

All the local bodies responsible for the organised water supply raise some revenues. In about 15 towns, the water supply connections are not metered, and in many cases, it is partial. The Delhi Water Supply and Sewerage Disposal Undertaking raises about Rs. 27.78 crores followed by Ghaziabad with Rs. 6.3 crores and Alwar with Rs. 5.25 crores per annum. If all the connections are metered and if collection mechanism is improved, the revenue may go up.

e) Unit Cost of Production

The unit cost of production of water varies between sources of supply and locations. Tapping groundwater costs less compared to surface water. The unit cost ranges from Re. 0.10 in Muradnagar and Loni to Rs. 1.75 in Agarwal Mandi. The production costs a Rupee and more per KL in Rohtak, Rewari, Sonapat, Kithor and Agarwal Mandi. Statement at Annexure IV presents the details of water supply position in the urban areas of the Region as of 1986-87.

f) Water supply in big Urban Centres

Of the 11 Class I cities of the Region (1981), lowest per capita consumption of 63 lpcd in Gurgaon followed by Bulandshahr (80) and Rohtak (95) is noticed. Only Delhi supplies above 200 lpcd and, Gaziabad, Panipat and Meerut consume between 150 and 200 lpcd. Of the three Class II towns, Modinagar consumes the lowest of 24 lpcd. Except Sonapat, all the other urban centres are partly served. A number of these large towns tap spot sources to supplement the piped water supply. Spot sources serve as high as

40% of the town population in Panipat. Cost of production is a rupee (+) per kl of water in Rohtak, Sonapat and Rewari. (Table: 8.1)

Table 8.1: Urban Water Supply in Big Urban Centres 1986

Urban Area		Popula tion 1981	Sources	Water Produc- tion MLD	Per Capita consum- ption LPCD	Popula tion covered (%)	Treat ment Type/ Units	Spot	Sources	Popula tion covered (%)	Revenue in lakhs Rs./ annum	Cost of produc tion kl in Rs.
								HP	Others			
CLASS I												
1.	Delhi	5768200	RRw&TW	1837	240	94.3	CDFR	—	—	NA	2778.15	0.476
2.	Faridabad & Ballabhgarh	330864	Wells	27	136	60	CC	1200	70TW	NA	24.56	0.85
3.	Rohtak	166767	Canals	12	95	80	PS	2500	—	20	31.20	1.00
4.	Panipat	137923	Wells	27.63	159	60	PC	4000	—	40	14.00	0.60
5.	Sonepat	109337	Canals	15	100	100	—	—	—	—	12.00	1.18(c) 0.40(w)
6.	Gurgaon	100877	T.Wells	1.40	63	80	PC	400	—	3	6.00	0.61
7.	Alwar	145000	Wells	17.97	106	NA	CC	16	12	8.3	52.50	NA
8.	Meerut	417395	Canals	7.20	153	75	PCF	6000	500	25	34.61	NA
9.	Ghaziabad	287170	Wells	59.	174	70	PC	NA	NA	NA	63.49	0.40
10.	Bulandshahr	103436	Wells	9.83	80	60	DC	NA	NA	NA	6.641	0.19
11.	Hapur	102837	Wells	13.4	110	60	PC	NA	NA	NA	11.054	0.25
CLASS II												
1.	Rewari	51562	Wells	5	85	85	PC	—	—	—	8.90	1.00
2.	Modinagar	87665	Wells	2.47	24	24	PC	NA	NA	NA	1.037	0.15
3.	Khurja	67119	Wells	4.84	60	50	DC	NA	NA	NA	NA	0.82

Keys: c: Complete; C: Chlorination(treatment); P: Partial; D: Sedimentation; F: Flocculation; R: Rapid Sand Filter
Sources: 1. PHDs of Rajasthan and Haryana 2. UP Jal Nigam 3. Delhi Water Supply and Sewage Disposal Undertaking.

8.2 Urban Sanitation

Sanitation follows scientific progress. Poor sanitation gives rise to high incidence of water-borne and water and sanitation related diseases. The prevalence of high infant mortality, as of 1981, has been more than the national average:

Infant Mortality: 1981

State/UT	Urban	Rural	Combined
Haryana	80	117	109
Rajasthan	86	153	140
U.P.	114	184	177
Delhi	64	110	70
India(1978)	74	137	127

Source: National Master Plan — India International Drinking Water Supply and Sanitation Decade 1981-90.

This is indicative of the magnitude of efforts to be made in the Region to achieve a safe and hygienic living.

i) Sewerage

Out of the 87 urban centres (data not available for 5 in Delhi UT and 2 in Rajasthan Sub-Region), only 20

are reported to have sewerage system and that too to cover only part of their population which varies from 50 to 85%. Of the 20 towns with sewerage system, only 16 have water borne system and it is supplemented by sanitary latrines, septic tanks and others in Panipat, Gohana, Sonapat, Rewari, Faridabad, Palwal, Alwar and Meerut whereas Nuh and Bawal have only sanitary latrines.

In Delhi, out of the 1467 mld of sewage generated, only 745 mld (50%) is treated and the rest finds its way through various nallahs. In Meerut, Ghaziabad and Hapur, part of the sewage is not treated at all. The treated sewage of Delhi is partly used for irrigation and partly let out into the storm water drains to join the Yamuna. In 9 towns, the untreated sewage is used for irrigation purposes, in 7, sewage disposed off on lands and rivers and in the rest, either the waste water stagnates in the depressions or in the drains, creating an unhygienic environment.

Position of Sewerage System: 1986

Sub-region	Total towns 1981	Info available	Sys-exists	Sewage Systems			Towns with				Treatment		Disposal		
				comp.	Part	com-bined	water borne	sani-lat	septic tank	Other	Yes	No	drains	on Land	Rivers
Delhi	6	1	1	—	1	—	1	—	—	—	1	—	—	—	1
Haryana	27	27	14	—	14	8	11	10	5	6	—	14	4	3	7
Rajasthan	3	1	1	—	1	1	1	—	1	1	—	1	—	1	—
U.P.	58	58	4	—	4	3	3	2	1	1	3	1	—	3	1
NCR	94	87	20	—	20	11	16	12	6	8	4	16	5	7	9

Sources: State Departments/DWS and SDU.

ii) Storm Water Drainage

Storm water drainage exists in 50 out of 87 towns. Only in two urban centres namely Delhi and Meerut, the system is reported to cover the entire area wherein in all other cases, the coverage is partial. Only in 6 towns, the storm water joins sewage in the drain or sewer. Except a part of Delhi, the drains are open. The disposal of storm water is invariably unplanned and is allowed to flow its natural way on land, to depressions, ponds and drains. Only in three cases of Delhi, Sonapat and Hassanpur, the storm water is used for irrigation purposes.

Position of Storm water drainage: 1986

Sub-region/ NCR	No. of towns 1981	Info. avail- able	Drainage			Type			Disposal			
			Yes	Comp.	Part	Comb	Open	Cove- red	Drains/ sever	on Land	Irrigate	Others
Delhi	6	1	1	1	—	—	1	1	—	—	1	—
Haryana	27	27	15	—	15	9	13	2	7	2	2	4
Rajasthan	3	1	1	—	1	—	1	—	1	—	—	—
U.P.	58	58	33	1	32	1	32	—	—	31	—	2
NCR	94	87	50	2	48	10	47	—	—	33	3	6

Sources: State Departments/DWS and SDU

iii) Solid Waste Management

Out of the 47 towns, solid waste is managed only in 29 towns that too partly. The solidwastes are

dumped in pits and depressions in many towns. Only in Delhi and Rohtak, part of their solidwastes are composted. The 'land fill' practice in all except to some extent in Delhi, is not fully scientific; it is open dumping on the land, and in majority of the cases, at the outskirts of the towns.

Solidwaste Management: 1986

Sub-Region/NCR	No. of towns	Info. available for	Solidwaste managed in	Type of disposal			
				Comp.	Sanitary refill	Land fill	Open dumping
Delhi	6	1	1	1	1	—	1
Haryana	27	26	13	1	—	8	4
Rajasthan	3	1	1	—	—	—	1
U.P.	58	19	14	—	—	11	3
NCR	94	47	29	32	—	19	8

Sources: State Departments/NDMC.

iv) Sanitation in big urban centres

The situation of sanitary measures in the large urban centres — Class I and Class II of the Region is no better. One of the Class I cities viz. Bulandshahr and two Class II towns viz. Modinagar and Khurja do not have a sewerage system. In other urban centres, including the National Capital, the coverage is partial. Population coverage by the sewerage system varies from 14% in Alwar to 92% in Delhi. In most of the urban centres, the water-borne system is supplemented by sanitary latrines, septic tanks and privy pits. The sewage is treated that too partly only in the urban areas. The treatment is restricted to primary treatment in all the places. The disposal of the raw as well as treated sewage is through the drains/sewers in three urban centres, and in the rest of the towns, it is let out on land or used for irrigation purposes. Statement at Annexure V gives the position of urban sanitation in the Region as of 1986-87.

Table 8.2. gives the status of sanitation as of 1986-87 in the Region.

8.3 Rural Water Supply

The water supply position in the rural areas of the Region presents a very dismal picture. Nearly 50% of the Region's population live in its rural tracts. Many villages do not have adequate sources of water supply. Out of the 6677 villages in the Region, according to 1981 Census, information is not readily available for many villages as their sources of supply are not known. From the information gathered for 4367 villages in the Haryana and the Uttar Pradesh Sub-regions, piped water supply, a form of protected and organised water supply system exists only in 549 villages, that too all in the Haryana Sub-region. The main sources of water supply are canals, wells in the Haryana Sub-region, whereas handpumps are invariably resorted to in the villages of Uttar Pradesh Sub-region.

Scarcity and bad quality of water are the major problems in the villages. Nearly 45 to 50% of the villages suffer for want of adequate quantity and quality of water. Scarcity villages account for about 40% whereas the villages with brackish water sources account for another 5.7%. There are a number of villages which do not have any sources of water supply within them. They are reported to be only in the Haryana Sub-region. In fact, the problem villages are more in proportion—about two-thirds of the total in the Haryana area, and nearly one-half in the Uttar Pradesh Sub-region (Table 8.3)

8.4 Rural Sanitation

In none of the villages, a system to take care of its sanitation is reported to exist.

Table 8.2 : Sanitation in Class I and II Urban Areas in the NCR — 1986

Sewerage										Drainage			Solid waste			
Urban Area	Availa- bility Yes/No	Cove- rage full/ Part	Type combd/ Separate	Popul. cove- age %	Vol.of sewage mld	Units of system	Treat- ment	Dispo sal	Annual cost Rs. in Lakhs	Availa- bility Yes/No	Cover- age full/ part	Type Combd/ Separate	Disposal irrign. Drains in lakhs others Rs.	Solid waste Availability Yes/No	Disposal Annual cost in lakhs Rs.	
CLASS I																
1. Delhi	Yes	Part	Combd	91.8	1467	WB	Partly	Irrign SWD	4275.35	Yes	full	Separate Open covered	Irrign. SWD	Yes Partly	Dumping sanit refilling	N.A.
2. Faridabad Ballabhgarh	Yes	Part	Combd	51.6	N.A	WB,SL	— drains	Channel	8.44	Yes	Part	S.O.	Drains, Sewer	—	—	—
3. Rohtak	Yes	Part	Separate	50	12.82	WB	No	Irrign.	12.00	Yes	Part	C.O	River	Yes	Dumping	N.A
4. Panipat	Yes	Part	Combd	43.5	6.92	WB,SL,ST	No	On Land	N.A.	Yes	Part	C.O.	Irrign.	N.A.	Yes	Dumping
5. Sonapat	Yes	Part	Separate	80	2.5	WB,SL,ST	No	Drain	2.97	Yes	Part	SCO	Sewer	Yes	Dumping	1.00
6. Gurgaon	Yes	Part	Combd	65	2.5	WB,SL	No	On Land	N.A.	No	—	—	—	No	—	—
7. Alwar	Yes	Part	Combd	13.8	700	WB,ST,O	No	On Land	0.50	Yes	Part	C.O	Drains	Yes	Dumping	2.50
8. Meerut	Yes	Part	Combd	47.9	N.A.	WB,SL,ST	Primary	Irrign	15.52	Yes	Full	C.O.	River	Yes	Land fill	N.A
9. Ghaziabad	Yes	Part	Combd	45.3	40	N.A.	Primary	Irrign	18.00	Yes	Part	C.O.	River	Yes	Dumping	N.A
10. Bulandshahr	No	—	—	—	—	—	Primary	—	—	Yes	Part	O	Depres- sion	Yes	Land fill	N.A
11. Hapur	Yes	Part	Combd	25.3	9	WB,SL	No	Irrign.	2.94	Yes	Part	C.O.	Drain	N.A.	—	—
CLASS II																
1. Rewari	Yes	Part	Separate	60	3.5	WB,SL,ST,O	No	Irrign.	0.70	Yes	Part	C.O	Drain	Yes	Land fill	0.156
2. Modinagar	No	—	—	—	—	—	—	—	—	Yes	Part	O	Natural	Yes	Dumping	N.A.
3. Khurja	No	—	—	—	—	—	—	—	—	Yes	Part	—O	Depres- sion	Yes	Land fill	N.A

Keys: Sewerage—WB: Water Borne; SL: Sanitary Latrines; ST: Septic Tank; O: Others;
Drainage—s: Separate; c: Combined; O: Open
N.A.— Not available

Table 8.3 Rural Water Supply and Sanitation

Sub-Region/ Tehsil	No. of Villages	No. Served by				Problem Villages			No. of villages with sewerage	Type & Coverage
		Canals	Wells	HP	PWS	Scarcity (Water)	Bad quality	No. local source		
1	2	3	4	5	6	7	8	9	10	11
I. DELHI UT										
1. Delhi	Not available									
II. HARYANA										
1. Bahadurgarh	92	90	2	—	—	—	5	—	—	—
2. Jhajjar	231	74	100	6	—	—	21	—	—	—
3. Rewari	346	—	346	—	346	37	—	309	—	—
4. Maham	30	24	—	—	24	—	8	—	—	—
5. Rohtak	103	45	—	—	45	—	42	—	—	—
6. Sonapat	215	53	13	49	66	117	—	—	—	—
7. Panipat	167	47	120	—	68	84	123	39	—	—
Sub-Total	1184	333	581	55	549	238	199	348	—	—
III. RAJASTHAN										
8. Alwar (District)	1540	—	152	1293	319	42	—	—	—	—
IV. UTTAR PRADESH										
9. Meerut	268	—	—	45	—	71	—	—	—	—
10. Mawana	305	—	—	13	—	9	—	—	—	—
11. Baghpat	231	—	—	9	—	29	4	—	—	—
12. Sardhana	212	—	—	15	—	84	—	—	—	—
13. Ghaziabad	167	—	—	107	—	59	—	—	—	—
14. Hapur	232	—	—	128	—	93	—	—	—	—
15. Dadri	155	—	—	25	—	42	32	—	—	—
16. Garmukteshwar	153	—	—	53	—	45	—	—	—	—
17. Bulandshahr	404	—	—	105	—	359	3	—	—	—
18. Khurja	370	—	—	100	—	241	3	—	—	—
19. Anupsagar	420	—	—	74	—	299	—	—	—	—
20. Sikandrabad	266	—	—	63	—	147	—	—	—	—
	3183			737		1478	42	348	—	—

Sources: 1. PHDs of Rajasthan and Haryana
2. UP Jal Nigam

8.5 Policies and Proposals for provision of Civic Services

A. Water Supply

i) Norms—Urban

In view of the target of achieving a balanced and harmoniously developed region accommodating some extra population that would otherwise be flowing into Delhi, the standards and norms to be employed in the planning process should be uniform for the entire Region whether for urban or rural

sector. The towns falling in Delhi Metropolitan Area namely Faridabad, Ballabhgarh, Gurgaon, Ghaziabad, NOIDA and Loni being contiguous to Delhi will have the same norms as that of Delhi. In addition, the eight towns and complexes identified for induced development on priority basis namely Meerut, Hapur, Bulandshahr—Khurja, Palwal, Alwar, Rewari—Dharuhera—Bhiwadi, Rohtak and Panipat which are planned to absorb 20 lakhs and add population that would otherwise be moving towards Delhi should also be provided with such norms of supply that would be comparable to that of Delhi in order to vest them with the power of attraction and pull that Delhi wields today.

In fixing the norms, two needs are to be safeguarded:

- i. minimum level of water supply that should be expected to be achieved, and
- ii. the minimum in the accepted range of norms which should be possible depending on the local conditions and resources. The norms to be adopted are proposed as follows:

Urban centres with population		Norms to be achieved in lpcd
1)	5 lakhs and above	275
2)	2 to 5 lakhs	225
3)	1 to 2 lakhs	100 minimum
4)	For the DMA towns and priority towns, the starting point should 225 lpcd (50 gpcd) with the target of achieving 360 lpcd by 2001. The requirements should be graded according to the size of the projected population of the concerned urban centre. In four towns viz. Rewari, Palwal, Dharuhera and Bhiwadi, where water scarcity is experienced as a chronic problem, minimum of 225 lpcd (50 gpcd) may be taken as the target to be achieved.	
5)	In no urban centre, the norm should be less than 100 lpcd which is the minimum technical requirement.	

In designing the new system or in augmenting the existing system of water supply, sewerage system should be taken simultaneously as an integrated part of one total system, and the sewer lines should be laid as the water supply trunks are laid. During the Sixth and Seventh plans, for want of such action, there were more cases of water pollution seriously affecting the hygiene of the environment in many urban areas.

ii) Norms—Rural

A minimum norm of 70 lpcd including a supply of 30 lpcd for cattle is proposed for rural areas. If independent connections are given, a minimum of 100 lpcd is advised. Spot sources may supply a minimum of 40 lpcd which can be used to supplement the piped supply.

iii) Targets

In view of the low levels of coverage in water supply, the targets which have been agreed to by the Govt. of India under the International Drinking Water Supply and Sanitation Decade 1981-1990 programmes to be achieved by March, 1991 are reproduced as under:

	Coverage	Level of Service
Urban Water Supply	100%	Piped water supplies in all communities, where feasible; Demand range 70-250 lpcd; average 140 lpcd. Stand posts in fringe areas, if necessary at strategic localities; average 40 lpcd.

Rural Water Supply	100%	Piped water supplies for 30% of the population; demand range 25-70 lpcd; average 40 lpcd; spot source water supplies for 70% of the population in the form of dug or tubewells with handpumps and/or power pumps; average demand 40 lpcd.
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It is proposed that in all towns other than DMA and priority towns, and all rural areas, the foregoing targets to be achieved by 1991.

B. Sanitation

i) Urban

In regard to sanitation, the situation is quite different and much more serious in terms of reaching each individual or family with adequate sanitary facilities. Urban sanitation services to the population residing in urban areas are more manageable from a project view point and can be provided with these services on a community or groupwise basis. Though, for want of adequate resources and materials, low cost sanitation can be thought of, it should be taken into a proper sanitation system subsequently. This is mainly because of the fact, that 'one litre' per flush which is the mainstay of the low cost sanitation, will hardly suffice to cause the flowing in the sewers besides it being insufficient to take care of the drainage requirements. There should be therefore, adequate drainage facility and open drains, which are by and large the sources of nuisance and pollution should be discouraged and discontinued. Wherever handpumps are used for supplying water, they should be supplemented in stages by organised water supply so that the flow of sewage is adequately achieved. In many towns sewage is not treated and sewage farming is widely practised which could be harmful and hazardous to human health. Sewage should, therefore, be treated to bring the pollutant level to permissible limits, as stipulated by the Indian Standards Institution, and Pollution Control Boards irrespective of the type of disposal of the sewage.

To begin with, all the DMA and priority towns should be fully provided with sewerage and sewerage treatment facilities. The storm water drains should, be covered and should be separate from the sewerage system.

ii) Rural

The rural sanitation has not been given enough attention so far. The rural areas, where piped water is supplied should be provided with sewerage system with treatment facilities. The sewerage should be taken separate from drainage channels. Low cost sanitation measures should be resorted to in villages with hand-pumps for water supply. Such villages should subsequently be supplemented by piped water supply and sewerage system should be taken up. As far as possible, the sewage should be recycled after treatment for using it for gardens, fire fighting, parks and lawns, street washing, cooling etc.

In this regard, it is proposed to achieve the targets as suggested and accepted by the Govt. of India under the International Drinking Water Supply and Sanitation Decade 1981-1990, which are reproduced as follows:

	Coverage	Level of Service
Urban Sanitation	80%	100% coverage for Class-I cities with sewerage and sewerage treatment facilities, low cost sanitation methods in other towns. Overall coverage of 80% in all cities and towns.
Rural Sanitation	25%	Low cost sanitary methods of disposal.

C. Solid Waste Management

Solidwaste management is an important area which deserves serious attention of the authorities concerned. The neglect of management of solidwastes is found to be harmful, besides causing recurring loss to the local bodies and authorities. Solid waste disposal and management should be planned for a minimum of 20 years and at least 'controlled tipping' should be adopted in dumping the solid waste.

Even if a compost plant is installed to manage the solid wastes, nearly 50% of the wastes will have to be dumped. Compost is a solid stabiliser and proper composting yields a good fertiliser which is in great demand. Incineration of the garbage is not advisable. Areas should be identified in all the towns for sanitary refill and all the towns above one lakh population should have a solid waste management arrangement. It should be done in the same way as in the case of material handling project.

D. Environmental Protection

Non-treatment of water and sewage give rise to environmental problems. Solid waste management plays a vital role in containing the pollution of ground water as well as atmosphere. Scientific sanitary land-fill measures may play an important role in protecting the environment. The areas for dumping of solid waste/garbage may have to be identified while preparing the development plans for each urban centre in advance, so that the Municipal Authorities responsible for solid waste management may utilise such pre-identified locations for disposal of garbage. The derelict lands, on account of brick kilns and quarrying may be suitable locations for such operations.

It is suggested that, particularly in the DMA towns and priority towns, physical infrastructure like sewerage and drainage should be integrated and, an integrated plan should be prepared for them.

E. Policies

i) Water Supply

a) Urban

Majority of the households in urban centres who can afford and wherever possible be provided with house connections, whereas for the economically weaker sections, standposts may be provided at strategic locations. The urban centres which are not having organised/protected water supply system so far should be accorded the foremost priority alongwith the DMA and priority towns. In some of the urban areas, the existing water supply network is old and wornout, and it causes heavy leakages besides being grossly inadequate to cope with the present demand which is beyond its design capacity. This needs special attention for it being rehabilitated with some investment. This will considerably reduce maintenance and operation cost.

b) Rural

More than half of the Region lies in rural areas. There is a wide backlog in the provision of drinking water to the rural areas. This sector, therefore, deserves the highest priority particularly in regard to the villages with problems such as scarcity, bad quality of water, non-availability of local sources etc.. The pattern of coverage to be adopted would be to provide at least 25% by 1991 and 50% by 2001 of the rural population with piped/protected water supply and the rest through spot sources. Different approaches will be necessary due to problems of site location. In hilly areas, as in the south western part of the Region, preference has to be given to gravity system, so that the overdependence on power supply is reduced to minimise operation and maintenance costs. Wherever possible, devices such as hydraulic rams could be employed for lifting water for small rural communities. In areas where the quality of water is affected by excess flourides and other toxic substances, reduced per capita requirement may have to be adopted.

ii) Sanitation

a) Urban

All Class I cities, DMA and priority towns should be provided with sewerage and sewage treatment facilities. However, in the fringe areas of the cities and other urban centres, low cost sanitation measures may be adopted to start with, to be replaced by regular sewerage system subsequently.

b) Rural

Simple sanitary latrines, septic tanks and pit privies could be adopted in rural areas. Different versions of these devices to suit the local conditions have been brought out by the National Engineering and Environmental Research Institute, Nagpur.

iii) General

Water supply and sanitation should be taken as an integrated project and the water supply and sewer lines should be kept sufficiently away from each other to avoid difficulty in execution and subsequent repairs and also possible pollution in case of leakage of sewer lines. Sewerage and drainage should be separate where the average annual rainfall exceeds 75cm. The sewage should invariably be treated to safe limits before it is let off into water bodies or for farming purposes. The waste water should not be allowed to stagnate anywhere on land around human habitation. All the drains should be covered. In large towns the sewage treatment process should include units to obtain its byproducts such as cooking gas and manure from the sludge. Solidwastes should be properly managed and recycled to the extent possible to provide a healthy and living environment in the human settlements.

Availability of well developed social infrastructural facilities represents a key force in the developmental process and acts as a major influencing factor in fostering wide ranging socio-economic activities in any area. In the National Capital Region, educational and medical facilities constitute the basic socio-cultural infrastructure and provide the common links between the various Sub-regions for a more homogeneous and self-sustaining community life.

9.1 Evaluation of the Existing Facilities

1) Educational Facilities

According to the 1981 Census, the literacy rate in the Region (43.94%) is higher than the all India literacy rate (36.23%). When compared among the Sub-regions, Delhi UT (61.54%) has the highest literacy rate followed by the Haryana (33.58%), Uttar Pradesh (33.31%) and Rajasthan (30.24%) Sub-regions. The literacy rates in all the three Sub-regions are also higher than the literacy rates of the States of which they form the parts. The literacy rates in the urban areas follow the same trend except in the case of Uttar Pradesh Sub-region. The literacy rate in the rural areas of the Region (31.35%) is also higher than the all India figure (29.65%). However, rural literacy rates in Uttar Pradesh (29.02%) and Rajasthan (25.22%) Sub-regions are lower than that of the all India (29.65%) (Table-9.1).

Table 9.1 Literacy Rate in NCR 1981.

Area		Total	Male	Female
India	Total	36.23	46.89	24.81
	Rural	29.65	40.79	17.96
	Urban	57.40	65.83	47.82
A. Haryana State	Total	35.84	47.70	22.23
	Rural	29.95	42.87	15.34
	Urban	56.72	64.89	47.23
Haryana Sub-Region	Total	39.58	52.92	24.33
	Rural	33.63	40.33	17.00
	Urban	57.90	66.52	47.42
Rewari Tehsil	Total	43.49	52.26	26.64
	Rural	40.59	57.36	22.86
	Urban	59.70	69.56	40.68
Bawal Tehsil	Total	32.92	53.11	17.56
	Rural	34.33	51.98	15.59
	Urban	48.64	61.95	33.77
Gurgaon District	Total	34.66	47.72	20.09
	Rural	20.39	42.33	12.92
	Urban	59.58	68.79	49.03

Table 9.1 Literacy Rate in NCR 1981. (Contd.)

Area		Total	Male	Female
Faridabad Distt.	total	39.11	52.34	22.86
	Rural	27.61	43.37	9.13
	Urban	55.95	64.92	44.18
Rothak District	Total	42.03	55.61	26.97
	Rural	37.61	52.26	21.48
	Urban	59.67	68.70	49.33
Sonapat District	Total	40.64	54.05	25.22
	Rural	36.55	51.03	19.97
	Urban	59.25	67.62	49.43
Panipat Tehsil	Total	38.32	49.58	25.10
	Rural	29.92	43.24	14.17
	Urban	56.63	63.59	46.60
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B. Uttar Pradesh State	Total	27.16	38.76	14.04
	Rural	23.06	35.18	9.49
	Urban	45.88	54.73	35.43
Uttar Pradesh Sub-Region	Total	33.31	43.96	18.32
	Rural	29.02	42.96	12.47
	Urban	43.26	52.40	32.49
Meerut District	Total	34.68	46.73	20.30
	Rural	30.91	43.41	13.89
	Urban	49.97	54.14	34.23
Ghaziabad Distt.	Total	36.28	48.68	21.32
	Rural	29.76	43.48	13.33
	urban	48.85	58.64	36.91
Bulandshahr Distt	Total	28.97	42.47	13.34
	Rural	27.29	42.00	10.19
	Urban	35.96	44.42	26.34
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C. Rajasthan State	Total	24.38	36.30	11.41
	Rural	17.99	29.65	5.46
	Urban	48.35	60.55	34.45
Rajsthan Sub-Region	Total	30.24	42.24	12.56
	Rural	25.22	38.57	9.05
	Urban	55.92	60.38	34.54
Behror Tehsil	Total	31.90	49.81	12.86
	Rural	31.90	49.81	12.86
	Urban	—	—	—
Mandawar Tehsil	Total	28.96	46.07	10.37
	Rural	28.96	46.07	10.37
	Urban	—	—	—
Kishangarh Tehsil	Total	28.10	42.12	12.54
	Rural	25.94	40.23	10.12
	Urban	48.42	58.81	36.19
Tijara Tehsil	Total	20.58	32.67	6.98
	Rural	18.69	30.62	5.25
	Urban	38.75	52.54	23.47
Alwar Tehsil	Total	37.97	49.97	23.93
	Rural	20.23	31.93	7.01
	Urban	58.14	69.81	43.95
Ramgarh Tehsil	Total	21.41	32.80	8.70
	Rural	21.41	32.80	8.70
	Urban	—	—	—
<hr/>				
D. Delhi U.T.	Total	61.54	68.40	53.07
	Rural	47.56	57.79	32.08
	Urban	62.64	69.05	54.71

Table 9.1 Literacy Rate in NCR-1981. (Contd.)

Area		Total	Male	Female
National Capital Region	Total	43.94	55.12	30.64
	Rural	31.35	45.66	14.69
	Urban	57.91	65.40	48.79

Source: Census of India, 1981

When evaluated from the point of view of availability of educational facilities in the rural areas on the basis of the two indicators viz. proportion of villages having one or more of the educational facilities and the proportion of rural population served by educational facilities, Haryana rural population is better served with educational facilities with 90.38% villages having one or more of the educational facilities and 97.26% of the rural population having thereby been served by education facilities. The status of the other two Sub-regions viz. Uttar Pradesh and Rajasthan, as far as availability of facilities is concerned, is more or less the same. (Table 9.2)

Table 9.2 Educational Facilities in Rural Areas of NCR

S.No.	Name of the District	Proportion of villages having one or more of the educational facilities.	Proportion of Rural population served by educational facilities
1.	Meerut	N.A	N.A
2.	Balandshahr	68.79	84.97
3.	Ghaziabad	77.56	92.90
A.	U.P. Sub-region	N.A.	N.A.
1.	Faridabad	86.35	96.61
2.	Sonepat	94.86	98.17
3.	Gurgaon	79.35	94.00
4.	Rohtak	96.12	99.21
5.	Panipat Tehsil	95.21	98.86
6.	Rewari Tehsil	90.81	96.80
7.	Bawal Tehsil	90.00	97.19
B.	Haryana Sub-region	90.38	97.26
1.	Behror Tehsil	91.01	98.32
2.	Mandawar Tehsil	86.57	95.34
3.	Kishangarh Bas Tehsil	64.19	85.89
4.	Tijara Tehsil	54.31	81.16
5.	Alwar Tehsil	63.82	82.79
6.	Ramgarh Tehsil	69.48	96.04
C	Rajasthan Sub-region	69.66	89.90

Source: Census of India-1981.

Table 9.3 Educational Institutions in Delhi 1984-85

S.No.	Facilities	No.
1.	Universities	2
2.	Institutions Deemed as Universities	3
3.	Institutions of National Importance	2
4.	Research Institutions	1
5.	Colleges	77
a.	Colleges for General Education	52
b.	Colleges for Professional and Technical Education	13
c.	Colleges for Oriental Studies	12
6.	Under Graduate Colleges (Intermediate/Pre-professional standard)	29
7.	Higher Secondary Schools	817
8.	Middle Schools	345
9.	Primary Schools	1771
10.	Pre-primary Schools	49
11.	Schools for Vocational and Technical Education	3
12.	Schools for Special and other Education	1536

Source: Delhi Statistical Hand Book — 1986.

In terms of total number of lower and higher educational and research facilities, Delhi is provided with best available facilities in the Country (Table-9.3). Besides two Universities, availability of a large number of professional as well as other educational institutions attract large number of students from all parts of the Country and abroad. The availability of educational facilities in terms of the area and population served shows that the Sub-regions lack in higher educational facilities, specially in professional and research institutions (Table-9.4).

Table 9.4 Educational Facilities in NCR 1985-86

Sl. No.	Sub-Region Dist/Tehsil	NO. of Primary Schools	NO. of Middle Schools	No of High/ Higher Sec. Schools/ Inter Colleges	Total Schools	P.G. Colle- ges	Degree Colleges	Profes- sional Col- leges	Total Colle- ges
1.	Rohtak	282	101	247	630	1	13	3	17
2.	Gurgoan	518	73	128	719	1	7	1	9
3.	Sonepat	201	68	163	432	1	4	3	8
4.	Faridabad	397	73	143	613	1	5	-	6
5.	Rewari Tehsil	143	56	58	257	-	4	-	4
6.	Panipat Tehsil	140	18	54	212	-	4	2	6
	Haryana Sub-Region	1681	389	793	2863	4	37	9	50
7.	Ghaziabad	872	178	120	1170	-	-	-	13
8.	Meerut	1530	345	210	2085	-	-	-	19

Table 9.4 (Contd.)

Sl. No.	Sub-Region Dist/Tehsil	NO. of Primary Schools	NO. of Middle Schools	No of High/ Higher Sec. Schools/ Inter Colleges	Total Schools	P.G. Colle- ges	Degree Colleges	Profes- sional Col- leges	Total Colle- ges
9.	Bulandshahr	1290	159	179	1628	-	-	-	10
	U.P. Sub- Region	3692	682	509	4883	-	-	-	42
10.	Rajasthan Sub-Region	1234	298	130	1662	(Degree + PG)		6	6
									12

Source : District Statistical Hand Book & Statistical Abstract.

2) Medical Facilities

The evaluation of availability of medical facilities in the urban areas of the districts of the three Sub-regions, on the basis of availability of number of beds per thousand population reveals that Rohtak district (5) in Haryana Sub-region, Meerut district (1.50), in Uttar Pradesh Sub-region and Alwar district (2.59) of which three towns fall in Rajasthan Sub-region, are provided with fair amount of bed facilities whereas in the other districts of the Sub-regions, this facility is sparsely available. In Delhi, the number of beds per thousand population is 2.50 (Table 9.5).

Table 9.5 Level of Distribution of Medical Facilities in the Urban Areas of NCR

S. No.	Name of Sub-region/ District/Tehsil.	Number of beds in Medical Institutions per 1000 Population.
1.	Haryana Sub-region	
	1. Faridabad	1.00
	2. Gurgaon	1.00
	3. Rohtak	5.00
	4. Sonapat	1.00
	5. Panipat Tehsil	1.00
	6. Rewari Tehsil	1.00
	7. Bawal Tehsil	1.00
2.	Uttar Pradesh Sub-region	
	1. Meerut	1.50
	2. Bulandshahr	1.24
	3. Ghaziabad	0.39
3.	Rajasthan Sub-region	
	1. Alwar	2.59

Source : Census of India – 1981.

As regards availability of medical facilities in the rural areas, the Haryana Sub-region with the proportions of rural population served and villages having medical facilities being respectively 77.62% and 61.00% ranks higher than the other Sub-regions followed by Uttar Pradesh and Rajasthan areas. In general, the rural parts of the Sub-regions lack in medical facilities and, particularly in Rajasthan and Uttar Pradesh Sub-regions, the availability is very low (Table 9.6).

Table 9.6 : Medical Facilities in the Rural Areas of NCR

S.No.	Name of the District/Tehsil	Proportion of Rural population served by Medical Facilities	Proportion of Villages having Medical Facilities
1.	Meerut	N.A.	N.A.
2.	Bulandshahr	34.64	23.00
3.	Ghaziabad	38.11	27.13
A.	U.P. Sub-region	N.A.	N.A.
1.	Faridabad	74.35	55.06
2.	Sonepat	78.89	63.75
3.	Gurgaon	63.27	40.86
4.	Rohtak	90.58	78.31
5.	Panipat Tehsil	68.64	51.50
6.	Rewari Tehsil	80.61	66.25
7.	Bawal Tehsil	86.98	71.32
B.	Haryana Sub-region	77.62	61.00
1.	Behror Tehsil	51.22	30.16
2.	Mandawar Tehsil	56.71	22.39
3.	Kishangarh Bas Tehsil	33.73	11.63
4.	Tijara Tehsil	25.58	11.17
5.	Alwar Tehsil	33.33	18.09
6.	Ramgarh Tehsil	37.06	15.58
C.	Rajasthan Sub-region	39.61	18.17

Source : Census of India - 1981

Delhi being the National Capital and the third largest city of India, has an advantage of possessing large number of medical institutions with best specialisation in almost all the fields, available in the Country as given below. The medical facilities in the three Sub-regions of Haryana, Rajasthan and Uttar Pradesh lack in specialised facilities and, also looking at the vast hinterland served by them, they also lack in availability of general medical facilities (Table 9.7).

Medical Facilities in Delhi 1985 :

Facility	Nos.
1. Hospitals	71
(a) General	39
(b) Special	24

Medical Facilities in Delhi 1985 : (Contd.)

	Facility	Nos.
	(c) Ayurvedic	5
	(d) Unani	2
	(e) Homoeopathic	1
2.	Clinics	125
3.	Poly-clinics	10
4.	Dispensaries	550
	(a) General	370
	(b) Ayurvedic	92
	(c) Unani	15
	(d) Homoeopathic	73
5.	Maternity and Child Welfare Centres.	157
6.	Primary Health Centres	8
7.	Beds in Hospitals and Clinics	16758

Source : Delhi Statistical Hand Book — 1986

Table 9.7 Type of Medical Facilities in NCR 1985-86

Sl. No.	Sub-Region/District Tehsil	No. of Hospitals/Dispensaries	No. of Primary Health Centres	No. of family & Child Welfare Centres/Clinics	No. of Ayurvedic Institutions	No. of Unani Institutions	No. of Homoeopathic Institutions	No. of Beds
1.	Gurgaon	29	39	10	28	1	—	331
2.	Faridabad	54	21	9	21	3	—	750
3.	Rohtak	44	26	15	35	2	—	1777
4.	Sonepat	31	19	8	13	2	—	241
5.	Rewari Tehsil	11	6	1	N.A.	N.A.	N.A.	110
6.	Bawal Tehsil	2	1	—	N.A.	N.A.	N.A.	12
7.	Panipat Tehsil	14	4	1	N.A.	N.A.	N.A.	N.A.
	Haryana Sub-Region	185	116	44	97	8	—	3221
8.	Meerut	31	25	36	24	4	6	1815
9.	Bulandshahr	37	17	22	26	3	3	764
10.	Ghaziabad	32	10	15	14	—	7	715
	U.P. Sub-Region	100	52	73	64	7	16	3294
	Rajasthan Sub-Region	30	11	10	— 65 —	—	—	406

Source : Statistical Abstracts & District Statistical Handbooks.

9.2 Strategy for Development of Social Infrastructure in the Region

With the progress in economic development and the rise in living standards, provision of adequate social infrastructure at various levels assumes an added importance. The availability of job opportunities attracts the unemployed or the person who wants to have better job whereas availability of better social infrastructure viz. medical and educational facilities, to some extent is responsible for family movement, Delhi endowed with both resulting in large scale in-migration from the neighbouring areas.

In order to have a balanced development of the Region and to check large scale migration to Delhi from the neighbouring areas, besides providing job opportunities, provision of adequate level of social infra-structural facilities within a reasonably accessible distance will have to be made. The Regional centres which have been proposed in the Plan for the induced development are likely to attract larger section of the Delhi bound migrants and would be the main centres of attraction for the Sub-regional population as regards availability of higher order educational and medical facilities. Some of these regional centres viz. Meerut in Uttar Pradesh, Rohtak in Haryana and Alwar in Rajasthan Sub-regions, being the biggest towns or district headquarters are having some of the higher order educational and medical facilities, which at present not only cater to the needs of the local population but are also attracting the population from the neighbouring areas. The other regional centres proposed in the Plan do not at present have adequate medical and educational facilities which can cater to the needs of the population living in their hinterlands. In order to make these centres more attractive, augmentation of the educational and medical facilities, to be atleast comparable to that of Delhi, would be necessary. The facilities at these centres will have to be improved not only in terms of quantity but also quality. The medical and educational facilities in the Delhi Metropolitan Area towns are also proposed to be improved to make them comparable to those of Delhi. The improvement of these facilities in these towns will make them self-contained.

The distribution of the educational and medical facilities in the lower order settlements, viz. Sub-regional centres, Service centres and Basic villages, on equitable basis in the three Sub-regions will help to remove the Sub-regional imbalances in the Region. As the norms and standards followed in the Sub-regions are not uniform, keeping in view the existing norms in the Sub-regions and the norms prescribed by the Central Government, the Plan proposes specific norms for the location of education and medical facilities in the urban and rural areas of the Region (Table 9.8). Special efforts will have to be made by the State Governments to achieve their norms till 2001 by also making special provision, wherever necessary. Incentives in the shape of free land or on concessional rates, along with financial assistance for construction of buildings should be considered by them to attract philanthropists and premier educational and medical institutions in the Country to set-up their branches in the Region.

Table 9.8 Norms and Standards for Location of Educational and Medical Facilities

Sl. No.	Type of facility	Norms proposed	
		Rural	Urban
A.	Education		
1.	Nursery School	one in each village	one for 2,500 population
2.	Primary School (including classes upto VIII standard)	one in each village	one for 5,000 population
3.	Higher Secondary	one in each village with population 10-15 thousand	one for each town with 10-15 thousand population.
4.	College	—	one for each town with 80,000- 1,00,000 population
B.	Medical	Rural/Urban	
1.	Sub-Centre	one for 5,000 population	
2.	Primary Health Centre	one for 30,000 population	
3.	Community Health Centre with four basic specialisations	one for 1,00,000 population	

The NCR Planning Board Act, 1985 empowers the Board to select, in consultation with the State Governments concerned, any urban area outside the NCR having regard to its location, population and potential for growth, which may be developed in order to achieve the objectives of the Regional Plan. As per 1981 Census, the major share of Delhi migrants were from Uttar Pradesh (48.2%), Haryana (15.5%), Rajasthan (7.6%), Punjab (9.8%), Madhya Pradesh (2.4%) and as such the countermagnets would need to be located in these States to meet the NCR objectives. Accordingly, a Study has been entrusted by the NCR Planning Board to a professional institution* to identify the towns to be developed under the counter-magnet concept.

The concept of counter magnet areas and the approach proposed to be adopted for identification of counter-magnet areas would be as follows:

10.1 Concept of Counter-magnet

Counter-magnet areas to Delhi should be located sufficiently away from the NCR and should have its known established roots and inherent potentials to function as viable **independent growth focii**. Such identified counter magnets would have the attributes of physical, social and economic viability; nodality with respect to transportation network and will have the quality of physical linkages in the form of facilities for transportation and communication.

10.2 Approach to Identification of Counter-magnets

In addition to the attributes to the individual cities to be a Counter-magnet to Delhi, the following factors would need to be analysed for identification:

(a) Nodality considerations

The Counter-magnet areas are expected to maintain certain amount of complementarity in respect of metropolitan functions with Delhi and the NCR and as such, a range of 250-300 km from the NCR boundary or 350-400 km from Delhi representing 6 hours journey time at the present transport conditions should enable interaction between chosen counter-magnet and the metropolitan core, without impairing its developmental autonomy and functional identity as a regional growth centre. However, these distances for search zones would be only a broad guideline and, the search would be extended to the entire constituent States in view of the likely technology improvement in the transport sector specially along the major transport corridors. To avoid overlapping of influence zones, such identified centres would be spaced atleast about 60 km apart.

(b) Spatial considerations

To infuse complementarity to spatial pattern, size and functional specification of priority towns designated and their linkages outside the NCR, particularly in the search zones to identify for linking possible counter-magnets, spatial considerations would be imperative.

*School of Planning and Architecture, New Delhi.

(c) Size and viability considerations

Studies have established that a city of around 3 lakh population is an established urban centre having a distinct service area, basic level of social and economic infrastructure with a diversified economic base. Therefore, counter magnets will be selected generally amongst the towns having population size of about 3,00,000 and upwards in 1981. While this would be only a general guideline, emphasis would be location specific.

(d) Migration considerations

By and large, the location of counter-magnets may be guided from the consideration of higher rate of migration-flow in district or a group of districts of a State.

10.3 Search Zone

Having due regard to the above considerations, a list of 36 urban centres in the neighbouring States of Uttar Pradesh, Haryana, Rajasthan, Punjab and Madhya Pradesh has been prepared (Table 10.1) for screening and a comprehensive quantitative as well as qualitative assessment of development potential and sensitivity in order to arrive at a final selection of urban centres for development as counter-magnet areas. To screen the list of 36 urban centres, the following methodology will be followed:

(i) Criterion of relatively wide physical-locational spread of the proposed counter-magnets:

It is considered imperative that the proposed counter-magnet should be so located around the NCR that the likely influence zones of the NCR in the next 20 years should at best coalesce but not overlap.

(ii) Specific criterion

The following 5 specific criteria would be adopted:

- a) Accessibility and linkages;
- b) Population size and growth;
- c) Administrative base;
- d) Production base;
- e) Growth impulse.

However, certain types of urban centres would not be considered as counter-magnets because of their special significance and characteristics. Such centres could be:

- a) Urban centres of known religious and cultural importance;
- b) Urban centres of strategic importance from the point of view of defence; and
- c) Ecological sensitive urban centres.

Evaluation on the assessment based on quantitative and qualitative indicators would lead to identification of a few urban centres finally. A discussion will be held with the State Government before finalising the location of counter-magnet areas.

Table 10.1 Search Zone Delineation for Counter-magnet Study

State	Population 1981			
	Class I (100,000 Population and above)			
	5 Lakhs and above	3 to below 5 lakhs	2 to below 3 lakhs	1 to below 2 lakhs
Uttar Pradesh	1. Kanpur	4. Bareilly	7. Saharanpur	14. Mathura
	2. Agra	5. Moradabad	8. Dehradun	15. Farukhabad
	3. Allahabad	6. Aligarh	9. Jhansi	16. Haridwar
			10. Shahjahanpur	17. Amroha
			11. Rampur	18. Etawah
			12. Ferozabad	19. Sambhal
			20. Ambala	
				21. Yamunanagar
				22. Hissar
				23. Karnal
				24. Bhiwani
				29. Ganganagar
Rajasthan	25. Jaipur	26. Ajmer	28. Bikaner	30. Bharatpur
		27. Kota		31. Sikar
				35. Bhatinda
Punjab	32. Ludhiana		34. Patiala	
	33. Jalandhar			
Madhya Pradesh	36. Gwalior			

Land is a limited and non-renewable resource. With the tremendous increase in population, the pressure on land has been increasing rapidly. There is an increasing concern over the loss of primary agricultural land and the consequent environmental degradation. The NCR Plan aims at a harmoniously and balancedly developed region. Thus, there is an utmost need to optimise the use of land resources in the Region, through rational use of urban land, conservation of areas sensitive to developmental activities and evolving policies for the effective control of landuses.

11.1 Existing Regional Landuse Pattern

The existing landuse pattern (Map) of the Region has been analysed using the remotely sensed data i.e., landsat Satellite Imageries, Aerial Photographs and Survey of India Topographical sheets. Eight major landuse categories were evolved for landuse analyses. Morphology and surface drainage as interpreted from the satellite imageries are also made use of in the landuse analysis for the Region. The areal extent of the various landuses has been computed with the help of the Image Analyser (IA 3001 speak system HBD). The statistics on area put to non-agricultural use, i.e. settlements and transport network, culturable waste, permanent pastures and grazing lands, miscellaneous tree crops, and groves has been compiled from the government records, as these uses are not discernible on remotely sensed data of a particular time frame.

The entire National Capital Region, except in the Aravalli ridge in the south-west, is a fertile flat plain. The landuse analysis of the Region reveals that agriculture is the predominant user of land. The cultivated area constitutes about 80% of the total reporting area. Of the Region's total cultivated area, about 46% is concentrated in the Haryana Sub-region followed by the U.P. Sub-region (37.3%), while Delhi UT has the least of 3.7%. The land put to non-agricultural uses which comprise area under settlements, transport network, rivers, and canals, covers 9.9% of the total area. The Haryana Sub-region has the highest area of 128431 hectares under non-agricultural use which forms 43.3% of that of the Region followed by the UP Sub-region (38.7%) and the Delhi UT (12.1%) (Table 11.1). The occupation of highest area under this category in the Haryana and UP Sub-regions is mainly due to the large area occupied by the Ganga and Yamuna rivers with their tributaries and, concentration of the non-agricultural land while in Delhi it is owing to the urbanisation and industrial expansion.

The third important category is the 'barren land' which includes rocky area, saline patches, gullied land, derelict land and covers an area of 141677 hectares or 4.7% of the total reporting area of the Region. The highest concentration is in the Rajasthan Sub-region (39.8%) followed by the Haryana Sub-region (24.7%), the U.P. Sub-region (22.3%) and lastly Delhi UT (13.2%). According to land records, forest covers, a total area of 65222 hectares which forms 2.1% of the total area of the Region, and shows highest concentration in the Haryana Sub-region (52.2%), followed by the U.P. Sub-region (30.5%) and Rajasthan Sub-region (15.2%). The forest departments of the NCR States place the total area under forest as 153474 hectares, with a break-up of 55544 hectares under reserve forests, 31640 hectares under protected forests, 56202 hectares under unclassified forests and 10088 hectares under social forests. The satellite imageries, however show only 35557 hectares of land under forests. The satellite imageries includes only the compact forests under tree cover while records give the area under protected category also.

Table 11.1 Landuse in the NCR—1986-87 (Sub-regionwise Distribution)**(Area in Hectares)**

Category	Delhi	Haryana	Rajasthan	Uttar Pradesh	NCR	Proportion reported
1. Forest	1434 (2.2)	34000 (52.1)	9870 (15.2)	19918 (30.5)	65222 (100.00)	2.1
2. Land put to non-agricultural use	35820 (24.2)	128431 (43.3)	17398 (5.9)	114860 (38.7)	296509 (100.00)	9.9
3. Barren Land	18707 (13.2)	35000 (24.7)	56425 (39.8)	31545 (22.3)	141677 (100.00)	4.7
4. Water Bodies	329 (4.0)	3569 (42.9)	2407 (28.9)	2017 (24.2)	8323 (100.00)	0.28
5. Permanent pasture & Other grazing land	793 (3.0)	12000 (45.0)	11262 (42.3)	2593 (9.7)	26648 (100.00)	1.2
6. Land Under Misc tree crops and groves	1137 (24.0)	—	91 (1.9)	3512 (74.1)	4740 (100.00)	0.2
7. Culturable Waste	856 (1.5)	24000 (41.8)	7073 (12.2)	25555 (44.5)	57484 (100.00)	1.8
8. Cultivated Land	88411 (3.7)	1099000 (45.9)	314419 (13.1)	890288 (37.3)	2392118 (100.0)	79.9
Total Reporting Area	147487 (4.93)	1336000 (44.64)	418945 (14.00)	1090288 (36.43)	2992720 (100.00)	100

Figures in brackets indicate percentages to total of the NCR

Sources: Compiled from State Government records.

The category-wise distribution of forest areas (Table 11.2) reveals that out of the total forest area, about 51% is concentrated in the Rajasthan Sub-region followed by the Haryana Sub-region (28.5%), and the Uttar Pradesh Sub-region (19.4%). The Rajasthan Sub-region has the highest area under 'reserved forest' followed by the Uttar Pradesh Sub-region (29.4%). The protected forest, which includes plantation along roads, railway lines, canals and bunds, mainly, is concentrated in the Haryana Sub-region (65.9%) followed by the Rajasthan Sub-region (27.8). The U.P. Sub-region has a meagre area (6.2%) under protected forests.

Culturable waste land constitutes 57484 hectares of land which is 1.8% of the total Regional area. The U.P. Sub-region has the highest of 44.5% of the total area followed by the Haryana Sub-region (41.8%) under culturable wastes. Delhi has the least area of 1.5% of the total culturable waste land in the NCR. This category of land, viz. 'culturable waste' can be brought either under cultivation after reclamation or forests with some little efforts. The area under 'permanent pastures and other grazing land' which forms 1.2% of the total area of the Region is mainly concentrated in the Haryana (45.0%) and the Rajasthan Sub-regions (42.0%), while the land under 'miscellaneous tree crops and groves' is concentrated in the U.P. Sub-region.

i) Delhi UT

An analysis of the landuse pattern of Delhi UT reveals the high concentration of the land put to non-agricultural use to an extent of 24.2% of the total area. This is mainly because of urbanisation, industrialisation and transportation network. According to the land records, forest covers 1434 hectares which forms 1.0% of the total area (Table 11.3). The analysis based on satellite imageries shows that the actual total tree cover in the Delhi UT is 2678 hectares which forms 1.8%, i.e. additional area of 1244 hectares. The additional area reported through the satellite imageries, includes parks and other tree covers in Delhi.

Table 11.2 Distribution of Forest Area in NCR-1985

Sub-region	Total Reporting area	Total forest	Reserved forest	Protected forest	Unclassified forest	Social forest
Delhi UT	149788	1443 (0.9)	NA	NA	NA	NA
Uttar Pradesh	1075993	29455 (19.4)	16308 (29.4)	1995 (6.3)	1064 (1.9)	10088 (100.0)
Haryana	1334640	43815 (28.5)	7346 (13.2)	20850 (65.9)	15619 (27.8)	NA
Rajasthan	420348	78761 (51.3)	30447 (54.8)	8795 (27.8)	39519 (70.3)	NA
NCR	2980769	153474	55544	31640	56202	10088

Source: State Forest Departments & Delhi Administration

Note: Figures in brackets indicate percentages to total of the respective category of forest.

Table 11.3 Landuse Pattern of the NCR 1986-87

Sl. No.	Category	Based on Land records					Based on Satellite Imageries				
		Sub-Region					Sub-Region				
		Delhi	Haryana	Rajasthan	Uttar Pradesh	NCR	Delhi	Haryana	Rajasthan	Uttar Pradesh	NCR
1.	Forest	1434 (1.0)	34000 (2.5)	9870 (2.4)	19918 (1.8)	65222 (2.1)	2678 (1.8)	2075 (0.15)	19203 (4.27)	11601 (1.0)	35557 (1.2)
2.	Land put to non-agricultural use	35820 (24.2)	128431 (9.6)	17398 (4.2)	114860 (10.5)	296509 (9.9)	35820 (24.2)	128431 (9.6)	17398 (4.2)	114860 (10.5)	296509 (9.9)
3.	Barren Land	18707 (12.7)	35000 (2.6)	56425 (13.5)	31545 (2.9)	141677 (4.7)	11438 (7.7)	88044 (7.4)	58539 (13.0)	38217 (3.5)	196238 (6.5)
4.	Water Bodies	329 (0.22)	3569 (0.27)	2407 (0.54)	2017 (0.19)	8323 (0.28)	329 (0.22)	3569 (0.27)	2407 (0.54)	2017 (0.19)	8323 (0.28)
5.	Permanent pasture & Other grazing Land	793 (0.5)	1200 (0.9)	11262 (2.7)	2593 (0.2)	26648 (1.2)	793 (0.5)	12000 (0.9)	11262 (2.7)	2593 (0.2)	26648 (1.2)
6.	Land under Misc. tree crops & groves	1137 (0.8)	—	91 (0.02)	3512 (0.3)	4740 (0.2)	1137 (0.8)	—	91 (0.02)	3512 (0.3)	4740 (0.2)
7.	Culturable waste	856 (0.6)	24000 (1.8)	7073 (1.7)	25555 (2.4)	57484 (1.8)	856 (0.6)	24000 (1.8)	7073 (1.7)	25555 (2.4)	57484 (1.8)
8.	Cultivated Land	88411 (59.79)	1099000 (82.3)	314419 (73.1)	890288 (81.7)	2392118 (79.9)	95249 (64.2)	1083182 (80.7)	333256 (74.1)	88694 (81.3)	2398631 (79.3)
	Total Reporting Area	147487 (100.00)	1336000 (100.00)	41945 (100.00)	1090288 (100.00)	2992720 (100.00)	148300 (100.00)	1341299 (100.00)	449300 (100.00)	108298 (100.00)	3024211 (100.00)

Figures in brackets indicate percentages to total of the NCR

Source: Compiled from State Government Records and Satellite Imageries.

Barren land extends over 18707 hectares which forms 12.7% area of Delhi UT. This includes mainly the bare rocky area of the ridge. The interpretation of satellite imageries however, shows 11438 hectares under barren land i.e. 7269 hectares less area as barren, which has most probably been brought under tree cover and other uses. Cultivated area in Delhi UT, according to the records, constitutes 59.9% which is the least in the NCR. Satellite imageries indicate that 64.2% area is under actual cultivated land, which indicates possible utilisation of barren land including waste lands, for cultivation purposes. It may also be true that portions of forest area are converted into agricultural land.

ii) Haryana Sub-Region

In the Haryana Sub-region, 10.99% lakh hectares, constituting about 82% is under cultivation. Rohtak district has the highest concentration of cultivated land (87.0%) while Gurgaon is the least with 78.7% mainly due to its hilly terrain. The area under "land put to non-agricultural use" (9.6%) in the NCR is concentrated in Gurgaon (13.9%) and Faridabad districts (13.2%), due to concentration of urban settlements and well developed extensive transportation network. Rewari and Bawal tehsils together recorded 11.9% of their area under this category.

Barren land which forms the third largest land occupation is 2.6% of the total reporting area. According to the interpreted remotely sensed data, in the Haryana Sub-region, 7.4% of the area is under this category and is mainly concentrated in Gurgaon (17.9%) and Faridabad districts (7.6%) and Panipat tehsil (6.6%).

The high incidence of barren land in Gurgaon and Faridabad is mainly because of the presence of ridge area, where most of the area still remains uncovered and Panipat tehsil has the highest concentration of saline patches.

The records place the area under forest at 34,000 hectares or 2.5% of the reporting area, while remotely sensed data reports only 0.15% area under forest cover. In the remotely sensed data, forests along the roads, railway lines and canals have not been computed but includes only compact forest blocks discernible from the imageries. Culturable waste forms 1.8% of the total reporting area mainly concentrated in Sonapat (4.6%) and Rohtak districts (3.4%).

iii) Rajasthan Sub-Region

In the Rajasthan Sub-region, cultivated area constitutes 75.0% followed by barren land (13.5%) and land put to non-agricultural use (4.2%). Forest area, according to the records covers an area of 9870 hectares constituting 2.4% which includes mainly reserved forest. But the satellite imageries show the actual forest cover as 19203 hectares (4.27%) which includes other compact forest covers. The permanent pasture lands constitutes 2.7% of the total area in the Sub-region. The culturable waste covers 7073 hectares of land constituting 1.7% of the total area.

iv) U.P. Sub-Region

In the U.P. Sub-region, the cultivated land constitutes 81.7% of the total reporting area. Meerut district has the highest concentration of cultivated land (83.0%), Bulandshahr (82.39%) and Ghaziabad the lowest (78.5). The second major use-category is the 'land put to non-agricultural use', which covers 10.5% of the total reporting area. Ghaziabad has the highest of 12.6% and Bulandshahr has the least of 8.2% under non-agricultural use. The barren land (2.9%) is distributed mainly in Ghaziabad and Bulandshahr district while culturable waste land cover 25555 hectares constituting 2.4% of the total reporting area of the Sub-region, and distributed in Ghaziabad and Bulandshahr districts. The total forest area constitutes 1.8% of the total reporting area in the Sub-region and located along the Ganga river in Bulandshahr (2.2%) and Meerut (2.0%) districts.

11.2 Broad Land Uses

a) *Agricultural Land*

The cultivated land of 23.92 lakh hectares (79.9%) (as per record indicated in Table 11.3), in the Region should be kept reserved for cultivation purpose. In Delhi, only 59.9% of the area is under cultivation. There should be strict control on conversion of land to non-agricultural uses in Delhi as far as possible.

However to meet the requirement of urban activities requiring conversion of land for non-agricultural activities, the existing cultivated area should be brought under intensive cultivation.

b) *Forest*

A comparative analysis of forest area, through landsat satellite imageries and land records reveals that the forest area of 29665 hectares forming 45% of the total forest area of 65222 hectares is devoid of forest (Table 11.4). This vast area has been denuded by encroachment by other uses and deforestation. In Delhi, the forest area reported from imageries shows an increase in forest cover by 1244 hectares against the land record's 1434 hectares. This is because the satellite imageries interpretation includes all tree covers including parks, tree covered open spaces while records report only the total forest area designated as forest.

In the Haryana Sub-region, 31925 hectares of area (Table 11.4) is reported as tree-less area. This may be because, the area of land records includes protected forest along the roads, canals and bunds, while the satellite imagery shows only compact forest blocks which constitute 0.15% of the total reporting area. In the Sub-region, the area under tree cover can be increased through plantation along the roads, canals and bunds. The ridge areas of Gurgaon and Faridabad districts can be brought under forest cover.

In the Rajasthan Sub-region, the area under actual forest cover as interpreted through satellite imageries is 19203 hectares (Table 11.3) which is more than the land record area by 9333 hectares (Table 11.4). But as per the forest department, area under forest is 78761 hectares and this of course includes reserved, protected and unclassified forests. This indicates the loss of huge forest area of 59558 hectares. This loss is mainly due to the encroachment and indiscriminate felling of trees.

In the U.P. Sub-region, the area under actual tree cover as interpreted from the satellite imageries, is less by 8317 hectares compared to the land under forest as obtained from the statistical records of the State Government. The area according to the satellite imageries is 11601 hectares against 19918 hectares from the land records of the State Governments. However, the forest department reports an area of 29455 hectares under forests which includes reserved, protected, unclassified and social forests. This only shows the total area under tree cover whether reserved or otherwise should be 29455 hectares instead of 11601 hectares under actual tree cover meaning thereby a total area of 17854 hectares of land having been rendered tree-less either by encroachment for other uses or indiscriminate felling of trees. Bulandshahr district, in fact, has the highest share of such denuded area.

c) *Barren Land*

This category of land includes quartzite rocks, sandy and saline patches, gullied land and derelict lands. According to the satellite imageries, 6.5% of the total area is under barren lands against 4.7% as per the land records. Most of the gullied lands are concentrated in Rajasthan, Haryana and Delhi Sub-regions around the Aravalli ranges. In other parts, it occurs along the river and stream courses whereas saline patches are concentrated in the Haryana and Uttar Pradesh Sub-regions especially in the excessively irrigated area. Sandy patches exist in abandoned river courses in the Uttar Pradesh and Rajasthan Sub-regions.

The land actually under the category 'Barren land' as interpreted from the Satellite imageries is much more to an extent of 54,561 hectares than that from the land records of the NCR constituents. This only shows that more area has become barren for one reason or the other in addition to the area designated under this particular category.

Table 11.4 Proposed Landuse In NCR-2001

District/ Tehsil	Landuse Category	Forest area with no tree cover	Difference in cultivated land (SG-SI)	Barren land (SG-SI)	Cultural waste	Land put to Non Agricultural	Proposed Forest Expansion
I.	DELHI UT	(-) 1244	(-) 6838	7269	856	35820	8800
II.	HARYANA SUB-REGION						
1.	Gurgaon	9970	38358	(-) 44294	—	38149	59200
2.	Faridabad	4000	(-) 6095	(-) 7789	—	27703	28500
3.	Rohtak	8000	(-) 9837	(-) 3253	13000	25167	19700
4.	Sonepat	7966	(-) 11502	(-) 4531	10000	16811	13600
5.	Rewari & Bawal	1989	(-) 5428	3100	—	15000	8300
6.	Panipat	—	10323	3723	1000	5601	4700
	Sub-Total	(-) 31925	(+) 15819	(-) 53044	(+) 24000	(+) 128431	134000
III.	RAJASTHAN SUB-REGION						
1.	Alwar(part of NCR)	(-) 9333	(-) 18837	(-) 2114	7073	17398	89860
IV.	U.P. SUB-REGION						
1.	Meerut	813	(-) 1450	(-) 2912	5182	46238	12800
2.	Ghaziabad	(-) 1050	(-) 4730	1173	7398	32654	29100
3.	Bulandshahr	8555	9524	(-) 1033	12975	35968	28100
	Sub-Total	(+) 8317	(+) 3344	(-) 6672	2555	114860	7000
	NCR Total	(-) 29665	(+) 6512	(-) 54561	(8) 57484	(+) 296509	(+) 302660

The analysis reveals that as much as 53,000 hectares of land has become barren over and above the barren land as per the land records in the Haryana Sub-region, whereas it is to an extent of 6672 hectares in the U.P. Sub-region and 2114 in the case of Rajasthan Sub-region. Interestingly, an area of 7269 hectares in Delhi UT is found reduced compared to the land records which may be mainly due to the reasons of urban expansion and proliferation of secondary and tertiary activities. In other constituents of the Region, the excessive area under barren land may be due to continued scanty rain fall under climatic changes following disturbance of the eco system resulting from large scale deforestation and denudation of vegetative cover. And the water table sinks deep for want of adequate re-charge even the scanty greenary in the form of shrubs and bushes vanishes over time leaving the land barren. Moreover, in the irrigated wet lands with the perennial irrigation, is saline incrustation rises to the ground rendering the field infertile and consequently barren.

d) Culturable Waste

The second important category of land with development potential is the 'culturable waste' which is presently waste land and can be brought under cultivation or plantation with some efforts. Rohtak (13000 hectares) and Bulandshahr districts (912975 hectares) have the extensive area under culturable waste lands. Other districts of concentration of culturable waste lands are Sonapat, Ghaziabad, Meerut and Alwar.

e) *Land put to Non-Agricultural Uses*

This category includes settlements, transport network, rivers and canals. In Delhi Sub-region, this category forms maximum 24.2% of the total reporting area compared to nearly 10.0% in the Haryana Sub-region as well as U.P. Sub-region. The concentration of this use is significant apart from Delhi in Gurgaon, Faridabad and Mahendragarh districts of Haryana Sub-region. The heavy concentration of the land under non-agricultural use in Delhi UT is due to large chunk of the area being under urban as well as rural settlements with wide and well knit network of transport arteries converging towards it from all directions. Moreover, there are two Airports which cover vast area in Delhi. By training the river, canal and drainage nalla courses some portion of land under this category can be reclaimed for useful purposes.

f) *Others*

Land under permanent pasture and other grazing lands which meets the fodder requirements of the cattle occupy 1.2% of the total area of the NCR. The Haryana Sub-region has the highest concentration of 45.0% of the reporting area followed by the Rajasthan Sub-region. Part of these lands can be brought under tree cover. Land under miscellaneous tree crops and groves constitutes a meagre proportion of 0.2% of the NCR area. This land can be used as orchards and tree crops of commercial value.

The area under water bodies which includes only the stagnant water bodies, i.e., lakes, reservoirs, tanks forms 0.28% of the total area. The Haryana and the Rajasthan Sub-regions have considerable area under water bodies. These water bodies can be utilised for irrigation purposes. Recreational facilities, i.e. picnic spots, can be located around them.

11.3 Land Use: A Regional Perspective

The land use characteristics in the NCR are influenced mainly by two factors. The first has been the continuous and rapid increase of the economic activities particularly in the Delhi Urban Area (DUA) and the consequential rise in population within the DUA mostly due to inflow of migrants to seek employment opportunities created by the economic activities. In 1981, about two-thirds of the total urbanites of the NCR were concentrated only in Delhi.

The second factor has been the rapid increase in the development of industrial activities on the traffic arteries radiating from Delhi and the consequent pre-mature and speculative sub-division of land for residential and industrial uses along the corridors outside Delhi. The development activities in the secondary and tertiary sectors in the DMA towns have leap frogged leaving widening gap in the development of physical and social infrastructure. The other towns in the Region beyond the Delhi Metropolitan Area (DMA) have been growing slowly with normal activities and natural increase. The land use demands in the three distinct areas, namely, the Delhi UT, the DMA excluding Delhi UT and the area beyond the DMA, are influenced by the aforesaid developmental activities.

The convergence of road and rail routes on Delhi favoured flourishing whole-sale trade activities in Delhi and thus has flourished the whole-sale market for the entire North-Western India. This is reflected by the present disposition of land uses within main urban centres and also the mushrooming industrial agglomerations along them. The change in land use characteristics particularly the conversion of agricultural land for non-agricultural occupation has been phenomenal during the last two decades. This has brought in with it the attendant degradation and deterioration in the environment and eco-system. Vast tracts of fertile agricultural land have been lured away for industrial and economic uses with speculative cost considerations. However, the primary sector and agricultural economy will continue to dominate as the mainstay of the Region, though the urban structure might play a significant role in shaping the future land uses of the Region's primary sector irrespective of the dispersal and attraction of economic activities in the towns identified for priority development away from Delhi.

Moreover, the proposed transport and communication system based on the radial corridor pattern would provide for a need for a rationalisation and reorganisation of land use in the Region. The urban centres along the traffic corridors also, by creating more employment opportunities in the secondary and

tertiary sectors would bring about a shift in the land requirement from non-urban to urban uses. The anticipated urban population of 234 lakhs by 2001 as against a mere 91 lakhs in 1981 in the Region would also warrant adequate economic opportunities mostly in the non-agricultural occupations to be created by the turn of the century. However, as a major aspect for the regional development policy, most of these activities with employment opportunities are to be developed in the selected urban centres for development on priority basis.

11.4 Regional Landuse Proposals (Refer Map)

In the NCR, large proportions of land, about 80% is under agricultural use. A broad analysis of the existing landuse in the Region indicates a need for extension of area under forests and urban development and intensification of cultivation. This is possible as there is considerable scope for reclamation of culturable waste, barren and uncultivated land for forestry and other non-agricultural uses.

i) Land for Agriculture

For meeting the growing demand for food and food products, the existing cultivated land of 23.92 lakh hectares should be kept reserved for agricultural production purposes. Efforts should be made to increase the production through intensive cultivation by providing irrigation facilities and other necessary infrastructure.

In view of the anticipated changes in landuse, there would be a major impact on land requirement of agricultural sector. To the extent that new employment opportunities are proposed in non-agricultural sector and consequent concentration of population, the urban expansions would have to be largely met from the agricultural and other non-urban uses. It is however, necessary to institute measures for the protection of prime agricultural land and to ensure against its needless conversion. This necessitates a rational policy as to the utilisation of less and least valuable land for urban expansion/new urban centres.

ii) Land for Forest

Development of forest resources is of vital importance in preserving the environment and ecosystem which greatly influences the climate pattern for better. Their presence is also essential as a safeguard against flood and erosion.

The Region is poor in so far as its forest wealth is concerned. Forests occupy a meagre proportion of 1.2% of the NCR area and is under constant abuse of encroachment and denudation and as such, the day is not far off when the Region will be devoid of forests. The area under reserved forest is 35557 hectares concentrated in the Alwar tehsil of the Rajasthan portion. According to the National Forest Policy, in order to maintain minimum balance of the eco-system, on an average, 33% of the total area should be under forest cover with 60% in the hills and 20% in the plains. Viewing the situation of the forest in the Region with reference to the National Forest Policy, the Region's forest cover is already decimated to an alarming situation. The objective, therefore, should be to develop forests in any form such as protected and social forestry in all those areas which are not fit for mainly agricultural use.

The aims also should be:

- i. To increase the forest cover from 1.2% to a minimum of 10% on areas such as barren lands, rocky areas, culturable waste land,
- ii. to intensify the forest cover by planting suitable species in the sparsely treed zones, denuded areas and
- iii. to identify alternate sources of energy for fuel and also to find methods of increasing the efficiency in the use of the forest fuel especially from the social forests.

Zoning Regulations play a vital role in controlling and promoting urban development, limiting urban growth, in a broader sense and can also be used for laying broad direction of growth. Keeping in view the rapid urban/industrial expansion of the NCR towns caused by the induced concentration of economic activities and population, and also the rate of environmental degradation in the Region, the following four distinct zones (Map 2) have been identified for strict landuse control and development. An attempt has been made to identify the likely major economic activities in the following zones/areas:

- a) Urbanisable Area
- b) Green belt/Green Wedge
- c) Areas along the major transport routes
- d) Remaining Rural Land

a) Urbanisable Area—2001

Within the urbanisable area—2001, which is proposed in the Master Plans of the respective towns, the functions and uses designated as under could be continued:

- 1) Residential
- 2) Commercial
- 3) Industrial
- 4) Government Offices
- 5) Recreational
- 6) Public and Semi-public
- 7) Circulation
- 8) Open spaces, parks and playgrounds

The detailed uses within the urbanisable area will be governed by the local authority according to the prescribed uses in the Master Plans. However, master plans for Delhi Metropolitan Area and Priority towns should be prepared under the existing rules and act of the participating States/UT. In order to avoid the landuse conflicts especially in the Delhi Metropolitan Area Towns, the master plans of all the towns within the National Capital Region should be prepared in consultation with the National Capital Region Planning Board and approval obtained before it is finally approved by the respective State Governments.

b) Green belt/Green Wedge

The peripheral agricultural zone in the immediate vicinity of the urbanisable area is very vulnerable to encroachment by development. To arrest undesirable growth in this zone and to ensure orderly and compact urban development, a control belt is proposed all around the expected developable area. The development will be restricted or strictly controlled in this green belt. The activities compatible with open character of land will be permitted. The major landuses that could be permitted in these zones are as under.

- 1) Agriculture, particularly high value cash crops
- 2) Gardening
- 3) Dairying
- 4) Social forestry/plantation
- 5) Quarrying of gravels, sand, clay or stone, brick-kilns.
- 6) Brick-kilns
- 7) Cemeteries
- 8) Social Institutions—such as school, hospital
- 9) Recreation or leisure

The detailed boundaries of the green belt/green wedge will be defined in the sub-regional and master plans.

In the cases of settlements particularly which are in close vicinity to each other either along the roads or interior, the intervening space between the settlements should be kept green which can be designated as green wedge. This will prevent not only any development other than permitted taking place around the settlement but also from merging with each other. This green wedge should be forested partly and, wherever it is not possible for pressing reasons, it could be in the other forms of greens.

c) *Green Buffer Along the Major Transport Corridors*

The un-desirable industrial development in the areas beyond the urbanisable area of the towns along the 5 National Highways would become a serious problem in the near future. There will be a continuous ribbon development along the major transportation routes. The large scale development beyond urbanisable limits of any town should be strictly controlled. A width of 300 metres on each side along the National Highways and the proposed Express ways and M.I. and M.II motorways, and 200 metres along the State Highways should be kept as green buffer. These should be acquired as part of the development schemes and afforested under the control of the forest department. Only activities permitted in the green belt as indicated earlier would be allowed.

d) *Remaining Rural Land*

The remaining rural zone includes mainly the vast agricultural land, forest, ridge areas and rural settlements. This zone-virgin agricultural land-at present is being threatened by the spotted industrial/urban encroachments especially along the 5 National Highways and State Highways. The cheap cost of land in the rural areas, excellent transportation system and marketing for the products have accelerated the development of industries along the roadsides. The following major landuses can be designated in the rural lands. Strict prohibition and control on the large scale and hazardous industries, structures of any kind has to be exercised in the rural zone:

- | | |
|--|----|
| Intensive agriculture and allied activities | 1) |
| Afforestation especially on the hills, rocky lands, gullied land and barren lands. | 2) |
| Regional recreational facilities such as regional parks, wild life sanctuary. | 3) |
| Cemeteries, schools, institutions, like hospitals may be permitted. However, the proposed development should not involve the use of high yielding agricultural land nor should it adversely affect a site of special scenic beauty or ecological interest. | 4) |
| Quarrying of gravels, sand, clay, stone etc. | 5) |
| Brick kilns | 6) |
| Existing village mandis | 7) |
| Rural industries etc. | 8) |

e) *Land for Regional Recreation Purposes*

Recreation as an amenity has to meet certain competing types of demand such as the one from the urban population of the Region using country side as an amenity; from a wide urban population coming to the agricultural community and also from the balanced physical development of the Region itself.

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

- a) Areas of general level amenity as regional park in the proximity of the big urban centres,
- b) River fronts 'as recreational areas' by developing them and making them more accessible for such use,
- c) Historical monuments as Tourist attractions
- d) Parks in rural areas noted for their landscape and scenic beauty which could be used as picnic spots, and
- e) National Park in the vicinity of the Region.

11.6 Nature Conservation

The un-planned urbanisation and industrialisation and intensive exploitation of resources with little regard to environment affect the environment and ecology adversely. It has been realised that an intimate and in-separable relationship exists between the environment and development and that sustained development may not be achieved by ignoring the environmental causes.

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

In the NCR, the major natural features are the Ridge, an extended part of the Aravalli range, the forest areas, the rivers Yamuna and Ganga. Apart from these, the NCR has two wild life sanctuaries namely, Sariska wild life Sanctuary in the Rajasthan Sub-region and Sultanpur Bird Sanctuary in the Haryana Sub-region harbouring a large number of wild animals and birds.

The ridge areas should be conserved with utmost care and should be afforested with indigenous species.

The existing forest areas should be conserved and more area, specially un-productive land, should be brought under tree plantation. Conservation of natural habitation and features in the Region is of great importance to sustain the natural eco-system.

The rivers Yamuna and Ganga have a high level of water pollution mainly from the un-treated sewage and waste from industrial areas. While measures have been taken to make the river Ganga pollution free under 'Ganga Sector Plan' similar action is needed to check pollution of the river Yamuna too.

ENVIRONMENT AND ECO-DEVELOPMENT

Environmental modifications or changes are the inevitable consequence of development in modern situation. Environmental compatibility, therefore, is a vital issue for planned development. The existence of an inseparable and essential relationship between development and environment has been realised only recently. Sustained development will not be possible to be achieved in the absence of the knowledge of the environmental causes and the necessity of eco-system equipoise. Abusive exploitation of nature's assets confronts man in retribution with an environmental decay syndrome leaving him desperately on the long path of decay and deterioration.

Damage to the environment by man's interference for development purposes or otherwise has taken place mainly in the form of land degradation. Especially, the importance of forest wealth as a vital reserve of natural environment and stock has been lost sight of by indulging in large scale encroachment and denudation of the scanty forests the Region is endowed with. Unless suitable measures are immediately taken, the environmental health of the National Capital Region may fast reach a point of no return.

The status of environment, degree of environmental degradation, areas of environmental sensitivity and corrective and preventive measures for the Region's environmental health are attempted in this section.

12.1 Major Pollutants of the Region

The environment gets deteriorated by various economic activities and among them, industry is by far the most dominant activity damaging the quality of environment by polluting the air, water and land.

There is a gradual decline in the quality of environment in the industrial sector of, particularly the Delhi urban Area and other industrial towns of the Region. The undesirable environmental effects of industries are noise, smoke, dust and dirt, odour, emission of toxic gases, glare, vibrations, effluents, and aesthetic and psychological factors and many more. There are a number of industrial complexes in the Region at places such as Sonapat, Panipat, Gurgaon, Rohtak, Bahadurgarh, Faridabad and Dharuhera in the Haryana Sub-region; NOIDA, Khurja, Bulandshahr, Hapur, Meerut, Modinagar, Muradnagar and Ghaziabad in the Uttar Pradesh sub-region, and Alwar and Bhiwadi in the Rajasthan Sub-region.

13.2 Present Environmental Climate of the Region

1) Delhi UT

(a) Delhi's Air

"Uttar disregard to environment has placed Delhi in the unenviable position of being the world's third grubbier and unhealthy city¹". Delhi records 12 times the national average for respiratory ailments mainly due to the unchecked pollution or the thick clouds of smoke that hang over the city. An estimated one million motor vehicles, thousands of approved and unapproved industrial units—some of them hazardous, hundreds of stone crushers located in different parts of the Union Territory. The constant smoke belched

1. World Health Organisation

out by the chimneys of power generating units drive thousands of Delhites falling victim to various respiratory disorders.

A number of studies by expert agencies hold the smoke emitting chimneys of the Indraprastha, Rajghat and Badarpur thermal units equally responsible in playing havoc with the Delhi's environment. The power plants account for as much as 82% of the total industrial pollution in Delhi. The coal for the power plants contain 40% ash and 0.2 to 0.3% sulphur dioxide, and the plants use 13500 to 14000 tonnes of coal every day. Though the electro-static precipitators (ESP) to trap the flyash are fitted, the Kalpavish Environmental Action Group has found that these ESPs are working at less efficiencies than intended. The Badarpur's dust and fumes are found by the monitoring stations set up by the Central Pollution and Control Board to contain 411 to 2603 micrograms per cubic metre (MPCM) with an average of over 1200 MPCM which is 2.5 times the permissible limit of 500 MPCM for industrial areas and 12 times the 100 MPCH for the residential areas. The mushrooming industrial units not only pollute the environs but also pose safety hazards as a large number of them are located in the thickly populated areas of the walled city and in the residential complexes in the North and West Delhi zones. Each 500 tonnes crusher throws 3 tonnes of suspended particulates matter daily and the dust concentration around them varies from 3000 to 8000 MPCM of air; this is 15 to 40 times the limit prescribed by the Central Pollution Control Board.

Fifty percent of the total atmospheric pollution in the Capital however, comes from the emission of nearly 8 lakh vehicles that cough up over 250 tonnes of carbon monoxide, 400 tonnes of hydrocarbon, over 5 tonnes of sulphur dioxide and staggering amounts of particulate matter into the atmosphere. A study conducted by the Indian Institute of Technology, Delhi, at the behest of the Delhi Administration found only 18% of the Delhi Transport Corporation buses and 10% of the trucks that ply on the Delhi roads have the standard smoke intensity of 65% on the Hartridge scale. Nearly 41% of the DTC buses and 50% of the trucks and all tempos monitored by the IIT have a smoke intensity over 90% on the Hartridge scale. Of the 15000 polluting industries, nearly 5000 of the industrial units including hazardous industries such as chemicals, plastics, electro-plating, nickel plating are in nonconforming areas. The Railways are also contributing to the air and noise pollution in the city.

b) Delhi's Water

The major share of Delhi's water is from the Yamuna. But Delhi, which is incidentally the largest urban centre the Yamuna traverses in its course is itself hastening the deterioration of the Yamuna as its large stretch of the river in Delhi becomes more and more polluted. Nearly 1200 million litres of domestic and industrial waste water containing about 100 tonnes of BOD (Bio-chemical Oxygen Demand) load are let into the Yamuna every day. The 48 Km stretch of the Yamuna in Delhi is classified as 'E' by the Central Board for Prevention and Control of Water Pollution, where 'E' means it is fit for irrigation, industrial cooling and controlled waste disposal. In fact, the entire stretch from Delhi to Agra is unfit for bathing and drinking. Nineteen major storm water drains meet the river in Delhi. A survey by the Pollution Control Board in 1984 revealed that five drains namely, Najafgarh, Civil Mill, Power House, Sen Nursing Home and one from Okhla Sewage Plant contribute more than 95% of the Yamuna's total BOD load. Untreated sewage and sullage from these colonies flow into the open drains and finally the Yamuna. In addition, industrial waste water generation, though a mere five percent, is also significant as it contains intoxicants. At the time of the gas leak at Shriram plant, 55 tons of sulphuric acid found its way into the Yamuna. The thermal plants discharge waste oils and chemicals into the drains that threaten subsoil waters that will seep into the river. Some of the industries discharge dangerous pollutants like cadmium, zinc, chromium, cyanide, oil, grease and colour into the river. Cadmium, for instance, may cause cramps, nausea, vomiting, diarrhoea and cardiovascular changes. Major part of the solidwastes of the city are dumped at many places in the opens in the city which pollute the air, subsoil water and land too.

2) Haryana Sub-region

a) Sonapat

Large scale pollution of land and water from the effluents of large industries is prevalent in Sonapat. Roads adjacent to Atlas Industries are polluted with solidwastes and sullage water causing insanitation and health hazards. The Shanti Paper Mills, Engineering Industries, Seafarm, Roller Tanner, Gedore Tools and Hindustan Everest Foods and Kundli Industrial Estate cause both air and water pollution.

b) Panipat

This textile town has a number of handloom, powerloom industries dealing with woollen fabrics. Some of them are fairly large and are located along the main road. The effluents from these industries are allowed into an open drain. A large and highly polluted drain through the middle of the city outfalls into the Yamuna polluting it to dangerous proportions.

c) Bahadurgarh

Bahadurgarh has extensive areas under industries. At the industrial area near the railway station about 100 small and large industries are in production for quite sometime. The private industries north of the road includes chemical industries that are causing air and water pollution. Though HUDA has constructed sewage treatment plant, major part of the sullage is disposed off on land as the plant is not completed.

d) Faridabad – Ballabgarh Complex

There are around 1800 polluting industries and, among them, 337 industries including electro-plating processors are more polluting. There are a number of privately owned electroplating units in the residential areas seriously endangering the health of the residents. Due to dumping of metallic wastes from the industries, traces of zinc have been found in the water drawn from the borewells and, this poses an alarming health hazard to many in the city. The treatment plant to treat the industrial wastes is reported to be not in working condition continuously. Moreover, the sewage treatment plant not being in use, the raw sewage is let into the drains damaging the environment.

e) Dharuhera

The solid and liquid wastes of the Industrial Estate are dumped on the Jaipur road side causing water stagnation and insanitation. There is pollution of air, water and land in an extensive way in the Estate. The paper mills throw out liquid wastes on to the road and also the gaseous wastes (sulphuric acid) which has damaged the agricultural crops as well as trees in the area. The solid wastes from the paper and chemical industries being dumped on land will spoil the land as well as the water resources. The Oriental Carbons and Chemicals Ltd. and the Multi Technical Chemical Industries are particularly the two that cause heavy pollution of land, water and air.

f) Gurgaon

Among the many industries in the city, polluting industries are the ceramics, rubber and iron works etc. For want of adequate power supply, even the large industries are using diesel generators which aggravate the smoke pollution hazards. If enough power is provided, this problem may be to a great extent solved.

3) Rajasthan Sub-region

a) Bhiwadi

Bhiwadi Industrial Estate located on the Rajasthan – Haryana border accommodates a number of large industrial units besides a number of small scale industries. There is no arrangement to deal with the solid and liquid wastes. The sullage water is carried untreated through the natural drainage channels towards Haryana causing a great hazard of water pollution. The Cardboard Factory and the two paper mills are the most polluting units and, their solid and liquid wastes are dumped on land. The coal ash is not properly disposed off.

b) Alwar

Alwar has two industrial areas, one in the town is of medicine and chemical industries which create pollution hazard; the other one is outside the town consisting of chemical gases and glass industries which give rise to large scale pollution. There are chances of gas leakage which has occurred at minor levels earlier causing eye irritation to the residents nearby.

4) Uttar Pradesh Sub-region

a) Khurja

This is an unique case where a large number of ceramic industries have been developed close to each other with a kiln and a chimney for each. The kilns are mostly coal fed and the coal is supplied by the Government. The smoke from many chimneys heavily pollute the atmosphere and sometimes, choking sensation has been reported by the people around. There is also some land pollution due to waste dumping on the road sides. The problem is one of regulating the fuel as well as improving the chimneys so as to reduce the air pollution levels. The proposed expansion of ceramic industries may add more to the pollution level and suitable measures to minimise the pollution should be taken.

b) Meerut

Meerut city has three industrial areas—one at Partapur, one at Modipuram and the other at Daurala. Partapur industrial area consists of engineering, and presently, only water pollution by the distillery is reported. However, the area may pose a big environmental hazard if suitable steps are not initiated now. Modipuram industrial complex is reported to have no significant pollution problem so far. In future, there can be air and water pollution as the new industrial development by the UP Government may not be under one management. However, the Daurala Sugar and Chemical industries have not created pollution problem so far. The small industrial units within the city are causing air, water and land pollution.

c) Murad Nagar

The ordinance factory is causing some air and water pollution. Environmental impact assessment of the power house being established is being made and this could be extended to the total area.

d) Modi Nagar

A large number of industries which have been located on road side as well as inside have no provision for any treatment and the liquid waste is discharged into the Kalinadi. This endangers the inhabitants of the area as well as the ground water sources. The chimneys of various plants are causing air pollution. Modinagar can be a source of serious pollution hazard if pollution control measures are not applied soon.

e) *Ghaziabad*

There are a number of industrial complexes comprising forging units, rolling mills, paper plants, metallurgy plants, pharmaceuticals, rubber industries and electro-plating. All of these cause serious water and air pollution. The wastes pollute the Hindon River. The calendering and dyeing plants at Pilkhwa, though small in size, cause water pollution in a big way. A collective arrangement to all these small units may help to reduce the pollution effect.

f) *Mohan Nagar*

The food processing plant, engineering shops located on the border of Delhi cause air and water pollution. No action has been taken so far to treat the effluents to contain water hazards.

g) *Sahibabad*

There are a number of industries manufacturing textiles, paper, chemical and rubber products. Besides, there are a number of printing and electroplating industries. These are causing air and water pollution. The water pollution covered by these industries may also affect the waters of the Yamuna. It is necessary to have a comprehensive assessment of the environmental hazards of the entire industrial units to find a satisfactory remedy.

h) *Sikandrabad*

The effluents of the paper mills are being let out on the roads and, the road side is filled with flush of both solid wastes and liquid wastes. The various chimneys of factories are throwing dangerous gases into the atmosphere and, there is no monitoring of pollution in this area so far. It is possible that industrial slums will come up close to the industries and the entire area may become a great pollution hazard.

The synthetic yarns plants and manufacture of pipes may cause environmental hazard sooner or later. An overall view of these developments has to be taken in combating their hazardous effects.

i) *NOIDA*

This area accommodates hundreds of small scale industries of non-obnoxious nature and not generating environmental pollution beyond accepted norms. Other environmental safeguards against the ill effects of noise, excessive heat and humidity are reported to have been taken. But NOIDA being at the border of Delhi has resulted in large slums coming up in Delhi.

j) *Bulandshahr*

DDT plants, steel rolling and new rolling mills and some engineering works have come up in the area. Though no specific pollution hazard is noticeable today, further developments may become hazardous which need a careful planning now.

12.3 Environmental Sensitivity (Industrial)

This is a tool to assess the overall impact of various types of pollutants generated by different kinds of industries on various landuse zones, infrastructure, flora and fauna and man made structures. This will help in formulating industrial policy.

The Environmental Sensitivity Index of an industrial complex can be defined by the following expressions:

$$ESI = \frac{Et}{N} \dots\dots\dots (1)$$

$$\text{Where } Et = \sum_{i=20}^{i=38} Ein \dots\dots\dots (2)$$

at Et=Total environmental Status score of the industrial complex (urban centre)

N =Total number of industries (all kinds) in the complex.

n =Number of units in industry.

i =National Industial classification code number (varying from 20 to 38)

The various sources of environmental pollution considered for this model include gases, chemicals, smoke, odour, solid waste, dust, noise, vibrations, mosquitoes, flies, roadways, railways and water and, the items affected include landuse zones, infrastructure, flora and fauna and man made structures.

The Environmental sensitivities for industrial complexes in the NCR* are as under:

<i>Sub-region/Industrial Complex</i>	<i>ESI</i>	<i>Environmental Condition</i>
A. Haryana Sub-region		
1. Sonapat	778	Adverse
2. Panipat	798	Adverse
3. Gurgaon	757	Adverse
4. Rohtak	758	Adverse
5. Bahadurgarh	679	Bad
6. Faridabad	675	Bad
7. Rewari	715	Adverse
8. Dharuhera	730	Adverse
B. Rajasthan Sub-region		
1. Alwar	757	Adverse
2. Bhiwadi	789	Adverse
C. Uttar Pradesh Sub-region		
1. NOIDA	614	Tolerable
2. Khurja	650	Bad
3. Bulandshahr	615	Tolerable
4. Hapur	650	Bad
5. Meerut	632	Bad
6. Modinagar	633	Bad
7. Sikandrabad	635	Bad
8. Ghaziabad	662	Bad

* Sources: Environment Impact Assessment and Guidelines for industrial Development in NCR by the School of Planning and Architecture for the Ministry of Environment and Forest.

12.4 Pollution due to insanitation

The effluents from industries and trades, and domestic sullage, if untreated, cause incalculable damage to the environment. The oils and greases, apart from rendering water unpotable, retard aquatic plant growth by blocking the sunlight and interfering with natural aeration. They destroy natural vegetation along the banks, are toxic to fish and other aquatic life. It can also be a fire hazard. The suspended mineral tailings from slime and sludge smother purifying micro-organisms and ruin fish spawning and breeding grounds. If the suspended matter is organic, it would decompose and produce noxious gases and odours that are harmful to human life. The dissolved impurities such as acids, alkalines, insecticides etc. leave the water unfit for human consumption, damage the aquatic life and also give rise to objectionable odours and tastes.

Solid wastes cause water pollution and toxic compounds which require special disposal techniques. They help in the growth of rodents which may cause in later stages many fatal diseases. So far sanitation facilities are concerned, the Region presents an unsatisfactory picture. Of the urban centres, as many as 65 do not have sewerage system at all, and in the rest too, in 4 towns, the sewage is not treated. The raw sewage is disposed off on lands, into open drains and is allowed to flow its natural slopes where it stagnates and results in formation of foul smell, breeding of germs, virus and rodents, and water pollution. Solid wastes are managed only in 29 towns and they are dumped in depressions in an unorganised and unscientific manner polluting the air by its gaseous products and the underground water. The rural sanitation scene is still worse. Sewerage system does not exist in villages and, solid waste collection and disposal is fully unscientific and irrational (Refer to section on Water Supply and Sanitation).

12.6 Imbalance of Eco-system

One of the important elements in keeping the eco-system in balance is the vegetative cover. The National Forest Policy in this regard stipulates a minimum of 33% of the land area to be under forest cover on average, made up by 20% in plains and 60% mountainous zones. The NCR, by and large, is plain and should have therefore a minimum 20% of its area under forest/tree cover. But, the Region has only 1.2% of its area under forest cover. In fact, even this is being fast eaten away by encroachment for other uses. Even in the left over forest area, forests are denuded indiscriminately leaving only a fraction of the forest area under tree cover. The satellite imageries of the Region reveal that out of the forest designated area of 65222 hectares, only 35557 hectares of land is covered by microclimatic conditions causing reduced rainfall, dust storms, deepened water table conditions and finally in poor economy and livelihood of people. The damage is to an extent of 31925 hectares in the Haryana sub-region and 8317 hectares in the Uttar Pradesh sub-region. This needs a set of rational and constructive policies and legislative tools and strict enforcement of the same.

12.6 Policies and Proposals on Environment and Ecology

1) Air Pollution

The main sources which contribute to air pollution are emission from automobiles, industries, thermal power plants, fertilizer plants, coal burning and indirectly putrefying odour from slaughter houses, raw sewage disposal, solid waste dumping and stagnating water. There is a direct relationship to air pollution levels and urbanisation and industrial activities. The levels of air pollution in the NCR are severe in several pockets such as in the metropolitan and urban industrial areas, major transport corridors, etc. Therefore, any further urbanisation and industrialisation in the NCR has to be reckoned for their air pollution impacts and the general tolerance levels that should be achieved for viable development programmes. These have to be identified through appropriate field research studies so that the levels and types of industrialisation can be established for different Sub-regions.

2) Water Pollution

- a) No industry be permitted to discharge its effluents over land or water bodies without treating it to requisite pollution control.
- b) As far as possible, new industries be developed in identified and classified industrial areas/estates which should have proper effluent treatment facilities in-site before they are discharged into natural areas.
- c) Urban wastes should be treated to requisite levels of pollution control standards before being discharged into rivers or other water bodies or on lands.
- d) The existing water sources should be developed through inter-state cooperation and water supply problems should be dealt within an unified manner for the NCR as a whole.

3) Sewage Disposal

Detailed schemes should be prepared at local level for sewage treatment for all DMA, priority and other towns so that the sewage water may be recycled for irrigation and other purposes. The settlements where regular sewerage schemes are not available, low cost sanitation systems for individual family or community may be adopted as a short-term measure.

4) Solid Waste

Solid waste from urban and agricultural areas, if properly recycled, can be a valuable source of nutrient and energy. This approach will also lessen the pollution loads of the solid wastes on the environment and the eco-system. A scientific approach should be adopted for the solid waste management and its re-use in all urban and agricultural areas.

5) General

- a) To lessen the pollution effects of human wastes on soil and water environments, efforts should be made to introduce alternate technologies like low cost sanitation, integrated bio-gas generation system etc. in towns and villages where the conventional sewerage system is not available.
- b) A Joint Board for prevention and control of pollution of water and air should be established for the NCR. Its main functions may be as below:
 - (i) To coordinate the activities of the State Boards for the prevention of pollution, and the environmental committees constituted at local levels and to provide them the technical assistance and guidance to carry out and sponsor investigations and research relating to problems of water and air pollution and prevention, control and abatement of such pollution.
 - (ii) To enforce law for treatment of liquid effluents from domestic areas, industrial and commercial areas for making them fit for recycling.
 - (iii) Promote solid waste management for extracting its nutrient value.

c) Human Settlements

Care should be taken by the local planning and plan implementing authorities at the time of preparing and implementing the development plans of the urban areas in their Sub-regions to contain the spread of corridor developments all along the major arteries of the Region. All urban developments should be

regulated within identified geographical areas. As far as possible, each of the settlements may be surrounded by a green belt comprising social forestry, urban forestry or agro-horticulture with adequate vegetal and biomass cover. These would inter-alia, act as climate balancers.

Location of industries in the NCR should be regulated with respect to pollution propensities. Industries should be located in such a way that smoke emitted by industries is carried away from the main human settlements. Industries that may generate liquid wastes should be located on such sites so that the water sources are not polluted, and no liquid effluents are released without proper treatment to reduce its toxic effects.

MANAGEMENT STRUCTURE FOR PLAN IMPLEMENTATION

13.1 With the establishment of NCR Planning Board, an apex body has been constituted at the Central level with the requisite statutory powers to prepare a Regional Plan for the balanced, harmonised and coordinated development of the NCR and to enforce, oversee and monitor the implementation of the Plan. For successful implementation of the Plan in the Region, suitable institutional arrangements are necessary at all levels.

13.2 The Housing and Urban Development Departments (Town and Country Planning Department as in Haryana) of the participating State Governments are the nodal points for implementing the NCR Schemes through the Development Authorities, Local Bodies, Improvement Trusts assisted by a specialised State level development agencies such as Water Supply and Sewerage Boards, Housing and Development Boards, State Electricity Boards, State Industrial Development Corporations, etc. The Delhi Development Authority is the nodal agency for Delhi UT. The existing implementing Agencies may, however, not enjoy the powers/jurisdiction in the entire Sub-region, comprising both urban and rural areas coming within the Region.

13.3 Some of the towns identified for priority development have only Local Bodies which are basically vested with maintenance functions while some of them have Local Bodies as well as Development Authorities as in the case of Meerut in Uttar Pradesh or only Local Bodies with a State level Urban Development Authority such as Haryana Urban Development Authority (HUDA) in Haryana, and Housing and Development Board and Jal Nigam in Uttar Pradesh. In the case of Rajasthan, the Urban Improvement Trust, Alwar functions for all purposes as Urban Development Authority in addition to the Local Body such as Alwar Municipal Board.

In the DMA towns, a Development Authority exists in Ghaziabad as well as NOIDA in Uttar Pradesh whereas in the Haryana Sub-region, that for Faridabad–Ballabgarh complex, there is Faridabad Complex Administration and for Gurgaon and Bahadurgarh, HUDA is responsible for implementation of urban development schemes. The functions of maintenance of services in these towns continue to be with the Municipal Boards.

13.4 In order to implement the proposals as contained in the Regional Plan, substantial investments will have to be made in various sectors in these towns including investments in the rural areas when the Sub-regional plans for the respective Sub-regions have been prepared. For investments in regional road network, the Public Works Departments of the State Governments would be involved. Therefore, the ideal situation for implementation of the Schemes would be the presence of local Development Authority to undertake capital works and, a local body responsible for its maintenance thereafter assisted by the State Government Departments such as the PWD for regional roads. Presently, the pattern in the three States, however, differ. In Haryana the HUDA have a State-wide jurisdiction which can undertake capital works in any one of the towns in Haryana with the support of the respective local authorities for maintenance purposes. In Rajasthan, the jurisdiction of the Alwar Improvement Trust has now been extended to Bhiwadi for the purpose of implementing the NCR schemes, while there is a local body responsible for maintenance of services in the Alwar town. However, the Public Health Engineering Department

undertakes capital works for water supply, sewerage and drainage schemes and is also responsible for its maintenance. There is no local authority in Bhiwadi created so far for the maintenance of essential services, and this function is at present discharged by the RIICO. In Uttar Pradesh, there is a Development Authority in Meerut along with the Municipal Corporation while in the remaining priority towns, namely, Hapur, Bulandshahr and Khurja, there are only Municipal Boards which are basically maintenance bodies. The U.P. Housing and Development Board, which is a State-wide agency, undertakes capital works, more specifically the Housing Schemes whereas the U.P. Jal Nigam implements water supply and sewerage schemes on behalf of the local bodies. In a situation like this, the need for creation of a Development Authority wherever it does not exist today to specifically undertake the works under the NCR Schemes is imperative.

13.5 For effective and timely implementation of the proposals on a number of development aspects such as urban development, construction of regional roads, development of economic activities for creation of employment opportunities, provision of social and physical infrastructure in the various settlements ranging from regional centres to the basic villages, the need for creation of a high level committee in each of the participating States represented by various development departments of the respective State Governments has been felt as a necessity. The high level committee may be in the form of a Steering Committee under the Chairmanship of the Chief Secretary to coordinate and oversee the implementation of the various development proposals within the framework of the NCR plan. In fact, the Uttar Pradesh Government have already constituted such a Steering Committee under the Chairmanship of the Chief Secretary. It is proposed that such an overseeing high level committee be constituted in the other participating States too, namely, Haryana and Rajasthan.

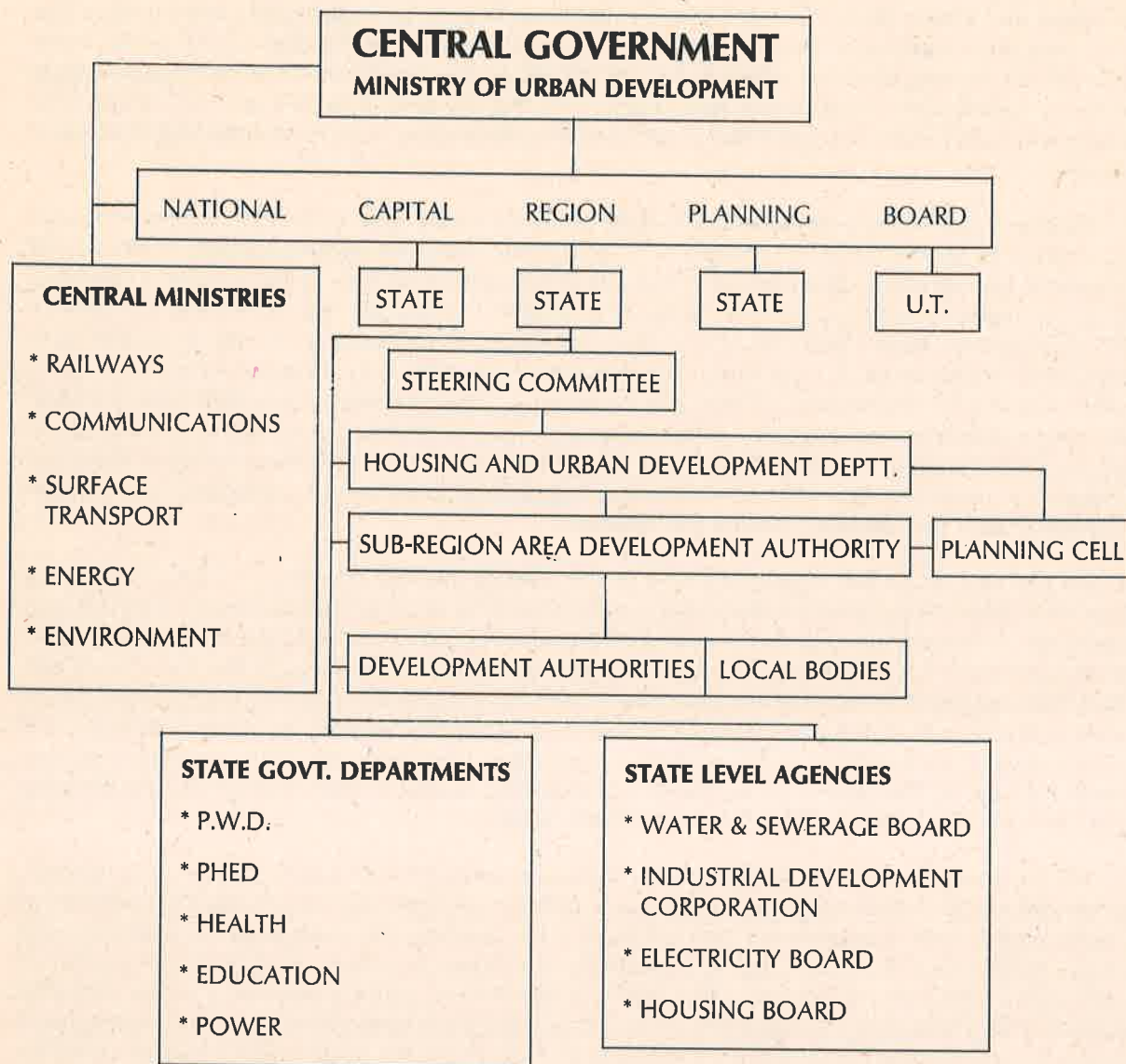
13.6 For planning of the Sub-regions, the NCR Planning Board mooted the idea of creation of Planning Cells in each participating State to collaborate in the efforts for preparing Regional Plan for the NCR and, subsequently preparing Sub-regional plans and Project Plans by the concerned State Governments. The Haryana Government has reportedly made certain arrangements in this regard in the State Town and Country Planning Department, while the Governments of Uttar Pradesh and Rajasthan are in the process of creating such cells in their respective State Town and Country Planning Departments. The creation of such Planning Cells in all the three States needs to be speeded up for timely finalisation of the NCR Draft Plan and sub-regional Plans and the project plans. Planning Cells are also expected to provide a link in the planning process between the local, regional, State and Central levels.

13.7 For implementing the regional proposals such as development of roads, market yards, schools, hospitals and provision of drinking water supply and sanitation, electrification etc., multiple departments in the participating State Governments are involved. As is known, the multiplicity of authority with overlapping functions, as of today, may not effectively serve to implement particularly a large number of capital intensive time-bound projects under the NCR Plan for successful achievement of the NCR Plan objectives. It may, therefore, be eventually necessary to create an unified Sub-region Area Development Authority in each State, which could be a Planning and Development agency. This authority could be assisted in their functions by the Planning Cells. It could also receive funds from the State Government and the NCR Planning Board, with powers for raising resources through institutional financing for a systematic planned development of the Sub-region consisting of rural and urban areas.

13.8 The Development Authorities in the Sub-regions will be the local agencies for planning and development in the urban areas while the NCR Sub-regional Area Development Authority itself may be executing the projects in the rural areas in the Sub-region. To establish a link between the NCR Planning Board and the participating State Governments in implementing the projects, it is proposed that the NCR Sub-Regional Area Development Authority should include representatives of the NCR Planning Board in its composition of members.

13.9 An organisational structure for the purposes of planning and development of the Region is as follows:

PROPOSED ORGANISATIONAL STRUCTURE FOR IMPLEMENTATION



STRATEGIES AND PRIORITY AREAS FOR DEVELOPMENT 2001

The Draft Regional Plan for NCR 2001 stipulates an inter-related policy frame-work for achieving the objectives of NCR Plan. The policies require several strategies to be followed each of which has significant impact on programmes to be undertaken in the NCR. Various strategies and priority areas for development as discussed below are related to the goals of the NCR Plan to be achieved by 2001-AD, the goals being: (i) a manageable Delhi, (ii) harmonised and balanced development of the NCR.

14.1 Policies and Strategies

Although the year 2001 has been taken as the perspective for the Draft Regional Plan, the Plan is not finite but is a part of a continuous process. Nevertheless it is essential to structure this continuous process into discrete phases, that can be organised within the limits of the resources and implementing capability of the organisations involved. It is equally essential to place the tasks into an order of priority. The tasks can be divided into six categories:

- i. Continuation of the work of Regional Plan through the preparation of Functional Plans by the NCRPB and Sub-regional plans by the participating States and Delhi UT.
- ii. Action plan, programmes and project plans by each of the participating States and Delhi UT
- iii. Institutional Improvements
- iv. Resource mobilisation
- v. Approval and Monitoring of implementation of Projects
- vi. Implementation of the Regional Plan.

The tasks are elaborated as below:

i) Continuation of work of Regional Plan

The Draft Regional Plan contains broadly policy frame-work, strategies and guidelines for development of the Region together with broad landuses for the NCR 2001. After the Regional Plan has been published for inviting objections/suggestions, the next step would be to discuss the proposals as widely as possible with the governmental agencies both Central and State, Implementing agencies and community at large, for making suitable modifications in the light of objections/suggestions received. For this purpose, an illustrated presentation of the main components of the Regional Plan would be prepared and presentation made to various forums. Seminars will also be held with the implementing agencies who will play an important role in achieving the aims of the Regional Plan. This is expected to provide an useful contribution to the continuing review of policies.

The office of the NCRPB will prepare Functional Plans for various sectors of development in close collaboration with the Central/State Government agencies. These Functional Plans will identify areas of action to achieve the objectives of the NCR Plan.

The action plan will suggest measures:

- a. To contain the population of Delhi UT through decelerated growth
- b. Moderate growth of DMA excluding Delhi UT
- c. Action to induce growth in towns/complexes identified for priority development by enhancing the momentum of economic expansion and technological development and also adopting effective promotional measures to create employment opportunities to attract the Delhi-bound migrants.
- d. Action to expand and to effect qualitative and quantitative improvement in physical and social infrastructure in towns identified for priority development.

The Sub-regional Plans will be prepared by each participating State for the respective sub-region. The Sub-regional Plan will indicate the following elements to elaborate the Sub-regional Plan at the Sub-regional level namely:

- a) reservation of areas for specific landuses which are of the regional or sub-regional importance;
- b) future urban and major rural settlements indicating their areas, projected population, predominant economic functions, approximate site and location;
- c) road net-work upto the district roads and roads connecting major rural settlements;
- d) proposals for the co-ordination of traffic and transportation, including terminal facilities;
- e) priority areas at sub-regional level for which immediate plans are necessary;
- f) proposals for the supply of drinking water and sanitation and drainage; and
- g) any other matter which is necessary for the development of the Sub-region.

ii) *Action Plan, programmes and Project Plans by each of the participating States and Delhi UT.*

a) The Draft Regional Plan for the NCR envisages development of economic activities over a wider area in the Region more specifically in the towns/complexes that are identified for this purpose. These priority towns need to be planned each as a self-contained unit and action taken for their coordinated and synchronised development both physical and economic to maximise their growth. This can only be done through an interrelated programme for which projects would be required to be identified over a time-scale.

b) The development strategies approved in the Draft Regional Plan need to be translated into a set of programmes and phased suitably to achieve the major objectives of the Plan. The three phases would be as follows:

- Phase I (1987-1990) corresponding to the remaining part of 7th Five Year Plan period.
- Phase II (1990-1995) corresponding to the 8th Plan period
- Phase III (1995-2001) corresponding to the 9th Plan period and part of 10th Plan period.

c) Bringing down the growth rate by inducing the Delhi bound migrants to priority towns through creation of job opportunities will have a strong impact on priority towns and will require serious planning efforts. These towns cannot absorb a large number of migrants who are presently moving to the National Capital without inducing growth rate in them three to four times higher than their present rate. In view of the greater concentration of population in the Capital the need for flow of migrants to be re-directed to priority towns will be greater. This will require well identified projects to gradually increase the migration share to the priority towns by improving their economic base. The dominant force in triggering immigration is the growth of secondary and tertiary sectors. The secondary sector has a greater multiplier impact upon the expansion of local and regional economy than a similar employment expansion in the service sector. For effectuation of such a programme, the institutional framework both at the State and city levels will need to be strengthened and action taken to improve the resource mobilisation at the local level. This will also call for inter-linkages of investments and programmes of the agencies responsible for economic activities, State level functional agencies and local authorities incharge of the infrastructural services and maintenance.

Need for Multisectoral Projects:

In the context of the above, coordinated urban development projects for various sectors of the Region/ selected towns will need to be prepared.

The regional level components will be:

- Surface Transport both for N.H. and regional roads
- Railways
- Telecommunications

And the priority towns components will be:

- development of economic activities—Industry, Distributive trade & commerce and Government and Public Sector Offices to promote employment and improve the economy
- urban services like water supply, sanitation, storm water drainage, solid waste management, traffic and transportation etc.
- provision of social infrastructural facilities such as education and health
- development of shelter

In this regard, more appropriate action would be to designate the areas where urgent planning action is needed and to treat these as 'priority areas' for which integrated plans and programmes would be prepared. These would be called 'action areas' and the plans would be called 'action plans'. To prepare the plan, it is suggested that the Planning Cells of the State Governments would be responsible for complete programming including the tasks of coordinating investments of public and private agencies. A programme would be devised in relation to the priorities finally culminating into projects for implementation.

iii) Institutional Improvements

For efficient implementation and management of the projects, it is necessary to tone up institutions incharge of urban development, services and management at all levels. This will involve review of the working of the development authorities, taxation and tax recovery system of the local authorities and monitoring methods of the projects, at the local level.

iv) Resource Mobilisation

Under Section 22 of the NCR Planning Board Act, it is provided that the National Capital Region Planning Board fund be constituted. The sources for such fund shall be:

- a) all grants and loans from the Central Government;
- b) all sums paid to the Board by the participating States, Delhi UT; and
- c) all sums received by the Board in consultation with the Central Government, participating State Government and UT.

NCRPB's Resources:

It is proposed to mobilise resources under Section 22(1) (c) for financing implementation of the NCR projects through:

- a) Life Insurance Corporation of India
- b) Debentures/bonds
- c) Nationalised Commercial Banks
- d) Proposed Urban Development and Urban Water Supply Finance Corporation

State Government Resources:

At the State level, the general provision of pattern of matching share will continue. However, the State Governments will make efforts to raise additional resources through:

- a) HUDCO
- b) LIC
- c) Nationalised Commercial Banks
- d) Market Borrowings

Local Government Resources:

- a) Locally raised taxes
- b) User Charges
- c) Market Borrowings
- d) Other non-tax revenues for performance of statutory and regulatory functions.
- e) Transfers from higher level of Government including shared taxes and grants-in-aid.

v) Approval and Monitoring of Projects

The project plans will be mainly prepared by the implementing agencies at local level within the framework of the Regional/Sub-regional/Functional Plans in collaboration with the proposed Planning Cells at the State levels. NCR Planning Board will assist the implementing agencies in preparation of identified projects. Each implementing agency will have a Monitoring Cell for the projects under that agency and they will submit timely progress of the performance in implementation as a feed back to the NCRPB. The NCRPB will develop a Monitoring and Evaluation system and also extend assistance in the preparation of objective-effective projects in addition to financially viable projects.

v) Implementation of the Regional Plan

The Regional Plan, although containing socio-economic policies, has alternative strategies with investment implications. The Regional Plan represents an end product, the implementation of which would be pursued on the desired strategies and goals through a number of projects. However, in the light of the impact the development would create, the Plan and its strategies in its entirety would be reviewed every five years and, after such review, substitute it by a fresh regional plan or make such modifications or alterations therein as may be found necessary.

ANNEXURES

NATIONAL CAPITAL REGION PLANNING BOARD

1. CONSTITUTION

The National Capital Region Planning Board was constituted on the 28th March, 1985 under the provisions of National Capital Region Planning Board Act, 1985. The National Capital Region Planning Board, under the Chairmanship of the Union Minister of Works and Housing (now called Urban Development) has 21 members and 5 co-opted members, having its composition as under:

1. Union Minister of Urban Development	Chairman
2. Chief Minister of Haryana	Member
3. Chief Minister of Rajasthan	Member
4. Chief Minister of Uttar Pradesh	Member
5. Lt. Governor of Delhi	Member
6. Chief Executive Councillor Delhi Metropolitan Council	Member
7. Union Minister of Industry	Member
8. Union Minister of State for Railways	Member
9. Union Minister of State for Surface Transport	Member
10. Member (Urban Development) Planning Commission	Member
11. Secretary, Ministry of Urban Development	Member
12. Secretary, Department of Expenditure Ministry of Finance	Member
13. Chief Planner, Town & Country Planning Organisation	Member
14. Minister for Town & Country Planning, Government of Haryana	Member
15. Minister for Urban Development Government of Rajasthan	Member
16. Minister of State in charge of Urban Development, Government of Uttar Pradesh	Member
17. Chief Secretary, Government of Haryana	Member
18. Chief Secretary, Government of Rajasthan	Member
19. Secretary, Housing & Urban Development, Government of Uttar Pradesh	Member
20. Chief Secretary, Delhi Administration	Member
21. Member-Secretary, National Capital Region Planning Board	Member

Co-opted Members

1. Chief Minister of Madhya Pradesh
2. Secretary, Ministry of Industry, Government of India
3. Chairman, Railway Board, Government of India
4. Secretary, Ministry of Surface Transport, Government of India
5. Adviser (HUD), Planning Commission, Government of India.

2. FUNCTIONS OF THE NCR PLANNING BOARD

Under Section 7 of the Act, the functions of the Board are:

1. to prepare the Regional Plan and the Functional Plans.
2. To arrange for the preparation of Sub-regional Plans and Project Plans by each of the participating States and the Union Territory of Delhi.
3. To co-ordinate the enforcement and implementation of the Regional Plan, Functional Plans, Sub-regional Plans and Project Plans through the participating States and the Union Territory.
4. To ensure proper and systematic programming by the participating States and the Union Territory in regard to project formulation, determination of priorities in the National Capital Region or Sub-regions and phasing of development of the National Capital Region in accordance with stages indicated in the Regional Plan.
5. To arrange for, and oversee, the financing of selected development projects in the National Capital Region through Central and State Plan funds and other sources of revenue.

The Board is further empowered to coordinate and monitor the implementation of the Regional Plan and to evolve harmonised policies for control of land-uses and development of infrastructure in the National Capital Region so as to avoid any haphazard development of the Region. (The Act also provides for the constitution of a Planning Committee in which officers of the participating States and the Delhi UT are represented to assist the Board in the discharge of its functions).

The Board will have its own fund called the National Capital Region Planning Board Fund consisting of contributions from the Central Government and the State Governments concerned. The Board is also empowered to select and finance the development of any urban area outside the National Capital Region under the counter-magnet concept in order to achieve the objectives of the Regional Plan.

The statutory National Capital Region Planning Board is a coordinating and monitoring body and the responsibility of executing the schemes in the concerned States remains with the participating States and Delhi UT or their authorised implementing agencies.

After the Board came into existence, the Board, according to the provisions of the NCR Planning Board Act, 1985, in turn, constituted, a Committee called the Planning Committee for assisting the Board in the discharge of its functions. The Planning Committee has eighteen members under the Chairmanship of the Member-Secretary, NCR Planning Board. (See page 160).

**STUDY GROUPS IN CONNECTION WITH THE PREPARATION OF DRAFT REGIONAL
PLAN 2001—NATIONAL CAPITAL REGION**

STUDY GROUPS ON

1. Economic Profile and Fiscal measures
2. Land-use and Settlement System
3. Regional Transport
4. Physical Infrastructure
5. Power Development
6. Social Infrastructure
7. Environment
8. Tele-Communications

1. STUDY GROUP: ECONOMIC PROFILE AND FISCAL MEASURES

A. ECONOMIC PROFILE—INDUSTRY

1. Shri Vivek Mehrotra
Director of Industries
Government of Haryana
Chandigarh
2. Shri Parmesh Chandra
Director of Industries
Government of Rajasthan
Jaipur
3. Director of Industries
Government of Uttar Pradesh
Kanpur
4. Shri P.K.S. Iyer
Director (Industrial Policy)
Ministry of Industrial Development
New Delhi
5. Shri M.L. Gupta
Director (Administration)
Office of the Development
Commissioner, Small Scale
Industries, Ministry of Industry
New Delhi
6. Shri Ashok Pradhan
Commissioner of Industries
Delhi Administration
Delhi
7. Shri R.N. Trivedi
Managing Director
Uttar Pradesh State Industrial
Development Corporation
Kanpur
8. Smt. Umesh Nanda
Managing Director
Haryana State Industrial
Development Corporation
Chandigarh
9. Managing Director
Rajasthan Industrial
Investment Corporation
Jaipur

10. Shri B. Prasad
Managing Director
Delhi State Industrial
Development Corporation
Delhi

11. Shri B.N. Singh
Chief Regional Planner
NCR Planning Board

12. Shri V.K. Thakore
Sr. Research Officer
NCR Planning Board

Convenor

B. FISCAL MEASURES

1. Ms. Meenaxi Anand Chaudhry
Sales Tax Commissioner
Government of Haryana
Chandigarh

2. Sales Tax Commissioner
Government of Rajasthan
Jaipur

3. Sales Tax Commissioner
Government of Uttar Pradesh
Lucknow

4. Shri P.S. Bhatnagar
Sales Tax Commissioner
Delhi Administration
New Delhi

5. Shri A.N. Prasad
Director (Tax, Policy and Legislation)
Central Board of Direct Taxes
Department of Revenue
Ministry of Finance
New Delhi

7. Dy. Secretary (Tax Research Unit)
Central Board of Excise
Department of Finance
New Delhi

7. Shri V.K. Thakore
Senior Research Officer
NCR Planning Board

Convenor

2. STUDY GROUP: LAND USE AND SETTLEMENT SYSTEM

- | | |
|--|--|
| 1. Shir B.P. Sinha
Chief Town Planner
Government of Haryana
Chandigarh | 6. Shri B.B. Garg
Scientist
Central Building Research Institute
Roorkee |
| 2. Shri H.S. Mathur
Chief Town Planner
Government of Rajasthan
Jaipur | 7. Shri B.N. Singh
Chief Regional Planner
NCR Planning Board |
| 3. Shri N.S. Johri
Chief Town Planner
Government of Uttar Pradesh
Lucknow | 8. Shri R.P. Rastogi
Associate Planner
NCR Planning Board |
| 4. Shri J.C. Gambhir
Director (Perspective Planning Wing)
Delhi Development Authority
New Delhi | 9. Shri P. Jayapal
Assistant Planner
NCR Planning Board |
| 5. Dr. R. Chansarkar
Director
Defence Terrain Research Laboratory
Delhi | 10. Shri J.N. Barman
Assistant Planner
NCR Planning Board |
| | 11. Shri S. Arunachalam
Senior Planning Engineer
NCR Planning Board |
- Convenor

3. STUDY GROUP: REGIONAL TRANSPORT

- | | |
|--|---|
| 1. Shri O.P. Goel
Chief Engineer (Roads)
Public Works Department
Delhi Administration
New Delhi | 5. Shri D.P. Gupta
Chief Engineer (Planning)
Ministry of Surface Transport
Transport Bhavan
New Delhi |
| 2. Shri D.B. Gupta
Chief Engineer (Roads)
Public Works Department
Government of Haryana
Chandigarh | 6. Additional Executive Director
Metropolitan Transport
Railway Board
Rail Bhawan
New Delhi |
| 3. Shri P.K. Lauria
Chief Engineer (Roads)
Public Works Department
Government of Rajasthan
Jaipur | 7. Chief Engineer (Construction)
Northern Railway
Kashmere Gate
Delhi |
| 4. Shri G.C. Gupta
Engineer-in-Chief
Public Works Department
Government of Uttar Pradesh
Lucknow | 8. Chairman-cum-Managing Director
Delhi Transport Corporation
I.P. Estate
New Delhi. |

9. Managing Director
Haryana State Road Transport Corpn.
Chandigarh
10. Managing Director
Rajasthan State Road Transport Corpn.
Jaipur
11. Managing Director
Uttar Pradesh Road Transport Corpn.
Lucknow
12. Chief Superintendent
Northern Railway
Baroda House
New Delhi
13. Secretary (Transport)
Delhi Administration
Old Secretariat
Delhi
14. Transport Commissioner
Government of Haryana
Chandigarh
15. Shri G.J. Misra
Transport Commissioner
Government of Rajasthan
Jaipur
16. Shri D.S. Bains
Transport Commissioner
Government of Uttar Pradesh
Lucknow
17. Prof. N. Ranganathan
Professor of Transport Planning
School of Planning and Architecture
New Delhi
Served also as Consultant

18. Shri J.C. Gambhir
Director (Perspective Planning Wing)
Delhi Development Authority
New Delhi
19. Shri B.P. Sinha
Chief Town Planner
Government of Haryana
Chandigarh
20. Shri H.S. Mathur
Chief Town Planner
Government of Rajasthan
Jaipur
21. Shri N.S. Johri
Chief Town Planner
Government of Uttar Pradesh
Lucknow
22. Shri K.M. Balasubramanian
Dy. Adviser (Transport)
Planning Commission
New Delhi.
23. Shri B.N. Singh
Chief Regional Planner
NCR Planning Board
24. Shri S. Arunachalam
Senior Planning Engineer
NCR Planning Board
25. Shri R.P. Rastogi
Associate Planner
NCR Planning Board

Convenor

4. STUDY GROUP: PHYSICAL INFRASTRUCTURE (Water Supply, Sewage, Drainage, Solid waste management, Low cost sanitation)

1. Shri V. Venugopalan
Adviser
Central Public Health Environmental
Engineering Organisation
Nirman Bhawan
New Delhi
2. Shri K.K. Gandhi
Engineer-in-Chief (Public Health)
Public Works Department
Government of Haryana
Chandigarh
3. Shri M.S. Kachwaha
Addl. Chief Engineer (Public Health)
Public Health Engineering Department
Government of Rajasthan
Jaipur
4. Shri D.P. Singhal
Chief Engineer
Uttar Pradesh Jal Nigam
Lucknow

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|--|--|-----------------|
| <p>5. Shri S. Prakash
Chief Engineer (C) II
Water Supply and Sewage
Disposal Undertaking
New Delhi</p> <p>6. Shri B.N. Singh
Chief Regional Planner
NCR Planning Board</p> | <p>7. Shri P. Jayapal
Assistant Planner
NCR Planning Board</p> <p>8. Shri S. Arunachalam
Senior Planning Engineer
NCR Planning Board</p> | <p>Convenor</p> |
|--|--|-----------------|

5. STUDY GROUP ON POWER DEVELOPMENT

- | | | |
|--|--|-----------------|
| <p>1. Er J.C. Jain
Chief Engineer
U.P. State Electricity Board
Meerut</p> <p>2. Chief Engineer (Planning II)
Central Electricity Authority
New Delhi</p> <p>3. Chief Engineer (Project Planning and
Monitoring)
Rajasthan State Electricity Board
Jaipur</p> <p>4. Chief Engineer (Planning)
Delhi Electricity Supply Undertaking
New Delhi</p> <p>5. Er. J.C. Junerja
Superintending Engineer(Planning)
Haryana State Electricity Board
Punchkula
Haryana</p> | <p>6. Shri B.N. Singh
Chief Regional Planner
NCR Planning Board</p> <p>7. Shri R.P. Rastogi
Associate Planner
NCR Planning Board
New Delhi</p> <p>8. Shri P. Jayapal
Assistant Planner
NCR Planning Board
New Delhi</p> <p>9. Shri S. Arunachalam
Senior Planning Engineer
New Delhi</p> | <p>Convenor</p> |
|--|--|-----------------|

6. STUDY GROUP: SOCIAL INFRASTRUCTURE

- | | |
|---|---|
| <p>1. Dr. Gyan Prakash
Director of Medical and Health Services
Govt. of Rajasthan
Jaipur</p> <p>2. Smt. Kaushal Singh
Special Secretary (Education)
Govt. of Rajasthan
Jaipur</p> <p>3. Dr. S. Shah
Addl. Director, Health Services
Govt. of Haryana
Chandigarh</p> | <p>4. Mrs. Asha Sharma
Director(Higher Education)
Govt. of Haryana
Chandigarh</p> <p>5. Miss Pushpa Abrol
Director State Resource Centre
Office of the Director
School Education
Govt. of Haryana
Chandigarh</p> <p>6. Dr. K. Gidwani
Director, Health Services
Delhi</p> |
|---|---|

7. Dr. K.S. Bhandari
Additional Director of Education
Delhi Adminsitration
Delhi

8. Shri D.K. Joshi
Deputy Director of Education
Meerut

9. Shri J.N. Barman
Assistant Planner
NCR Planning Board

10. Shri V.K. Thakore
Sr. Research Officer
NCR Planning Board

Convenor

7. STUDY GROUP: ENVIRONMENT

1. Dr. S. Mudgal
Director
Forests and Wild Life
Government of India

2. Shir Joseph
Department of Science and
Technology
Government of India

3. Prof. M.C.K. Swamy
School of Planning & Architecture
New Delhi

4. Prof. C.K. Varshney
Jawaharlal Nehru University
New Delhi

5. Shri P.C. Tyagi
Chairman
Central Board for Prevention
and Control of Water Pollution
New Delhi.

6. Shri B.N. Singh
Chief Regional Planner
NCR Planning Board

7. Shri S. Arunachalam
Senior Planning Engineer
NCR Planning Board

8. Shri J.N. Barman
Assistant Planner
NCR Planning Board

9. Shri R.P. Rastogi
Associate Planner
NCR Planning Board

Convenor

8. STUDY GROUP: TELE-COMMUNICATIONS

1. Shri G.T. Narayan
Dy. Director General (Telecom. Plg.)
Deptt. of Telecommunications
Sanchar Bhawan
New Delhi

2. Shri B.M. Khanna
General Manager
Mahanagar Telephone Nigam
Kurshidlal Bhawan
New Delhi

3. District Manager
(Telecommunications)
Faridabad

4. District Manager
(Telecommunications)
Ghaziabad

5. Area Director (Telecom.)
Dehra Dun
Uttar Pradesh

6. General Manager (Telcom.)
Haryana Telecom Circle
Ambala
Haryana

7. Divisional Engineer (Telecom.)
Alwar
Rajasthan

8. Shri Kunwar Fateh Bahadur
Vice Chairman
Meerut Development Authority
Meerut

9. Vice Chairman
Ghaziabad Development Authority
Ghaziabad

10. Mrs. Uma Pillai
Chief Executive Officer
New Okhla Industrial Development
Authority, NOIDA Complex
Ghaziabad (U.P.)

- | | |
|--|--|
| <p>11. District Magistrate
Bulandshahr Distt
Uttar Pradesh</p> <p>12. Shri R.N. Parashar
Chief Administrator
HUDA
Chandigarh</p> | <p>13. Shri Tajinder Singh Sandhu
Director (NCR) & Secy
Urban Improvement Trust
Alwar</p> <p>14. Shri R.P. Rastogi
Associate Planner
NCR Planning Board</p> <p style="text-align: right;">Convenor</p> |
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**STUDIES UNDERTAKEN THROUGH PROFESSIONAL
CONSULTANTS/INSTITUTIONS**

Name of the study	Institutions
1. Migration Studies in the Context of NCR Plan	National Institute of Urban Affairs, New Delhi.
2. Study on Informal Sector in NCR	Society for Development Studies (SDS), New Delhi.
3. Fiscal Policy for National Capital Region	National Institute of Public Finance & Policy New Delhi
4. Computer Modelling for Urban Development	Central Building Research Institute, Roorkee
5. Landuse Analysis based on Landsat Imageries and Aerial Photography	Defence Terrain Research Laboratory, Ministry of Defence, New Delhi
6. Traffic & Transportation Surveys and Studies	Operation Research Group, Baroda
7. Settlement System	Physical Research Laboratory, Ahmedabad
8. Counter—magnet area Study	School of Planning & Architecture, New Delhi

WATER SUPPLY: URBAN

Sl. No.	Sub-Region/ Town	Civic Status	Popula- tion	Area Sq.km	Water Supply Sources	Water Produn. MLD	Per ca- pita consum- tion lpcd.	Popula- tion covered in %	Length of dis- tr.line km	Treat Type/ Unit	Treated Qty. MLD
1		2	3	4	5	6	7	8	9	10	11
I. DELHI UT											
1.	Delhi	UT	5768200	592	R,TW,RW	1837	240	94.3	3762	C,D,F,R,S	1669
II. HARYANA											
1.	Panipat	MC	137923	20	Wells	27.63	159	60	42	P C	27.63
2.	Smalkha	MC	13532	1.13	Wells	0.81	68	50	3.03	P C	0.81
3.	Gohana	MC	26209	6.57	Wells	0.45	35	80	6	P C	0.72
4.	Ganaur	MC	16489	9.06	Wells	0.45	40	30	7.5	P C	0.45
5.	Sonepat	MC	109337	21.37	Canals Wells	15	115	100	90	C C	15.00
6.	Rohtak	M	166767	22.03	Canal	12	95	80	35	P S	12.00
7.	Meham	MC	11722	3.49	Canal	0.77	63	90	10	C S	0.77
8.	Kalanaur	MC	12380	5.7	Canal	0.9	68	90	8.5	— S	0.90
9.	Beri	NAC	13490	2.59	Canal	0.68	45	85	8	— —	0.68
10.	Bahadurgarh	MC	37485	9	Canal	4.5	80-90	70	49.3	C R	4.50
11.	Jhajjar	MC	24247	6	Canal	1.42	50	80	15	C S	1.42
12.	Gurgaon	MC	100877	24.13	T. wells	1.40	63	80	56	P C	1.40
13.	Farrukh Nagar	MC	6367	2.9	wells	0.80	60	70	6.5	C C	0.80
14.	Ferozpur Zhirka	MC	9400	8.86	wells	0.41	70	80	5	P C	0.41
15.	Haily Mandi	MC	10140	2.59	wells	1.50	70	80	5	C C	1.50
16.	Pataudi	MC	8422	3.89	wells	0.90	50	70	5.5	C C	0.90
17.	Shona	MC	12667	3.70	wells	0.60	32	80	7	P C	0.60
18.	Taoru	MC	6922	35	Wells	0.23	70	60	3	P C	0.23
19.	Nuh	MC	5992	3	Wells	0.27	70	90	8	P C	0.27
20.	Rewari	MC	51562	6.08	Wells	5	85	85	30	P C	5.00
21.	Bawal	MC	7760	0.36	Wells	0.45	50	60	—	C C	0.45
22.	Faridabad NIT, Old F.Bad & Ballahgargh	MC	330864	178.24	Wells	27	136	60	200	C C	27.00
23.	Palwal	MC	47335	5.52	Wells	4.5	70	85	14	P C	4.5
24.	Hathin	MC	6553	1.99	Wells	0.33	55	60	4.4	C C	0.33
25.	Hassanpur	MC	5109	0.93	Wells	0.20	30	100	3.55	P C	0.20
26.	Hodel	MC	18740	2.25	Wells	0.55	30	70	10	C C	0.55
27.	Jharasa	CT	8412	9.99	—	—	—	—	—	— —	NOT

ANNEXURE IV

& RURAL 1986

Sport Sources		Sport sources Pop%	Revenue Rs. lakhs	Connections		Stand posts	Households/ Connections	Cost of Prodn. Rs./kl	Present Coverage
HP	Others			Total	Metred				
12	13	14	15	16	17	18	19	20	21
—	—	68	2778.15	521288 6900 (Spot)	511234	3000	NA/479388	0.476	D
4000	—	40	14.00	12388	518	370	50110/472	0.60	D
2000	—	50	0.70	617	—	5	3500/—	0.80	D
500	—	20	2.26	1925	500	45	7000/475	0.40	B
—	—	60	16.92	920	370	15	3756/355	0.26	D
—	—	—	12.00	9290	3490	597	16743/—	1.18(C) 0.40(W)	D
2500	W	20	31.20	21623	21623	1005	28634/16750	1.00	D
20	2(TW)	10	1.46	1225	830	10	1980/668	0.85	D
15	8	5	1.2	960	480	52	1962/480	0.70	D
—	—	20	1.20	1020	1020	10	2100/990	0.80	D
215	11	30	0.25	4384	4384	102	7512/4062	0.80	D
—	—	20	2.00	2500	2500	30	4600/2500	0.80	D
400	—	3	6.00	8525	8426	200	20000/8161	0.61	D
15	—	10	1.00	660	—	24	NA/NA	0.61	D
—	—	NA	1.14	820	—	12	2430/NA	0.60	A
30	—	15	1.00	700	—	35	1518/NA	0.70	C
25	W	10	0.75	520	—	36	229/—	0.70	D
4	—	—	1.02	851	851	42	2052/851	0.41	D
—	—	—	—	483	—	24	1690/—	12/M/Tap	A
—	3	—	1.34	733	—	10	1200/—	0.12	A
—	—	—	8.40	6917	—	252	8180/—	1.00	D
—	—	40	0.88	723	—	10	2596/NA	0.45	D
1200	70 TW	NA	24.56	16573	6530	573	72119/6500	0.85	C
150	10	10	4.65	4500	4500	128	10924/4370	0.50	C
—	—	—	—	600	128	55	942/128	0.40	D
—	—	—	4.54	368	88	10	1000/88	0.55	B
—	—	—	1.50	1453	712	27	3574/712	0.40	A
AVAILABLE	—	—	—	—	—	—	—	—	—

1	2	3	4	5	6	7	8	9	10	11
III. RAJASTHAN										
1. Alwar	M	145000	80	Wells	17.97	106	NA	62.5	C C	17.97
2. Tijara	—	—	—	—	NOT AVAILABLE	—	—	—	—	—
3. Kairthal	—	—	—	—	NOT AVAILABLE	—	—	—	—	—
IV. UTTAR PRADESH										
1. Meerut	MC	417395	63.40	Canal Wells	7.20 68.25	153	75	180	P C&F	NA
2. Mawana	MBD	37603	5	Wells	3.36	80	60	16.5	P C	3.36
3. Sardhana	MB	30138	14.05	Wells	0.792	35	45	7.522	P C	NA
4. Baraut	MB	46292	7.50	Wells	0.96	17	70	11.50	P C	NA
5. Kithor	TAC	13791	4.5	Wells	0.68	44	75	7.614	P C	NA
6. Lawar	TAC	11535	7.5	Wells	1.17	90	75	9.50	P C	NA
7. Parikshat Garh	TAC	11328	6.25	Wells	0.65	51	60	8.755	P C	NA
8. Phalvada	TAC	10357	4.5	Wells	0.45	39	60	7.0	P C	NA
9. Shahjahanpur CT	8867	NA	—	—	—	—	—	—	—	—
10. Siwal Khas	TAC	10278	60.58	—	—	—	—	—	—	—
11. Tikri	TAC	11315	—	—	—	—	—	—	—	—
12. Kharkhoda	TAC	8985	2.059	Wells	0.4	40	70	11.00	— C	NA
13. Hastinapur	TAC	11637	3.15	Wells	1.13	87	60	12	P C	NA
14. Khedka	TAC	24871	12	Wells	1.94	70	75	NA	P C	NA
15. Karnwal	TAC	9895	6.33	—	—	—	—	—	—	—
16. Daurala	TAC	9146	NA	—	—	—	—	—	—	—
17. Doghat	TAC	10019	2.1	—	—	—	—	—	—	—
18. Chhaprauli	TAC	14757	6.41	Wells	1.08	65	50	5.47	P C	NA
19. Raghpat	MB	17157	8	Wells	1.485	77	70	11	P C	NA
20. Bahsuma	TAC	7906	1.8	—	—	—	—	—	—	—
21. Abdullapur	TAC	6383	4	Wells	0.22	31	50	3.163	P C	NA
22. Agarwal Mandi	TAC	9350	1	Wells	0.87	70	70	1.785	P C	NA
23. Ami Nagar	TAC	6887	8	Wells	0.34	45	70	3	P C	NA
24. Ghaziabad	MB	287770	64	Wells	59	174	70	425	P C	NA
25. Modi Nagar	MB	87665	14	Wells	2.47	24	60	10.051	P C	NA
26. Murad Nagar	MB	26047	10	Wells	2.45	80	60	8.118	P C	NA
27. O.F. Murad Nagar	NA	13147	2.69	NA	NA	NA	NA	NA	NA	NA
28. Dadri	MB	19723	9	Wells	1.92	82	65	10	P C	NA
29. Hapur	MB	102837	14.02	Wells	13.4	110	60	67	P C	NA
30. Pilkhva	MB	37884	4.53	Wells	3.2	72	60	12.2	P C	NA
31. Babugarh	TAC	2389	2	Wells	0.57	213	85	2.85	P C	NA
32. Farid Nagar	TAC	9116	0.44	Wells	2.25	220	80	9.14	P C	NA
33. Patala	TAC	7847	NA	Wells	1.73	198	90	11.7	P C	NA
34. Niwadi	TAC	7078	NA	Wells	1.296	164	60	5.3	P C	NA
35. Loni	TAC	10259	NA	Wells	1.92	168	80	NA	P C	NA

12	13	14	15	16	17	18	19	20	21
16	12	8.3	52.500	16390	16390	141	25142/75345	NA	B&C
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
6000	500	25	34.610	33266	30000	509	56211/28000	NA	D
3000	15	40	0.0250	1534	1450	28	8573/1440	0.20	D
3600	—	50	0.505	786	786	23	8250/786	0.16	D
5000	25	30	0.290	1990	1990	98	9557/1980	0.20	D
NA	NA	NA	NA	368	368	—	1870/350	1.30	D
NA	NA	NA	NA	365	—	—	1836/—	NA	D
1500	10	40	0.369	531	164	13	2345/164	0.14	D
NA	NA	NA	NA	312	—	7	1657/—	0.22	D
—	—	—	—	—	—	—	NA/—	—	—
—	—	—	—	—	—	—	600/—	—	—
—	—	—	—	—	—	—	2250/—	—	—
NA	NA	NA	0.362	287	250	11	1746/250	0.33	D
350	—	40	0.288	446	446	100	1200/446	0.15	D
NA	NA	NA	1.214	1280	506	36	6000/506	0.20	D
NA	NA	NA	—	—	—	—	1700/—	—	—
NA	NA	NA	—	—	—	—	1450/—	—	—
NA	NA	NA	—	—	—	—	2100/—	—	—
1200	4	50	0.183	425	425	15	3434/419	0.20	D
1500	10	30	0.296	1431	1350	42	4400/1335	0.20	D
NA	NA	—	—	—	—	—	2000/—	—	—
400	7	50	0.141	222	222	22	1121/222	0.16	D
NA	NA	NA	0.059	226	—	17	900/—	1.75	D
NA	NA	NA	NA	363	246	20	1985/246	NA	D
NA	NA	NA	63.489	NA	33469	510	56470/NA	0.40	D
NA	NA	NA	1.037	2700	200	4	16000/200	0.15	D
NA	NA	NA	0.751	799	185	65	7000/175	0.10	D
NA	NA	NA	NA	NA	NA	NA	2550/—	NA	NA
100	NA	2	0.887	1134	—	20	3290/—	0.75	D
NA	NA	NA	11.054	5637	5179	150	16487/3799	0.25	D
NA	NA	NA	NA	1433	1884	36	6400/1433	0.60	D
16	NA	NA	0.148	210	—	6	600/—	0.30	D
NA	NA	NA	NA	NA	NA	NA	1570/—	NA	B
NA	NA	NA	NA	NA	NA	NA	1350/—	NA	A
NOT AVAILABLE		NA	NA	100	NA	2	1200	NA	D
NOT AVAILABLE		NA	0.518	696	NA	31	1572/NA	0.10	D

1	2	3	4	5	6	7	8	9	10	11
36. Garmukteshwar	NA	17914	32	Wells	2.88	136	60	15	P C	NA
37. Bulandshahr	MB	103436	12.315	Wells	9.83	80	600	67.30	D C	9.83
38. Khurja	MB	67119	10.36	Wells	4.84	60	50	33.62	D C	
39. Jahangirabad	MB	29301	3.84	Wells	1.10	35	50	16.9	D C	
40. Debai	MB	22430	2.330	Wells	2.40	90	50	31.85	D C	
41. Anoop Shahr	MB	15193	2.59	Wells	2.01	112	50	10	D C	
42. Sikandarabad	MB	43135	8.78	Wells	1.92	40	60	20	D C	
43. Gula othi	MB	24414	2.23	Wells	2.14	75	50	11.4	D C	
44. Siyana	NA	22410	5.17	—	—	—	—	NOT	AVAILABLE	
45. Sikarpur	TAC	21499	0.49	—	—	—	—	—	—	—
46. Aurangabad	TAC	11682	3.00	—	—	—	—	—	—	—
47. Bugrasi	TAC	8307	6.4	—	—	—	—	—	—	—
48. Bhawan Bahadur Nagar	TAC	6770	3.75	—	—	—	—	—	—	—
49. Chhatari	TAC	5862	5.97	—	—	—	—	—	—	—
50. Naraura	TAC	9573	5.44	—	—	—	—	—	—	—
51. Jewar	TAC	15275	2.80	Wells	0.80	45	50	10.5	D C	
52. Dankaur	TAC	8221	9.89	—	—	—	—	—	—	—
53. Kakod	TAC	5299	1.23	—	—	—	—	—	—	—
54. Bilaspur	TAC	5299	1.23	—	—	—	—	—	—	—
55. Rabupura	TAC	8999	1.37	Wells	1.0	100	50	5.0	D C	
56. Pahasu	TAC	9016	0.23	—	—	—	—	—	—	—
57. Jahangirpur	TAC	6447	2.84	—	—	—	—	—	—	—
58. Khanpur	TAC	8311	1.63	—	—	—	—	—	—	—

KEYS: W: Wells
TW: Tube Wells
S: Spring

C: Complete
P: Partial

Treatment
C: Chlorination
D: Sedimentation
F: Clariflocculation
R: Rapid Sand Filter

S: Slow Sand Filter
O: Others

12	13	14	15	16	17	18	19	20	21
410	NA	20	0.829	556	NA	64	3000/NA	0.50	D
NA	NA	NA	6.641	7166	7166	144	16946/7166	0.19	D
NOT AVAILABLE				2960	2960	46	8800/2960	0.82	C
NOT AVAILABLE							4940/-	NA	D
NOT AVAILABLE				681	681	53	4514/681	NA	C
NOT AVAILABLE				565	565	20	3900/565	NA	C
NOT AVAILABLE				2100	2100	40	8000/2100	0.14	C
NOT AVAILABLE			0.95	1000	1000	40	3100/1000	0.20	C
									E
	-	-	-	-	-	-	3000/-	-	E
	-	-	-	-	-	-	2600/-	-	E
	-	-	-	-	-	-	1087/-	-	E
	-	-	-	-	-	-	950/-	-	E
	-	-	-	-	-	-	1370/-	-	E
	-	-	-	-	-	-	910/-	-	E
NOT AVAILABLE		-	0.332	708	708	53	3900/708	0.23	C
	-	-	-	-	-	-	1100/-	-	E
	-	-	-	-	-	-	-40/-	-	E
	-	-	-	-	-	-	757/-	-	-
	-	-	-	150	150	15	2460/150	NA	C
							2000/-	NA	E
-	-	-	-	-	-	-	920	-	E
	-	-	-	-	-	-	1800/-	-	E

Present Coverage:

A: Fully Covered; No augmentation required

B: Fully Covered; Service level augmentation needed

C: Partly Covered; Requires extension of distribution

D: Party Covered; Requires extension of network and capacity augmentation

E: No safe supply

SANITATION: URBAN

Sewerage System

Sl.	Sub-Region/ Town	Availa- bility Yes/No	Type	Popula- tion covered	Vol. of sewage MLD	WB	No. of House holds covered			Treat- ment	Dispo- sal	Annual cost Rs. lacs
							SL	ST	O			
1	2	3	4	5	6	7	8	9	10	11	12	
I. DELHI UT												
1.	Delhi	Yes	PC	5295000	1467	10.58	N.A.			AS/TF/OP	Irri- SWD	4275.35
II. HARYANA												
1.	Panipat	Partly	PC	60000	6.97	2200	1500	1200	8632	—	On land	NA
2.	Samalkha	NO	—	—	—	—	—	—	—	—	—	—
3.	Gohana	Partly	PC	7000	0.18	100	—	400	25709	—	Drain	NA
4.	Ganaur	No	—	—	—	—	—	—	—	—	—	—
5.	Sonepat	Partly	S	87470	2.5	43000	21800	32800	11737	No	Drain	2.97
6.	Rohtak	Partly	S	83384	12.82	16000	—	—	—	—	Irrign.	120.00
7.	Meham	Partly	PC	3922	NA	—	—	—	—	No	Irrign.	0.66
8.	Kalanaur	No	—	—	—	—	—	—	—	—	—	—
9.	Beri	No	—	—	—	—	—	—	—	—	—	—
10.	Bahadurgarh	Partly	C	20000	2.87	1888	16	—	—	—	Irrign.	1.95
11.	Jhajjar	Partly	S	16245	1 cus.	375	—	—	—	—	Irrign.	0.50
12.	Gurgaon	Partly	PC	65%	2.5cus	75000	350	—	—	—	On land	NA
13.	Faruknagar	No	—	—	—	—	—	—	—	—	—	—
14.	Ferozepur Zirka	No	—	—	—	—	—	—	—	—	—	—
15.	Sohna	No	—	—	—	—	—	—	—	—	—	—
16.	Pataudi	No.	—	—	—	—	—	—	—	—	—	—
17.	Haily Mandi	Partly	PC	80%	0.04	10010	130	—	—	—	Irrign.	0.80
18.	Taoyu	No	—	—	—	—	—	—	—	—	—	—
19.	Nuh	Partly	S	2500	NA	—	400	—	—	No	Irrign.	0.07
20.	Rewari	Partly	S	60%	3.5	10000	3800	5000	32762	No	Irrign.	0.70
21.	Bawal	Partly	C	50%	4.62	—	450	—	—	—	—	0.95
22.	Faridabad	Partly	PC	170630	NA	170630	13496	—	146738	—	Open	8.49
	NIT, Old F'Bad & B'garh.										Channal/ drain	
23.	Palwal	Partly	PC	14214	0.14	14200	4000	4000	25135	—	Drain	0.325
24.	Hathin	No	—	—	—	—	—	—	—	—	—	—
25.	Hassanpur	No	—	—	—	—	—	—	—	—	—	—
26.	Hodel	No	—	—	—	—	—	—	—	—	—	—
27.	Jharsa	No	—	—	—	—	—	—	—	—	—	—

ANNEXURE V

& RURAL 1986

Drainage					Solidwaste				
Drain- age Yes/No	Type Open/ covered	Popula- tion covered	Disposal	Annual cost Rs. lacs	Manage- ment Yes/No	Popula- tion covered	Vol. of Solid waste Cu.Mt	Disposal	Annual cost Rs. lacs
13	14	15	16	17	18	19	20	21	22
Yes	SOC	NA	Irrign. SWD	Combined cost	—	—	—	Not Available	—
Partly	C.O	79000	Irrign.	18.59	—	—	—	—	—
Partly	C.O.	12000	Ponds	0.95	Yes	13532	40	Pits	0.95
No	—	—	—	—	Yes	13104	50	Open dumping	0.35
No	—	—	—	—	—	No	—	—	—
Partly	S.O/O	100%	Sewer	0.72	Yes	54669	250	dumping	1.00
Partly	C/O	83384	Sewer	9.00	Yes	83384	16001	Compost	NA
Yes	—/O	3800	Drain	0.10	Yes	3922	4	Land fill	0.30
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	Yes	13490	15	Open dumping	1.00
Partly	S.O	35000	Drain	0.40	Yes	14994	7	—	0.30
No	—	—	—	—	Yes	21322	25	dumping	3.00
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
Partly	S.O.	9400	On land	NA	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
Partly	C.O	6922	On land	NA	No	—	—	—	—
Partly	—/O	5992	—	—	No	—	—	—	—
Partly	C.O.	20%	Drains	0.50	Yes	80%	36T	Land fill	0.155
Partly	C.O.	1678	Drains	0.10	Yes	1678	9	Land fill	0.95
Partly	S.O.	NA	Sewer/ Drains	71.08	—	—	—	—	—
Partly	CO	20%	Drain	—	Yes	33137	51	Land fill	—
Partly	CO	4500	Pond	—	Yes	6553	12.18	Land fill	0.94
Partly	CO	4000	Irrig.	NA	Yes	5900	8.57	Land fill	0.84
Partly	SO	—	Pond	—	—	—	—	—	—
No	—	—	—	—	No	—	—	—	—

[illegible]

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12
37. Gurmukteshwar	No	—	—	—	—	—	—	—	—	—	—
38. Bulandshahr	No	—	—	6.88	—	—	—	—	—	—	—
39. Khurja	No.	—	—	3.40	—	—	—	—	—	—	—
40. Jahangirabad	No	—	—	0.80	—	—	—	—	—	—	—
41. Debai	Partly	S	18500	1.60	2000	—	—	—	—	Land	NA
42. Annopshahr	No	—	—	1.4	—	—	—	—	—	—	—
43. Sikandrabad	No	—	—	1.4	—	—	—	—	—	—	—
44. Gula Othi	No	—	—	1.5	—	—	—	—	—	—	—
45. Siana	No	—	—	—	—	—	—	—	—	—	—
46. Sikaypur	No	—	—	—	—	—	—	—	—	—	—
47. Aurangabad	No	—	—	—	—	—	—	—	—	—	—
48. Bugrasi	No	—	—	—	—	—	—	—	—	—	—
49. Bhawan Bahadur Nagar	No	—	—	—	—	—	—	—	—	—	—
50. Chhatri	No	—	—	—	—	—	—	—	—	—	—
51. Naraura	No	—	—	—	—	—	—	—	—	—	—
52. Jewar	No	—	—	—	—	—	—	—	—	—	—
53. Dankar	No	—	—	—	—	—	—	—	—	—	—
54. Kakore	No	—	—	—	—	—	—	—	—	—	—
55. Bilaspur	No	—	—	—	—	—	—	—	—	—	—
56. Babupura	No	—	—	—	—	—	—	—	—	—	—
57. Pahasu	No	—	—	—	—	—	—	—	—	—	—
58. Jahangirpur	No	—	—	—	—	—	—	—	—	—	—
59. Khanpur	No	—	—	—	—	—	—	—	—	—	—

KEYS: Sewerage

Type: P—Partly
C—Consumed
S—Separate

Drainage

C—Covered

O—Open

S—Separate

SWD—Surface Water Drains

13	14	15	16	17	18	19	20	21	22
Partly	PO	NA	Natural	NA	NA	NA	NA	NA	NA
Partly	PO	61000 Depression			Yes	73230	NA	Landfill	—
Partly	PO	40000 Depression			Yes	47520	NA	Land fill	NA
Partly	PO	17000 Depression			Yes	20745	NA	Land fill	NA
Partly	PO	20000 Depression		—	Yes	15880	NA	Land fill	NA
Partly	PO	10000	—	—	Yes	10760	NA	Land fill	NA
Partly	PO	26000 Depression		—	Yes	30540	NA	Land fill	NA
Partly	PO	14000 Depression		—	Yes	17290	NA	Land fill	—
Partly	PO	—	—	—	Yes	15870	NA	Land fill	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—
No	—	—	—	—	No	—	—	—	—

PLANNING COMMITTEE

- | | | | |
|---|----------|---|------------|
| 1. Member Secretary
NCR Planning Board | Chairman | 11. Chief Town Planner
Government of Uttar Pradesh | Member |
| 2. Joint Secretary in the Ministry
of Urban Development dealing
with the work relating to NCR | Member | 12. Joint Adviser Representative
Planning Commission
Government of India | Member |
| 3. Secretary-in-charge of NCR
work in the State of Haryana | Member | 13. Chief Engineer (Planning)
Representative, Ministry of
Shipping and Transport
Government of India | Member |
| 4. Secretary-in-charge of NCR
work in the State of Rajasthan | Member | 14. Director (Power)
Representative, Ministry of
Energy, Government of India | Member |
| 5. Secretary-in-charge of NCR
work in the State of
Uttar Pradesh | Member | 15. Director (Planning)
Representative, Ministry of
Railways, Government of India | Member |
| 6. Secretary-in-charge of NCR
work in the Delhi Union
Territory | Member | 16. Deputy Director General (T.P.)
Representative, Ministry of
Communications,
Government of India | Member |
| 7. Vice Chairman
Delhi Development Authority | Member | 17. Chairman and Managing Director
Housing & Urban Development
Corporation | Member |
| 8. Chief Planner
Town & Country Planning
Organisation | Member | 18. Chief Regional Planner
NCR Planning Board | Member |
| 9. Director, Town Planning
Department Government
of Haryana | Member | | (Convenor) |
| 10. Chief Town Planner
Government of Rajasthan | Member | | |

MINUTES OF THE SIXTH MEETING OF THE
NCR PLANNING BOARD HELD ON 21.7.1987 IN THE
PARLIAMENT HOUSE ANNEXE, NEW DELHI

The following were present :

- | | | |
|-----|---|------------------|
| 1. | Smt. Mohsina Kidwai
Union Minister for
Urban Development | Chairperson |
| 2. | Shri Madhavarao Scindia
Union Minister of State for Railways | Member |
| 3. | Shri Sujan Singh Yadav
Minister for Urban Development
Government of Rajasthan | Member |
| 4. | Shri Sampath Singh,
Minister for Housing & Urban Development
Government of Haryana | Member |
| 5. | Smt. Padma Seth
Minister of State for Urban Development
Government of Uttar Pradesh | Member |
| 6. | AVM H.L. Kapoor
Lt. Governor of Delhi | Member |
| 7. | Shri Jag Parvesh Chandra
Chief Executive Councillor, Delhi | Member |
| 8. | Shri D.M. Sukthankar
Secretary
Ministry of Urban Development | Member |
| 9. | Shri P.P. Nayyar,
Secretary
Ministry of Surface Transport | Member |
| 10. | Shri K.K. Mathur
Chief Secretary
Delhi Administration | Member |
| 11. | Shri E.F.N. Reberio,
Chief Planner
Town & Country Planning Organisation | Member |
| 12. | Dr. Rakesh Mohan
Adviser (HUD)
Planning Commission | Member |
| 13. | Shri K.K. Bhatnagar
NCR Planning Board | Member-Secretary |

The Chairperson, Smt. Mohsina Kidwai, Union Minister for Urban Development, welcomed the Members of the Board, particularly the new Members. She also introduced the new Member-Secretary of the Board. Discussion on Agenda items was then taken up and the following decisions were taken.

Agenda Item No. 1: Confirmation of the Minutes of the Fifth Meeting of the Board held on 17th February, 1987

The minutes of the fifth meeting of the Board were confirmed.

Agenda Item No. 2: Action taken on the Minutes of the Fifth Meeting of the Board

The Member-Secretary explained at length the action taken on the decisions taken in the fifth meeting. Railway Minister enquired whether the Members from the States had received these papers, and thus had had the opportunity to offer comments. Member-Secretary informed that agenda papers were sent through special messengers to all the States well in time.

Agenda Item No. 3: Business transacted by the Planning Committee/Project Sanctioning and Monitoring Group/Personnel Group etc.

Member-Secretary informed the Board about the business transacted by the above bodies since its Fifth meeting. The Members noted the same.

Agenda Item No. 4: Annual Report of the Board for the year 1986-87

The Member-Secretary briefly explained the contents of the Annual Report of the Board. The Board approved the Annual Report.

Agenda Item No. 5: Suggestion for the Co-option of VC DDA as a Member of the Board

The Member-Secretary explained to the Board the necessity of co-opting the VC DDA on the Board. The Board unanimously agreed to the proposal.

Agenda Item No. 6: Amendment to the NCR Planning Board Regulations, 1985

The Member-Secretary explained the necessity for amending the Regulation No. 5 regarding House Rent Allowance to the employees of the Board. The Board approved the following proposal to amend the said Regulation.

The Officers and employees of the Board at Delhi shall be entitled to :-

- either twenty percent (20%) of their pay in the pre-revised scale of pay : (for officers who were in service prior to 1.10.1986)
- or the slab rates of HRA as prescribed by the Government on the recommendations of the Fourth Pay Commission, w.e.f. 1.10.1986.

Agenda Item No. 7: Delegation of Financial & Administrative Powers to the Member-Secretary

The Board agreed to the delegation of financial and administrative powers as proposed in the item to the Member-Secretary of the Board.

Agenda Item No. 8: Uniform Fiscal Policy for the National Capital Region

The Member-Secretary explained the proposal contained in the agenda item for setting up of a Committee of Finance Secretaries of the participating States and the Union Territory of Delhi and the representatives of the Central Ministries concerned, under the Chairmanship of Secretary, Ministry of Urban Development, to propose measures to be taken for bringing about a proper coordination in the fiscal policy in the Region. Secretary, U.D. emphasised the necessity for a rational tax structure in the Region and commended the setting up of an institutional arrangements for furthering the NCR objectives and for providing a forum where proposals could be discussed from time to time. Reacting to the proposal, the Lt. Governor of Delhi explained the background and the justification for the

existing sales tax etc. rates in vogue in Delhi. He stated that, historically, Delhi had grown to be an important distributive centre for several commodities because of the fiscal policies which had been followed over a long time. He explained that in spite of that, the trade in Delhi did not really seem to enjoy a large degree of protection as was made out to be. For example, mainly only on 29 items, the rates of sales tax in Delhi were lower whereas on 30 items they were almost at par with the rates in other States and on 28 others, they were even higher. He stated that lately some of the neighbouring States had reduced sales tax on certain items drastically, which had resulted in the shifting of trade in those commodities from Delhi to those States. He supported the idea of having some coordination in the tax structure in the Region but wanted that it should not be at the cost of Delhi and no changes may be made unless the proposed Committee had met and given its proposals.

The Railway Minister stated that while the stand taken by Delhi Union Territory about fiscal policy was understandable from the point of view of safeguarding the local interests of Delhi, it appeared to be in conflict with their keen desire to reduce the pressure of population in Delhi. There was, thus, a dilemma. He further stated that in case the pressure of population is to be reduced, some reduction in the pace of growth of economic activities in Delhi will have to be accepted. It is also likely that this may result in some reduction in the rate of growth of tax revenues in Delhi and some ways and means to compensate Delhi for this will have to be explored. The Lt. Governor said that the policy measures for reducing the pressure of runaway growth of population in Delhi, as provided in the NCR Plan, were quite clear and acceptable in principle. The desired result should, however, be brought about more by a rapid development of infrastructure in the priority towns of the NCR than by

depressing the quality of life in Delhi. UDM observed that the proposed draft Plan of the Region did provide for this, though, due to resource constraints it had not been possible to register much progress in developing the infrastructure in the NCR priority towns. The Board was trying to impress upon the Planning Commission the urgency to release more funds so that the objectives of the NCR could be achieved without adversely affecting the economic activities of Delhi. She further stated that the problems relating to tax structure in the three participating States and in Delhi could be mitigated through discussions and hence the proposal for the setting up of the Committee may be approved.

The Railway Minister intervening in the discussions said that the apparent contradiction in what would be in the interest of development of the NCR and the priority towns vis-a-vis how it would affect Delhi was posing some problems to the Central Ministries as well in deciding inter-se priority of schemes and, therefore, the sooner it is satisfactorily resolved the better.

Shri Sampath Singh, Urban Development Minister, Haryana, stated that this issue of coordinated and harmonised fiscal policy had been discussed in several meetings of the Board and its Committees but till now no conclusions had been arrived at. He did not visualise any contradiction in Delhi trying to curb its population growth and the neighbouring areas of the NCR providing facilities for development. However, in the present situation when infrastructural facilities in the NCR were not of the desired standards and the structure of taxation in Delhi was also favourable to trade and commerce in Delhi, there was a tendency for economic activities to get gravitated towards and get concentrated in Delhi, thereby causing revenue loss to the neighbouring States. This situation was not conducive to meeting the objectives of NCR Plan. He suggested that these activities could easily

be shifted to the peripheral areas of the NCR. The UDM re-iterated that the NCR Plan was an attempt to promote such a situation and again urged that the constitution of the proposed Committee be approved. After some further discussions, it was decided to constitute the proposed Committee and the UDM desired that its recommendations should be placed in the next meeting of the Board.

Agenda Item No. 9: Draft Regional Plan - Policies, Proposals etc.

Secretary, U.D. introduced the item and stated that in accordance with the requirements of the Act, the Board has to give its approval for publishing the draft Plan for inviting comments and suggestions from the public, participating States, local bodies in the National Capital Region and the Central Ministries. The comments received will be analysed and, in the light of those comments, the final draft, with the required modifications and alterations, will be submitted to the Board for its final approval. He requested that if the Members had any comments on the draft at this stage, they could make those comments so that if necessary, the draft could be modified before publication.

The Railway Minister drew the attention of the Board to the proposals contained in Chapter 5 of the Plan relating to Transport. He explained that though it was the accepted policy of the Railways to increase the number of coaches on the long distance trains, they were facing several difficulties due to short length of platforms and non-availability of other infrastructure facilities. Provision of these facilities required large sums of money and hence the Railways may be able to achieve this objective only over a somewhat longer time than as a short term measure. He also suggested that the confusion regarding the utilisation of ring rail in Delhi should be completely cleared. In the scheme of things for the Railways, this was primarily a freight avoiding line for Delhi though it could be used as a passenger avoiding line also, but it was never meant to be a part of the urban transport system of Delhi. In this context, he welcomed the initiative taken by the maharashtra Government for meeting part of the cost of providing the rail link between New Bombay and Bombay and stated that a similar initiative to meet the needs of Delhi was called for. He noted that the response of Delhi Administration in this connection was quite favourable and encouraging. He referred to the Task Force which was going into the question of a suitable mass transit system for Delhi

and the initiative taken by the Ministry of Railways to propose a consortium approach to solving the Metropolitan transport problems. Regarding the proposed additional line to Punjab and Haryana for rationalisation of freight traffic movement, he stated that this was an on-going exercise and there were other possibilities also under consideration with a similar objective. Regarding the other long term measures suggested, he stated that setting up of another passenger terminal and provision of a 4th line at Tughlakabad were under consideration but the details will have to be worked out and specific views could be formulated only after that. Regarding the proposals mentioned at 3 (a), (b), (c), (d) and (e), he stated that none of these works were in the plans prepared by the Railways and even if they are included in the Draft NCR Regional Plan, it should not be construed that the Railways had agreed to them. He also made it clear that due to financial constraints, the Railways may not be able to provide additional resources for NCR Railway Schemes. On a suggestion from the Chairperson that Railways should make some budget provision in the name of the NCR, he stated that funds for the NCR proposals included in the Railways' own plan would be made available but for any other proposals, Railways could implement them only if extra funds specifically earmarked for such proposals are made available.

Intervening, Secretary, U.D. clarified that the draft Regional Plan was an attempt to look at the needs of the Region on a perspective basis upto 2001 and to propose investments necessary to meet them. There could certainly be some variance in the priorities given in the Plan and the priorities as decided by the Ministries. That

.../-

tainly did not imply, that the respective Ministries had concurred in the proposals included in the NCR Draft Regional Plan and was going to take up the respective schemes for immediate implementation by providing funds for them.

The Railway Minister wanted to know about the identification of counter-magnet cities/towns. The Member-Secretary clarified that 36 places had been identified in the first round of the study undertaken by the School of Planning & Architecture, which had been indicated in the Plan. The Study was likely to take 3-4 months more for finalisation and its conclusions would be available for inclusion in the final Draft Plan when it is presented to the Board for consideration and approval.

The Vice Chairman, DDA, the Urban Development Minister, Haryana and the Chief Town Planner, TCPO impressed upon the need of retaining the outer ring rail proposal connecting Khurja, Palwal, Rewari and Rohtak. They said that the proposal was included in the Interim Development Plan and was essential not only to cater to the need of diverting freight traffic so that it does not pass through Delhi but also for releasing the available rail facilities for commuter traffic. The VC DDA also suggested that the Plan need not mention the locations of the proposed rail terminals in Delhi since their finalisation would take some time and would be a part of the exercise being undertaken in connection with the modifications to the Delhi Master Plan. The Member-Secretary explained that though the proposal for such a ring rail was included in the Interim Development Plan, the consultants, i.e. M/s. Operations Research Group, Baroda, had not found it economically justifiable and of priority and hence it had to be dropped from the perspective upto 2001. He further explained

that the Consultants had taken into consideration the projected increase in population and the likely growth of economic activities as well as the direction of the growth, before coming to this conclusion. The Railway Minister, quoting from the Plan, supported this view and stated that this link could be considered for a longer perspective beyond 2001, as stated in the Plan. The Secretary, U.D. further explained that in view of the studies conducted by the Consultants there had to be a change in the priorities. The Consultants had found some other proposals to be worthy of being given a higher priority and these have, accordingly been included in the Plan.

On a query from the Secretary, Ministry of Surface Transport, it was clarified that the traffic needs of Delhi Urban Area would be taken care of in the Delhi Master Plan and hence did not find mention in this Plan. The Urban Development Minister of Uttar Pradesh also impressed upon the need for keeping the long distance trains away from the main Delhi corridor to reduce load on this corridor.

On a suggestion from the Chairperson, there was a general discussion on various proposals contained in the Plan. The Lt. Governor expressed doubts about the population projections given in the Plan and felt that these may prove to be on the lower side. The Chief Planner, TCPO, suggested that a shift in priorities was extremely necessary in the realm of tele-communications, power supply, transport needs, etc., in favour of the peripheral areas, including priority towns of the National Capital Region. The Delhi Metropolitan Area and the Delhi Urban Area should come next in this order of priorities. The Chief Secretary, Delhi Administration wanted to know whether detailed proposals had been prepared for the priority towns of the Region so that decisions could be taken in regard to investment in strengthening the infrastructure of these towns. The Member-

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Secretary stated that detailed proposals, first for 8 priority towns and complexes and later, for 3 priority towns, as desired by the Board in its last meeting, had been prepared and submitted to the Planning Commission for their consideration. The Chief Secretary, Delhi further suggested that availability of power in these priority towns should be of the same order as in Delhi so that increased economic activities could gravitate there. He also wondered whether, having one transport authority for the entire National Capital Region would be a feasible proposition. He suggested that there could be a unified transport authority first for Delhi and a coordinating body for the National Capital Region could come up later. The Member Secretary stated that what was necessary was to ensure linkages between the regional requirements and the needs of Delhi Urban Area and these could be planned together. Clarifying the matter further, the Secretary, U.D. stated that the proposed Authority was not intended to take up the total responsibility of administering and running the transport system in the entire Region. It could be a coordinating agency to take an integrated view of the needs of the Region and other responsibilities could be entrusted to this body later on, as and when considered necessary.

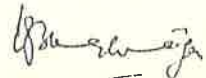
After the discussion as above, the Draft Regional Plan was approved for publication for inviting suggestions and objections as provided in the NCR Planning Board Act, 1985.

The meeting thereafter ended with a vote of thanks to the Chair.

No.K-14011/39/86-NCRPB
NATIONAL CAPITAL REGION PLANNING BOARD
7th Floor, 'B' Wing, IOC Bhawan,
Janpath, New Delhi - 110001.

Dated, the 10th August, 1987.

Copy forwarded for information and appropriate action to all the members of the Board.


(K.K. - Bhatnagar)
Member Secretary

Corrigendum of the Minutes of the Sixth Meeting
of the National Capital Region Planning Board
held on 21.7.87 in the parliament House Annexe.

* * * * *

Reference NCR Planning Board Communication No.
K-14011/39/86-NCRPB dated 10.8.87.

Agenda Item No.9 : Draft Regional Plan - Policies,
Proposals etc.

para 2 at page 6 of the minutes may be modified to read
as follows :-


"The Railway Minister drew the attention of the Board to the proposals contained in Chapter 5 of the plan relating to Transport. He explained that though it was the accepted policy of the Railways to increase the number of coaches on the long distance trains, they were facing several difficulties due to short length of platforms and non-availability of other infrastructure facilities. Provision of these facilities required large sums of money and hence the Railways may be able to achieve this objective only over a somewhat longer time than as a short term measure. He also suggested that the confusion regarding the utilisation of ring rail in Delhi should be completely cleared. In the scheme of things for the Railways, this was primarily a freight avoiding line for Delhi though it could be used as a passenger avoiding line also, but originally it was never meant to be a part of the urban transport system of Delhi. In this context, he welcomed the initiative taken by the Maharashtra Government for meeting part of the cost of providing the rail link between New Bombay and Bombay and stated that a similar initiative to meet the needs of Delhi was called for. He noted that the response of Delhi Administration in this connection was quite favourable and encouraging. He referred to the Task Force which was going into the question of a suitable mass transit system for Delhi and the initiative taken by the Ministry of Railways to propose a consortium approach to solving the Metropolitan transport problems. Regarding the proposed rationali-

sation of freight traffic movement to Punjab and Haryana, he stated that this was an on-going exercise and there were other possibilities also under consideration, with a similar objective. Regarding the other long-term measures suggested, he stated that the setting up of another passenger terminal was under consideration, but the details would have to be worked out and specific views could be formulated only after that. Regarding the proposals mentioned at 5.6(b), 1(iii), he stated that none of these works was in the plan prepared by the Railways except the 2 additional lines between Ghaziabad and Sahibabad and even though these are included in the Draft NCR Regional Plan, it should be construed that the Railways had agreed to them. The 2 additional lines between Ghaziabad and Sahibabad were expected to be commissioned by March, 1989, he added. He also made it clear that due to financial constraints, the Railways may not be able to provide additional resources for NCR Railway Schemes. On a suggestion from the Chair person that Railways should make some budget provision in the name of the NCR, he stated that funds for the NCR for the NCR proposals included in the Railways' own plan would be made available but for any other proposals, Railways could implement them only if extra funds specifically earmarked for such proposals are made available".

No. K-14011/39/87-NCRPB
NCR Planning Board,
TOC Building, Janpath,
NEW DELHI - 110 001.

Dated the Sept., 1987.

Copy forwarded for information and appropriate action to all the members of the Board.


(K.K. BHATTACHARYA)
Member Secretary.