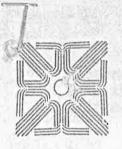
# National Capital Region Planning Board (Planning Committee)

11th Meeting 19 Nov. 1987

MC(11)°1987 1018

Agenda & Minutes





No. K-14011/2/87-NCRPB.

राष्ट्रीय राजधानी क्षेत्र योजना वोर्ड NATIONAL CAPITAL REGION PLANNING BOARD 7th Floor, 'B' Wing I.O.C. Building, Janpath, बाहरी विकास मंत्रालय Ministry of Urban Development नई दिल्ली, तारीख

Dated, New Delhi, the 19.10.87.

#### MEETING NOTICE

Subject: 11th meeting of the Planning Committee of the National Capital Region Planning Board.

The 11th meeting of the Planning Committee of the NCR Planning Board will be held at 11.00 A.M. on November 19, 1987, in the office of the NCR Planning Board.

- 2. It is proposed to discuss suggestions/objections received on the Draft Regional Plan 2001 in the meeting, besides many other important aspects of development to be incorporated in the final Regional Plan 2001 for the NCR. It is, therefore, requested that you may kindly make it convenient to attend the meeting.
- 3. The agenda for the meeting is being sent separately.

(B.N. 8ingh) Chief Regional Planner

#### LIST OF MEMBERS OF THE PLANNING COMMITTEE NATIONAL CAPITAL REGION PLANNING BOARD

- Shri K.K. Bhatnagar, Member-Segretary. NCR Planning Board, New Delhi.
- Shri R.L. Pardeep. 2. Jt. Secretary (UD), Min. of Urban Development, Nirman Bhawan. New Delhi.
- Shri R.S. Malik, 3. Secretary. Town & Country Planning Deptt., Govt. of Haryana, Chandigarh.
- Shri P.B. Mathur. 4. Secretary, Housing & Urban Development Department,

  Govt. of Rajasthan,

  Cations,

  4th Floor, Sanchar Bhawan,

  New Delhi. Jaipur.
- Jaipur.

  5. Shri S.D. Bagla
  Secretary, Housing and
  Urban Development Deptt.,
  Govt. of Uttar Pradesh,
  Vikas Bhavan, Janpath,
  Lucknow 260 002.

  14. Shri D.P. Gupta,
  Chief Engineer(Planning),
  Min. of Surface Transport,
  Transport Bhawan,
  New Delhi.

  Shri S.M. Mittal,
  Executive Director (MTP),
  Ministry of Bailways
- 6. Shri Ganga Das, Secretary (L&B), Delhi Administration, I.P. Estate, New Delhi - 110 002.
- Shri On Kumar, .7. Vice Chairman, Delhi Development Authority, Vikas Sadan, New Delhi - 110 002.
- Shri E.F.N. Ribeiro, 8. Chief Town Planner, Town & Country Planning Orgn. Vikas Bhawan, I.P. Estate, New Delhi - 110 002.
- Shri G. Prasanna Kumar, 9. Director Town & Country Planning Haryana, Chandigarh

- Shri C.S. Mehta, 10. Chief Town Planner, Govt. of Rajasthan, Jaipur.
- Shri J.P. Bhargava, 11. Chief Town Planner, Govt. of Uttar Pradesh, 7. Bandriya Bagh Lucknow .:
- 12. Shri Rakesh Mohan, Adviser (HUD), Planning Commission, New Delhi.
- 13. | Shri G.T. Narayan, Dy. Director General (TP), Ministry of Telecommunicat cations.

  - Ministry of Railways, 2nd Floor, Rail Bhavan, New Delhi.
  - Shri V.K. Sood, Director (Power), Deptt. of Power, M/o Energy 4th Floor, Shram Shakti 16. Bhawan, New Delhi.
  - Shri S.K. Sharma, 17. Chairman-cum-Managing Director, HUDCO, Lodhi Road New Delhi - 110 003.
  - Dr. S. Maudgal, 18. Director, Deptt. of Environment, Bikaner House, Shahjahano Road, <u>New Delhi</u>.
  - Shri B.N. Singh, Chief Regional Planner NCR Planning Board New Delhi. (Convenor)

Agenda itemsfor the 11th meeting of the Planning Committee to be held at 11 A.M. on 19th November, 1987, in the office of the National Capital Region Planning

Boatrd

Item No. 1	Confirmation of the minutes of the last meeting held on 7.7.1987.
Item No. 2	Review of the action taken on the Agenda items of the 10th meeting of the Planning Committee.
Item No. 3	Location of the Office of the NCR Planning Board outside Delhi.
Item No. 4	Preparation of SubRegional Plan by the participating States.
Item No. 5	Transport Sector Plan for NCR.
Item No. 6	Study on CounterMagnet areas.
Item No. 7	Location of the distributive trades in NCR.
Item No. 8	Resource Mobilisation for NCR Plan Implementation.
Item No. 9	Integrated plan for physical infrastructure for Delhi Metropolitan Area (DMA).
Item No. 10	Release of Financial Assistance during 1987-88 to the participating State's Governments/Implementing Agencies for execution of NCR Schemes.
Item No. 11	Consideration of Objections/Suggestions received on the Draft Regional Plan 2001-NCR.
Item No. 12	Any other item with the permission of the Chairman.

\* \* \* \*

A-T-P(J)

CONFIRMATION OF THE MINUTES OF THE LAST MEETING HELD ON 7.7.1987

The 10th meeting of the Planning Committee was held on 7.7.1987 and the minutes of the meeting were circulated on July 16,1987 (copy enclosed for ready reference).

Shri P.K. Sinha, Deputy Secretary, Ministry of Energy, who attended the 10th meeting has suggested amendment in the following paragraph of the minutes on item No. 2(V) - Review of the Action taken on the agenda item of the 9th Meeting of the Planning Committee which reads as follows:

"Referring to the proposals for power development, Shri P.K. Sinha, Deputy Secretary, Department of Power, Government of India, stated that the proposal for setting up a NCR Electricity Authority for NCR suggested by the NCR Planning Board is under examination by his Department.' However, he suggested that the Authority may not be named as NCR Electricity Authority but instead as NCR Electricity Agency".

The suggested amendment is as follows :

"It was observed on behalf of the Department of Power that while the need for a unified body/ agency to co-ordinate the power developmental activities in the region is recognised, it may not be appropriate to have a seperate NCR Electricity Authority, particularly when a Central Electricity Authority created under the Electricity (Supply) Act,1948 exists for the country as a whole. However, as indicated during the meeting, the matter is under examination in the Central Electricity Authority".

The Planning Committee may after consideration of above amendment confirm the minutes.

\* \* \* \* \* \*

MINUTES OF THE 10TH MEETING OF THE PLANNING COMMITTEE OF THE NCR PLANNING BOARD HELD AT 11 AM ON 7TH JULY, 1987 IN THE OFFICE OF THE NCR PLANNING BOARD, NEW DELIII.

The following members were present:

#### Members of the Planning Committee:

- 1. Shri K.K. Bhatnagar, Member-Secretary, NCR Planning Board Chairman.
- 2. Shri R.S. Malik, Special Secretary, Town & Country Planning, Government of Haryana.
- 3. Shri P.B. Mathur, Commissioner & Secretary (Urban Development), Government of Rajasthan.
- 4. Shri N.C. Vasishtha, Director, Town & Country Planning, Government of Haryana.
- 5. Shri H.S. Mathur, Chief Town Planner, Government of Rajasthan.
- 6. Shri N.S. Johri, Chief Town & Country Planner, Government of Uttar Pradesh.
- 7. Shri D.P. Gupta, Chief Engineer (Planning), Ministry of Surface Transport, New Delhi.
- 8. Shri Om Kumar, Vice Chairman, Delhi Development Authority.
- 9. Shri B.N. Singh, Chief Regional Planner, NCR Planning Board Member Convenor.

#### Other participants

- Shri P.K. Sinha, Deputy Secretary, Deptt. of Power, Government of India.
- 2. Dr. H.D. Goyal, Deputy Adviser (HUD), Planning Commission,
  - 3. Shri K.T. Gurumukhi, Town & Country Planner, Town and Country Planning Organisation, New Delhi.
  - 4. Shri J.C. Gambhir, Director (PPW), Delhi Development Authority.
  - 5. Shri Satya Swarup, Asstt. Director General(TP.V), Telecom Directorate, New Delhi.
  - 6. Shri V.P. Maheswari, Regional Chief, HUDCO, New Delhi.
  - 7. Shri Shankar Aggarwal, Jt. Secretary, Housing & Urban Development, Uttar Pradesh.
  - 8. Shri J.C. Chopra, Chief Town Planner, Haryana.
  - 9. Shri R.C. Aggarwal, District Town Planner, Karnal.
  - 10. Shri Prakash Narain, Deputy Director(PPW), D.D.A. Officers of the Board
    - 1. Shri S. Arunachalam, Sr. Planning Engineer.
    - 2. Shri R.P. Rastogi, Associate Planner.
    - 3. Shri V.K. Thakore, Sr. Research Officer.
    - 4. Shri Pran Nath, Deputy Director.
    - 5. Shri K.L. Sachar, Finance & Accounts Officer.
    - 6. Shri P. Jayapal, Asstt. Town & Country Planner.
    - 7. Shri J.N. Burman, Asstt. Town & Country Planner.
    - 8. Shri Madhu Babu, Asstt. Town & Country Planner.

The meeting was preceded by an Audio-Visual Presention of the Interim Development Plan of the NCR.

The Chairman welcomed the new members, namely, Special Secretary, Housing & Urban Development and Director, Town & Country Planning, Haryana to the Meeting.

#### AGENDA ITEM NO.1

## CONFIRMATION OF THE MINUTES OF THE LAST MEETING OF THE PLANNING COMMITTEE HELD ON 8.6.1987

The minutes of the meeting held on 8.6.1987 were confirmed.

#### AGENDA ITEM NO.2

## REVIEW OF THE ACTION TAKEN ON THE AGENDA ITEMS OF THE 9TH MEETING OF THE PLANNING COMMITTEE

- (v) Referring to the proposals for power development, Shri P.K. Sinha, Deputy Secretary, Department of Power, Government of India, stated that the proposal for setting up a NCR Electricity Authority for NCR suggested by the NCR Planning Board is under examination by his Department. However, he suggested that the Authority may not be named as NCR Electricity Authority but instead as NCR Electricity Agency.
  - (vi) The Chairman drew the attention of the members that in view of no definite consensus having been arrived at the proposed management structure for the NCR in the last meeting, the views of the State Governments, if now available, could be reported in the meeting by the representatives of the State Governments. Shri R.S. Malik, Special Secretary, Haryana said that the views of the Haryana Government would be sent later. However, he felt that in view of the existence of Haryana Urban Development Authority, Town & Country Planning Department and Panchayats, there may be a problem for creation of a separate Sub-region Area Development Authority. The representative of the Uttar Pradesh Government said that creation of a Planning Cell at the State Government level is being vigorously pursued. He further stated that another authority for the entire Sub-region may not be created

in Uttar Pradesh in view of development authorities existing in Meerut, Ghaziabad and NOIDA and also in view of the proposal to create development authorities for Bulandshahr-Khurja Complex. On a query from Member-Secretary as to how development of the rural areas will be ensured in the absence of an unified agency at the sub-regional level, Shri Shankar Aggarwal, Joint Secretary stated that comments on this would be made available to the Planning Committee by the State Government as soon as possible. Shri P.B. Secretary, Housing & Urban Development, Rajasthan agreed with the proposal of the creation of a Sub-regional Area Development Authority for the Rajasthan Sub-region. up the discussion, the Chairman stated that the Draft Regional Plan would contain the proposals as approved by the Board in its meeting held on 17th February, 1987 and Governments can give their suggestions when the Draft Regional Plan would be published for inviting objections/suggestions.

#### AGENDA ITEM NO.3

### POLICIES FOR DEVELOPMENT OF ECONOMIC ACTIVITIES THE ROLE OF INFORMAL SECTOR

Reacting on the findings of the Study, Shri P.B.Mathur Secretary, Housing and Urban Development said that the recommendations made in the Study did not contain the definition of the informal sector and also the study does establish the growth of informal sector as ·linked with formal sector activities. Shri Om Kumar, Vice Chairman, Delhi Development Authority felt that the major the Study should concern itself in identifying the percentage of migrants who are involved in various informal sector economic activities. There was, a need for quantification of the migrants who get absorbed in various economic activities both formal and informal and the extent which remain without job. Such a quantification will lead options for absorption of migrants in various economic activities. The Chairman said that efforts would be made to finalise this report in the light of the observations made by the members.

## POLICIES FOR DEVELOPMENT OF ECONOMIC ACTIVITIES IN THE NATIONAL CAPITAL REGION

Shri N.C. Vasishtha, Director, Town & Country Planning, Haryana referred to the policies approved in the Interim Development Plan and that proposed to be incorporated the Draft Regional Plan specifically to industries. He said that in the DMA towns, large and medium scale industries be allowed since DMA towns in Haryana should also have still not been saturated. He suggested that the embargo on medium and large scale industries should be deferred for a period of 10 years in DMA towns. He also stated similar policies relating to Government Offices be applied Shri R.S. Malik, Special Secretary, Urban towns. Development, Haryana stated that the DMA towns deserved location of large and medium scale industries and the embargo proposed for location of such industries in DMA towns not justified. He also referred to the problems of availability of power in Haryana. He said that power was available only for 6 hours in Haryana while Delhi enjoyed uninterrupted supply and therefore, the dispersal of economic activities from Delhi, particularly industries would not be possible unless availability of uninterrupted power supply is ensured in the constituent areas of the NCR. Shri Om Kumar, Vice Chairman, DDA said that with a view to curbing the of Delhi, the policy of strict control regarding of industries need to be adopted not only within the Delhi UT, where only small scale industries employing persons are being permitted but also in DMA towns Member-Secretary referred to the policies relating to economic activities in the Interim Development Plan for NCR as approved, by the Board. He stated that the policies of economic activities as approved by the Board are being incorporated the Draft Regional Plan. In case Haryana wishes this issue, that could certainly be done at the meeting of the NCR Planning Board.

With regard to trade and commerce, it was decided to remove the words "and develop" in the last line of the recommendations under disincentives within Delhi'.

#### AGENDA ITEM NO.5

### FISCAL MEASURES TO BE INCORPORATED IN THE DRAFT NATIONAL CAPITAL REGION PLAN

Member-Secretary informed the members that an expert study was commissioned by the Board through the auspices of the National Institute of Public Finance Policy (NIPFP) whose enclosed with been received. The annexure report has now the Agenda item gives comparative statement of the policies approved in the IDP and the policies as proposed in the study by the Institute. The Planning Committee in their meeting held on 7th July, 1987 had reiterated the broad policies as indicated in the IDP that uniformity of tax structure absolutely necessary to remove certain anomalies structure of trade and industry in the the tax

Shri Malik of Haryana stated that as already mentioned by him, it would be difficult to curb the growth of Delhi in view of better power supply situation in Delhi and also concessional taxation structure as compared to other constituent areas of the NCR. It was generally felt that the tax structure for the entire region need to be rationalised.

After discussions on the policies suggested by NIPFP, the Committee felt that to work out the exact mechanism for rationalisation of tax structure and existing anomalies in trade and commerce, a Committee of the Finance Secretaries of the three participating States and Delhi UT and the representatives from the Ministry of Finance, Home Affairs and Planning Commission under the Chairmanship of Union Secretary for Urban Development may be constituted. This committee would take into consideration all the relevant factors and make suitable recommendations for the approval of the Board.

#### SETTLEMENT SYSTEM 2001

The Member-Secretary stated that a study was entrusted Physical Research Laboratory, Ahmedabad to suggest suitable settlement system for NCR based on computer aided model. He also referred to the CBRI, Roorkee's studies commissioned to evolve a suitable urban development model the region. Shri B.N. Singh explained the findings study and stated that the proposals contained in the more or less conforms to the findings of the Physical Research Laboratory. Shri Singh also explained the various alternative models developed by CBRI to suggest a suitable pattern of settlement system which would be efficient, objective and effective. He explained that the 8 towns/complexes identified as regional centres in the IDP conform to the findings of both the studies and are accordingly proposed to be incorporated in the Draft Regional Plan. Special Secrestudy, Sonepat tary, Haryana stated that according to the falls within the first higher order of settlement and as such this should be included in the list of priority. Shri Singh/explaining the rationale for notincluding Sonepat, Modinagar, Shikarpur and Mawana which fall in the first order of settlement the Study said that in each of the transport corridors, only one town has been identified for inclusion in the first order settlements on consideration of selectivity, whereas the other towns in view of their close proximity to Delhi have been deliberately omitted. However, Shri Singh explained that these towns would be developed as second order Sub-regional centres. Special Secretary, Haryana agreed with the findings of the report.

#### AGENDA ITEM NO.7

## POLICIES AND PROPOSALS FOR PROVISION OF WATER SUPPLY AND SANITATION FACILITIES

The Chairman explained the recommendations, policies and proposals for provision of water supply and sanitation both for urban and rural areas in the NCR. The recommendations were approved by the Committee to be incorporated in the Draft Regional Plan.

## STRATEGY FOR DEVELOPMENT OF EDUCATION AND HEALTH FACILITIES IN THE NATIONAL CAPITAL REGION

The norms and standards for education and health facilities included with the Agenda item were considered and approved by the Committee. The Member-Secretary, however, informed the members that the State Governments who normally give concessions in the shape of developed land at nominal prices to educational institutions could extend such concessions to a large number of institutions who have applied for such facility in Delhi. If details on concessions as approved by the State Governments are made available to the Board, the matter could be taken up with the Delhi Administration for locating such institutions in various Subregions.

The members also suggested that effort could be made for setting up Navoday-vidyalayas in the various towns by the NCR.

#### AGENDA ITEM NO.9

#### TRAFFIC AND TRANSPORT PLAN FOR NCR

The Chairman stated that M/s. Operations Research Group had been entrusted with the study who have conducted the various types of surveys in the NCR. On the basis of surveys and data, an analysis has been done regarding traffic generation and attraction characteristics of the area. Based on the data, future passenger and goods flow have been projected and caliberations made using suitable models in the development of alternative network under 2 scenarios. The Consultants have made available an interim report. He further stated that their final recommendations may not be much different than what has been circulated in the meeting today. The Chairman requested the representative of the ORG to explain the salient features of the transport proposals. Shri Ramchand of ORG presented the main findings of the study. Shri J.C. Chopra, Chief Town Planner, Haryana, reacting on the proposals of the Consultants stated that the proposal of an outer goods avoiding rail line had been there

1973 Plan and should not be dispensed with. He further that this line was conceived on the hope that it will lead and open up vast areas for development and as such it should not be evaluated in terms of economic viability. Shri Prakash Narain, DDA also stated that the present Delhi avoiding line runs right through the city and it should be exclusively reserved for intra-urban passenger movement and the outer rail grid should be developed by 2001. Secretary reacting to the suggestions made clarified the projections made by the Consultants indicate that with improvement of the terminals and augmentation of capacity of the existing rail network and increasing the number of coaches of passenger trains, the increased goods and passenger traffic could be easily handled without such a lengthy new line. Shri Shankar Aggarwal, Joint Secretary, U.P. Ghaziabad could that in addition to the four terminals. also be made another terminal. Shri P.B. Mathur, Secretary, Rajasthan stated that Rewari - Dharuhera need to be connected by rail. After discussions at length, it was felt that interim findings of the report may be incorporated in the Regional Plan and the Committee felt that the reports all the studies and surveys be circulated to the State Governments, who would consider the findings of the Consultants and make their comments available to the NCR Planning Board These could then be considered along with the final report of the ORG for the final net-work.

#### AGENDA ITEM NO.10

#### STRATEGIES AND PRIORITY AREAS FOR DEVELOPMENT

The proposals contained in the Agenda item were considered and approved.

#### AGENDA ITEM NO.11

#### COUNTER MAGNET AREAS

The paper suggesting the concept and approach to counter magnet areas were considered and approved.

### POLICIES AND PROPOSALS ON ENVIORNMENT AND ECOLOGY

The paper circulated on the above aspect was considered and approved.

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

\*\*\*\*\*\*\*\*\*\*

NO. K-14011/2/87-NCRPB
NATIONAL CAPITAL REGION PLANNING BOARD
7th Floor, B -Wing, IOC Bhawan,
Janpath, New Delhi -110001

Dated, the 16th July, 1987.

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

( B.N. Singh ) Chief Regional Planner

Member - Convenor

REVIEW OF THE ACTION TAKEN
ON THE AGENDA ITEMS OF THE
10th MEETING OF THE PLANNING
COMMITTEE

#### 1. Agenda Item No. 2(V)

The comments of the Department of Power, Ministry of Energy on the proposal regarding creation of NCR Electricity Authority and allocation of additional power to the NCR has since been received vide letter No. 21/6/85-DA(P) dated 1.9.1987 and is reproduced below for consideration.

- i ) The areas coming under the purview of the National Capital Region are at present served by the State Electricity Boards of Uttar Pradesh, Haryana and Rajasthan and the Delhi Electric Supply Undertaking in their respective territories. Thus, it appears that the creation of NCR Electricity Authority is being sought for the areas which are administratively under the control of different Governments or the Union Territory. So far, the State Electricity Boards or Electricity Supply Undertaking deals with the various aspects of power supply, viz., generation, transmission and distribution cover the areas which belong to a single administration.
- The carving of the National Capital Region Electricity Authority from the different Electricity Boards and Electricity Supply Undertaking will require the concurrence of all these organisations and respective administrations. The proposal would also callfor far-reaching organisational restructuring by way of bringing together the personnel working in different organisations in the new set up.
- iii) It is felt that, taking into account the above mentioned points, it would not be possible to create a separate Electricity Authority for the NCR as per the existing provisions of the Electricity (Supply) Act, 1948, and hence amendment of the same would be required.
  - iv) The power planning in the country is being carried on Regional basis. The regional grids have been developed from the erstwhile State grids and evolution of National Grid is also being contemplated. Adequate physical transmission

facilities are being ensured to meet the power requirements of NCR. It will be technically quite difficult to provide for NCR in isolation.

v) As regards the allocation of additional power, particularly from the Central Power Stations, is concerned, it is mentioned that there are competing claims from different sectors which include Central core industries and services. Therefore, it would be quite difficult at this stage to accept the case for additional allocation of power for the National Capital Region. This can be taken on case-to-case basis as the situation develops.

Th his comments on the DRP, the Director, Town & Country Planning, Govt. of Haryana (letter No. PA/1354/Special dt. 11.9.87) has stated that the proposal of setting up of a separate Agency/Authority was not acceptable to them.

#### 2. Agenda Item No. 2(6):

The proposed management structure as contained in the Draft Regional Plan in the light of objections/suggestions received on the Draft Plan will be suitably modified after the decision of Planning Committee. It may, however, be stated that no definite comments have been received from the State Governments as promised in the last meeting.

3. Agenda Item No. 3: Policies for development of economic activities - the role of informal sector:

The Society for Development Studies have been requested to incorporate the views of the members, in the final report, on the study. The concept of providing separate facilities for informal sector in Urban Development Plans of priority towns shall be kept in mind while preparing their plans.

4. Agenda Item No. 4: Policies for development of economic activities in the National Capital Region:

Comments have been prepared on the suggestions/objections received on the Draft Regional Plan at Agenda Item No.11of this meeting.

5. Agenda Item No. 5: Fiscal measures to be incorporated in the Draft Nationalli Capital Region Plan.

A committee to suggest measures to rationalise the tax structure in NCR has been constituted under the Chairmanship of Sec-retary, Ministry of Urban Development, Government of India. A copy of the order is annexed.

6. Agenda Item No. 6 : Settlement System - 2001 :

No action is called for.

7. Agenda Item No. 7: Policies and proposals for provision of water supply and sanitation facilities:

No action is called for.

8. Agenda Item No. 8: Strategy for development of education and health facilities in the NCR:

The details of concessions being offered for establishment of educational and health facilities by State Governments is awaited. After the details are made available to the Board, the Delhi Administration would be requested to send a list of institutions who would like to locate in various sub-regions of NCR.

9. Agenda Item No. 9 : Traffic and Transport Plan for NCR :

The Draft Final Report of M/s Operations Research Group is being discussed as a separate agenda item no. 5 of this meeting.

- 10. Agenda Item No.10 : Strategies and Priority areas for development :

  No ac-tion is called for.
- 11. Agenda Item No.11 : Counter-magnet areas :

  This item is detailed as a separate agenda item no. 6 of this meeting.

\* \* \* \* \* \*

No.K-14011/32/87-UD.II Government of India Ministry of Urban Development (Shahari Vikas Mantralaya)

New Dolhi, dated the 11th Sept. 87.

#### OFFICE MEMORAMDUM

Subject:- Constitution of a Committee to examine the recommendations made for the Interim Development Plan and NIFFF and to suggest measures for the rationalisation of Tax structure in the N.C.R.

In persuance of the recommendations of the Mational Capital Region Planning Board in its sixth meeting held on 21.7.87, it has been decided to constitute a committee under the chairmanship of the Secretary, Ministry of Urban Development to examine the Interim Development Plan and the recommendations made by National Institute of Public Finance and Polloy ations made by National Institute of Public Finance and analyse its (NIPPP) regarding a suitable new tax structure and analyse its implications and suggest measures for the rationalisation of tax structure in the National Capital Region. Government is pleased to direct that the Committee composed of the following should be constituted with the terms of reference as indicated below.

#### Compositioni

	Secretary, Ministry of Urban Development - Urb	Mondor
3.	Secretary (Finance), down	Member
4.	Secretary (Finance), Govt. of Haryana	Member
5.	Secretary (Finance), Delhi Administration	Mombor
6,	A representative of the Ministry of Finance	Member
7.	A representative of the M/o Home Affairs	Member
8.	the statistic of the statistic	Member
9.	Member-Secretary, N.C.R. Planning Board	

#### Terms of Reference:

- Examine the Interim Development Plan and report of the NIFFP. The Committee will:
- Suggest appropriate changes in the tax structure of the participating States and the Union Territory of Delhi in the light of the above two reports and other relevant factors which the Committee may like to consider, particularly in respect of the following Oligas !

- i) Sales Tax Structure as per the State/Union Territory
- ii) Taxes on raw materials used by manufactures;
- iii) Rationalisation of Central Sales Tax rates prevalent in the constituent Sub-Region;
  - iv) Structure of Motor Vehicle Tax and tax on passengers and goods:
  - v) Structure of Octroi rates; and
- vi) Levy of consignment tax.
- 3. Make any other recommendations relating to fiscal measures. as would, in their view, promote a balanced and integrated development of the Mational Capital Region.

The Committee should submit its first interim report before the next meeting of the Mational Capital Region Planning Board which may be held after about 3 months. The Secretarial support for the Committee shall be provided by the office of the

The Committee will be empowered to constitute such sub-groups/sub-committees as it may deem necessary, consisting of officials and non-officials and/or non-officials to examine one or more on the issues germane to its aforesaid terms of reference. The Committee may also co-opt one or more persons as its member(s), should it find the same necessary for the satisfactory completion of the tasks entrusted to it.

R.L. Fardeep )

Joint Scoretary to the Covernment of India.

#### Copy to:-

Secretary, Ministry of Urban Dovelopment, Low Dollar Member Secretary, N.C.R. Elanning Board. New Dollar Secretary (Finance), Govt. of Rajasthan, Jaipur. Secretary (Finance), Govt. of Uttar Fradesh, Lucknew. Secretary (Finance), Govt. of Haryana, Chandigarh. Secretary (Finance), Dollar Administration, Dollar Secretary, Ministry of Finance They are required. 10 3 ... 1556

Secretary, Ministry of Home Affairs,

New Delhi. Secretary, Planning Commission, New Delhi.

They are requested to nominate representatives of their Ministries/Commission in the Committee who will be function -ing as Members of the Committee.

The office of the National Capital Region Planning Board came into existence after the enactment of the National Capital Region Planning Board Act, 1985 and constitution of the NCR Planning Board in March, 1985. The office was initially established in Nirman Bhawan where adequate accommodation could not be provided for the staff sanctioned to carry out various functions provided in the Act. The Ministry of Urban Development was moved to allot 5,000 sq.ft. of office accommodation either in Nirman Bhawan or in any other building. The Cabinet Committee on Accommodation (CCA) in its meeting held on February 4, 1986, approved the proposal for locating the office at pelhi and directed that after three years, the Board should move to NOIDA or any other suitable location. The office was shifted to the IOC Building during September, 1986. of the decision of the CCA to move the office to NOIDA or any other suitable location, . visits were undertaken in the Delhi Metropolitan towns namely Faridabad and Gurgaon in Haryana and NOIDA and Ghaziabad in Uttar Pradesh. In consultation with the concerned authorities of the State Governments, several sites in these towns were visited. The enclosed annexure gives the details of sites offered for the office and residential accommodation required for office of the National Capital' Region Planning Board. The Planning Committee may like to consider the following for appropriate location of office of National Capital Region Planning Board:

- (a) In the context of co-ordination needed between Ministry of Urban Development, various Central Ministries, Delhi Administration/DDA and also the participating State Governments and the frequent meetings held requiring participation of officials from them, which should be the best location for the office of the National Capital Region Planning Board?
- (b) Whether the State Governments/Local Authorities could offer daysloped site free of costs

DETAILS OF ALTERNATURE SITES OFFERED FOR THE CFFICE OF 1002 PLANNING BCARD IN DIA TOWNS

			HARVANA		20	UTTAR PRADESH	
 particulars .	Teridabed pedabita			Gurgaon	Ghaziabad		HOIDA *
Location	Sector 15A	Sector 165	City Centre Sector 12	Sector 18	Kaushambi	Chandra Nager Scheme	1 2 2 2 2 2 2
Approx. Distance from Mirman Bhawan, New Delhi	30 Jans	28 kms	31 Jems	23 kms	12 km	15 km	50 char 1 36
Area of plot being offered	0) 11 11 12 13 14 15 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	2 ACTES	On Floor area basis for cffice, seperate site for housing	About 2 Acres	20 % S & S & S & S & S & S & S & S & S & S &	On Floor area basis for office and seperate area for housing	Ea Park
Whether Resident- isl complex allo- wed with office	\$1 (0) (3)	\$1 \$1	NO	\$ \$ \$	;> t M M	NO	0,0
Whether land acq- uired is in poss- ession of Authori- ty	∪1 () *•1	8	ν Θ Θ	(7) (1) (2)	ua d) > I	Yes	3
Whether the site is fully developed	\$3 \$3 \$4	93 93 54	V®S.	() () ()	to:	žes.	5
Whether the site is ready for construction	0 0 0	ω 9) 51	Mey take more than a year	0 0 51	May take more than a year	Office buil- ding only, ready for occupation	Za Z

\* For NOIDA information would be provided at the time of the Meeting.

The Draft Regional Plan for NCR was approved by the Board in its meeting held on 21st July,1987 for inviting objections/suggestions from the public. The Draft Regional Plan prepared by the NCR Planning Board will be modified in the light of objections/suggestions received from the public and a final regional plan will be prepared which will be placed before the NCR Planning Board for approval thereafter.

Each participating State is required to prepare a Sub-regional Plan within that State and the Union Territory as required under Section 17 of the NCR Plnning Board Act, 1985. Each Sub-regional Plan shall be a written statement and will contain the following elements to elaborate the 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 area, 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 for drainage; and
- (g) any other matter which is necessary for the proper development of the Sub-region.

While the Draft Regional Plan is in the process of finalisation, action needs to be initiated for the preparation of such Sub-regional Plans by the participating State Governments. With this in view, a meeting of the Chief Town & Country Planners of Haryana, Rajasthan and Uttar Pradesh was convened in the office of the NCR Planning Board on August 13, 1987 to evolve a programme for future work. The Chief Town & Country Planners had agreed that the Sub-regional Plans in respect of each Sub-region would be prepared by end of August, 1988. The principal tasks involved in the preparation of the Sub-regional Plans are:

- 1. Preparation of base maps for the Sub-region.
- Settlement pattern.
- Landuse plan.
- 4. Traffic & Transportation network plan including terminal facilities.
- 5. Plan for infrastructural facilities.
- 6. Plan for priority areas.

Of the above, progress on the task relating to the preparation of base maps for which action has already been initiated in the office of the Board as decided in the meeting held on 13.8.87 is as under:

The Board has acquired Landsat Imageries (scale 1:2,50,000) and Aerial Photographs (scale 1:50,000). With a view to utilising these as inputs in the preparation of base maps for the Subregions, an orientation training for the officers of the State Town & Country Planning Departments was held during 25-27 August, 1987in collaboration with Defence Terrian Research Laboratory (DIRL), Ministry of Defence in the office of National Capital Region Planning Board. Preparation of base maps have been undertaken utilising these Landsat Imageries and Aerial Photographs by the State Town & Country Planning Departments. It has been agreed that this work would be completed by December, 1987.

Regarding the remaining tasks, a time frame need to be agreed to. A tentative schedule indicating the dates by which each task may be completed is given below:

1.	Base Maps prepration for each Subregion	December,	1987
2.	Settlement Pattern.	January,	1987
3.	Traffic & Transportation network plan including terminal facilities.	March,	1988
4.	Subregional landuse plan.	June,	1988
5.	Plan for Infrastructural facilities and priority Areas.	July,	1988
6.	SubRegional Plan.	August,	1988

The Planning Committee may kindly consider the above programme for adoption by the participating States.

\* \* \* \* \* \*

where the property of the state of the state of

M/s Operations Research Group had been entrusted a study on Transport Sector Plan for National Capital Region. They submitted an Interim Report in July, 1987. Based on the Interim Report, with certain modifications, the proposals on Transport Plan were included in the Draft Regional Plan. The proposals were discussed in the last meetings of the Planning Committee held on 7th July, 1987 and the National Capital Region Planning Board on 21st July, 1987. In the light of the observations/suggestions made in the meeting of the NCR Planning Board, the proposals on Transport sector were suitably modified and incorporated in the Draft Regional Plan Report published for inviting public objections.

The Consultants thereafter submitted a Draft Final Report in August, 1987 which was circulated to Town and Country Planning and Public Works Departments of the participating State Governments and also Central Ministries of Surface Transport and Railways. A meeting of the Study Group on Regional Transport which consists of the representatives of participating State Governments and Central Ministries was held on 19th October, 1987 and 3rd November 1987 to discuss the salient features of the Report. Based on the observations of the Study Group, a Summary of Recommendations as revised by the Consultants is being sent separately, for favour of consideration by the Planning Committee.

X X X X X X

The Draft Regional Plan -2001 for NCR included a chapter on Counter-magnet areas which outlined the approach for identification of counter-magnet areas based on a study entrusted to the School of Planning & Architecture, New Delhi. The study was entrusted to the School in May'87. The School had initially submitted a technical note on the concept, approach and methodology followed and short listed possible 36 towns which are as in the enclosed table. This selection which was considered and approved by the Planning Committee in its last meeting held on July 7, 1987, has been incorporated in the Draft Regional Plan. During discussions with the Consultants the choice has been reduced to 12 towns and detailed town profiles for these 12 towns are now being prepared.

It is expected that the School will be in a position to submit quantitative and qualitative evaluation in respect of all the 12 towns which would lead to identification of a few urban centres finally. It is proposed to hold discussions with State Governments before finalising the selection of Counter-magnet Areas. The 12 towns now short-listed are as follows:

The 12 towns now short-fisced are as for

- 1) Uttar Pradesh
  - 1. Bareilly
  - 2. Moradabad
  - 3. Saharanpur
  - 4. Allahabad
- ii) Haryana
  - 1. Ambala
  - 2. Hissar
  - 3. Karnal
- iii) Rajasthan
  - 1. Kota
  - 2. Sikar
- iv) Punjab
  - 1. Patiala
  - 2. Bhatinda
- v) Madhya Pradesh
  - 1. Gwalior

The Planning Committee may kindly consider the above short listed 12 towns for further indepth study for final selection of countermagnet Areas.

\* \* \* \* \* \*

#### 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 laklis	2 to below 3 lakhs	1 to below 2 lakhs		
Uttar Pradesh	t. Kaupur 2. Agra 3. Allahabad	4. Bareilly 5. Moradabad 6. Aligarh	7. Saharanpur 8. Dehradun 9. Jhansl 10. ShahJahanpur 11. Rampur 12. Ferozabad	14. Mathura 15. Farukhabad 16. Harldwar 17. Amroha 18. Etawah 19. Sambhal		
Haryana			20. Ambala	21. Yamunanagar 22. Hissar 23. Karnal 24. Bhiwani		
Rajasthan	25. Jaipur	26. Ajmer 27. Kota	28. Dikaner	<ul><li>29. Ganganagar</li><li>30. Bharatpur</li><li>31. Sikar</li></ul>		
Punjab	32. Ludhlana 33. Jalandhar		34. Patiala	35. Bhatinda		
Madhya Pradesh	36. Gwallor		7 7 7	w		

In the larger interest of the regional development and the necessity of limiting population of Delhi within manageable limits, the draft Regional Plan - NCR has given broad policy guidelines with regard to locational aspects of wholesale trades in the Region. For suggesting the location of the distributive wholesale trades in the Region, it has been emphasised in the Draft Plan that potentials of the towns, their economic linkages with Delhi, re-routing of the commodites in the new wholesale markets and the pattern of their distribution would be some of the guiding factors which would require consideration. It has been proposed in the Plan that appropriate studies should, therefore, be carried out on priority basis in order to finalise these locations.

Among the various commodities for which trades in Delhi perform distributive function, the trades in the commodities which are hazardous in nature and require extensive space and are mainly located in the congested parts of the old city require immediate attention. Therefore, while making a choice for the commodities for which such locations are to be suggested on priority basis, the trades, in these commodities would form the first preference.

The Perspepctive Plannintg Wing of DDA while carrying out various surveys has identified the following major regional distributive and land extensive commodities:

- (i) Textile
- (ii) Auto parts and machinery
- (iii) Fruits and vegetables
- (iv) Hardware and building materials
- (v) Food grains
- (vi) Iron and Steel and
- (vii) Timber

It is proposed that extensive surveys commoditywise for these trades with regard to their trade characteristic in Delhi and their appropriate locations in the Region
be got conducted through professional consultancy. It
would not be out of place to mention here that in such an
exercise, the participation and co-operation of the various
agencies of the State governments, Delhi Administration, DDA
and other trade agencies would be actively required.
The Planning Committee may kindly consider the above proposal.

\* \* \* \* \* \*

- 1. The Draft Regional Plan-2001 for NCR prepared by the National Capital Region Planning Board is to be given a shape of final plan shortly. The principal objective of the Plan is to reduce the rapid growth of economic activities and population of Delhi UT by creating employment opportunities through dispersal of economic activities - industry, distributive trade and public sector offices, and developing such activities outside Delhi UT particularly in the priority towns for their induced growth and to six DMA towns to achieve controlled growth in them. The Draft Regional Plan has outlined policy measures and programmes to achieve these objectives. The programmes would include land acquisition and development, development of economic activities, upgradation/provision of physical and social infrastructure, improvem-ent of transportation links between the priority towns and also with UT, besides provision of adequate telecom facilities. The programmes also include provision of essential services, at standards comparable to that of Delhi for the projected population for 2001.
- Specific projects would have to be prepared for both regional and local level requirements. The regional level projects would be for sectors notably road and rail transport, telecom facilities and power generation and supply. The local level investments would be in the development of economic activities, infrastructural facilities both physical and social and provision of housing including land acquisition and development for the above.
- The NCR Planning Board came into being in March, 1985 to plan and co-ordinate the enforcement and implementation of the Plan through the participa ting States and Union Territory in the NCR. For achieving these objectives, the Board is required to ensure proper and systematic programming by the participating States in the Region through sectoral development programmes, and investments within the frame-work of the Regional Plan. The Seventh Five Year Plan allocations are of the order of \*Rs. 65 crores (Rs. 35 crores - Central share and Rs. 30 crores - State share) so far. The Interim Development Plan - NCR prepared by the National Capital Region Planning Board earlier had indicated a tentative investment of Rs. 3040 crores excluding on Power Sector Schemes during 1985-2001. While persistent efforts have been made for obtaining increased allocations over and above the existing allocations for implementation of NCR schemes, a stage has come that Board should prepare an Investment Plan based on Regional Plan for 2001 perspective and more specifically for Eighth Five Year Plan identifying the possible sources of its fin-ancing on priority basis. The Draft Regional Plan has, however, as tentatively indicated the possible sources of financing from Central and State Governments, LIC, Nationalised banks, public sector financial institutions and market borrowings through debentures and bonds etc.

- 4. The perspective for the Regional Plan 2001 for the NCR is only 13 years away from now. During this short period, substantial investments need to be made in the NCR to effectuate programmes to make impact the policies of the NCR Plan. The investments required for the implementation of NCR schemes would be both in the Centra-1 and State sectors. The Central sector investments would be mainly in Roads (NH), Rail and Telecom, while major investments would also have to be made at local level and on regional roads. In the context of the meagre investments in the Seventh Five Year, the investments, during the remaining period of the Regional Plan, having 2001 as perspective would have to be made at an accelerated pace. Thus, the Central and State Governments would also be required to make a commitment for higher allocations beginning from the Eighth Five Year Plan.
- The total need for the public investments in NCR for achievement of its objectives will indeed be very large - much larger per capita investment as compared to the remaining parts of the constituent States. Sub-regions form a relatively better developed parts of the constituent States and, therefore, the much needed financing of the investments may not be forthcoming even in the Eighth Plan. In the context of the above background, there is a need to identify possible additional sources of financing such as private sector, institutional sources, international sources in addition to resource mobilisation at the community and the local authority levels. should also seek innovative approaches in raising resources through investments in remunerative projects, land development etc., so as to develop a Financial Plan for implementation of the Final Regional Plan. The Financial Plan should as far as possible quantify the resources expected from various sources.
- 6. In order to look into the various aspects of resource mobilisation for implementation of the NCR Plan, there is a need for an indepth study on the following aspects:
  - i) Identification of possible sources for additional resources for Plan implementation.
  - ii) An Investment and Financial Plan which would indicate by 5 year period the possible resources availability from various sources. The Investment Plan would attempt to translate the Physical Development Plan in financial terms.
  - iii) Resource Mobilisation of local bodies to focus upon their financial needs and potential resources to enable them to continue funding/improving/expanding/maintenance activities after completion of projects.
    - iv) Resource Mobilisation from financial institutions such as the proposed National Housing Bank.
      - v) Resource Mobilisation: from private sector.

The Planning Committee may kindly consider the need for taking up studies on the above aspects.

\* \* \* \* \* \* \* \* \*

INTEGRATED PLAN FOR PHYSICAL INFRASTRUCTURE FOR DELHI METROPOLITAN AREA

AGENDA ITEM NO. 9

The National Capital Region Plan is aimed at achieving balanced regional development in the sorrounding areas of Delhi, limiting Delhi's extra-ordinary growth. The Draft Regional Plan has proposed provision/augmentation/upgradation of infra structural facilities in DMA and Priority Towns at standards comparable to that to Delhi. Since Delhi and DMA towns form part of same drainage basin, plans for drainage, sewerage and flood control cannot be worked out for Delhi and separately. Any pollution in Yamuna river affect the water supply system in the down stream towns of DMA. Major part of Delhi and parts of Haryana are being drained by the same Najafgarh drain. These aspects indicate possibility for evolution of an integrated inter-state plan for drainage, sewer-age and flood control for Delhi and DMA. It is, therefore, proposed to have an indepth study on these aspects through a professional consultancy.

The Planning Committee may kindly consider the above proposal for approval. Members are also requested to send to us studies, if any, conducted on this important issue.

\* \* \* \* \* \*

RELEASE OF FINANCIAL ASSISTANCE DURING 1987-88 TO THE PARTI-CIPATING STATE GOVERNMENTS/ IMPLEMENTING AGENCIES FOR EXE-CUTION OF NCR SCHEMES.

1. The project Sanctioning and Monitoring Group in its meetings held on 28th April,1987 and 7th July,1987 sanctioned the following financial assistance in the shape of loan to the participating states/implementing agencies for the year 1987-88:

¥	(Rs.in lakns)
<ul><li>i) Govt.of Uttar Pradesh</li><li>ii) HUDA (Haryana)</li><li>iii) UIT, Alwar(Rajasthan)</li></ul>	300.00 250.00 39.70
ű.	589.70

So far the following loan assistance have been drawn by the State Government/Implementing Agencies :

i) Govt.of Uttar Pradesh	175.00
ii) UIT, Alwar(Rajasthan)	14.70
	189.70

The Government of Uttar Pradesh have not drawn the remaining amount of Rs. 125.00 lakhs sanctioned for NCR schemes to be executed by the UP Housing Development Board due to non-submission of Utilisation Certificates in respect of funds released to them during 1985-86. Similarly HUDA has not drawn any amount out of the above. It has also not been possible to issue the sanction for construction of Transport Nagar at Panipat due to lack of detailed project estimates.

Out of the sanctioned loan assistance of Rs. 39.70 lakhs UIT, Alwar has drawn an amount of Rs. 14.70 lakhs after fulfilment of all the usual terms and conditions of loan i.e., execution of the loan agreement and furnishing the State Government guarantee. In regard to the remaining amount of Rs. 25.00 lakhs, UIT, Alwar has already executed the loan agreement and they have also approached the State Government for issue of necessary guarantee. The guarantee is still awaited from the State Government. As and when the State Government issues the guarantee, UIT, Alwar would be in a position to draw the loan assistance from the Board.

2. The project Sanctioning and Monitoring Group had sanctioned a loan assistance of Rs. 589.70 lakhs during 1987-88 to the three participating governments as indicated in the preceding para.

Group

The matter is brought to the notice of the Planning Committee. It is imperative that the State Governments/ Implementing Agencies take an early action for the completion of the formalities for the drawal of funds already sanctioned by the Project Sanctioning and Monitoring during the current financial year to ensure their timely utilisation.

\* \* \* \* \*

CONSIDERATION OF OBJECTIONS/ SUGGESTIONS RECEIVED ON THE DRAFT REGIONAL PLAN 2001 FOR NATIONAL CAPITAL REGION

The NCR Planning Board in its 6th meeting held on July 21, 1987 approved the Draft Regional Plan (DRP) for publication for inviting objections/suggestions as provided in the National Capital Region Planning Board Act, 1985. The Draft Regional Plan was published in leading daily news papers in all the four participating States of the National Capital Region on August 14, 1987. A copy of the DRP has also been sent to all local authorities within the NCR to make any representation with respect to the proposals of the DRP. The objections/suggestions were initially to be received for a period of 30 days. However, several requests were received for extending the date for submission of objections/suggestions. The last date for receipt was accordingly extended to October 31, 1987.

Till October 31, 1987, 33' objections/suggestions were received. Comments on the various objections/suggestions have been prepared after grouping the same under various subjects and is annexed.

The Planning Committee may kindly consider the comments for approval which will be placed before the National Capital Region Planning Board in its next meeting.

\* \* \* \* \*

#### SUPPLEMENTARY AGENDA ITEM NO. 1

- 1. A Task Force was set up in January,1987 by Ministry of Urban Development (Terms of reference at Annexure-I) to evaluate the different modes of the Mass Rapid Transit System for urban transport and recommend the one most suited for Delhi and also to recommend the manner of raising financial resources by the different functional agencies and details of the constitution of a Unified Transport Authority for Delhi. A copy of the Task Force report has been received for the comments of the Board. A summary of the recommendations of the Task Force report is at Annexure-II.
- 2. On examination of the Task Force Report in the context of the NCR, the following comments may be considered by the Planning Committee:
  - (i) The entire proposals for Mass Rapid Transit System is related to Delhi UT, whereas the DMA towns which are located at the immediate vicinity to Delhi and forms a contiguous urban expansion need also be taken into consideration for rapid transit system. As per study conducted by ORG for the NCR Planning Board, in 1987, 2.70 lakhs trips were performed between Delhi and DMA towns daily of which 80% trips were by commuters whose travel needs should also obe looked into while planning for the Mass Rapid Transit System.

#### DAILY PASSENGER TRIPS FROM DMA TOWNS TO DELIII UT

B'ETWEEN	No.of Trips in 1987
Delhi – Ghaziabad	78900
Delni - Noida	79400
pelhi - Faridabad	65461
Helhi - Gurgaon	46100
Total	269861

The proposed East-West corridor is to connect colonies in East Delhi with those of the West Delhi and the terminal points being Vivek Vihar in East and Vikas Puri in West. Vivek Vihar is situated at the Delhi - U.P. Border in Delhi UT contiguous to which a huge area has been urbanised in Uttar Pradesh. The Ghaziabad Master Plan envisages a population of 4.00 lakhs by 2001 in this trans-Hindon area of U.P. State. If the proposed corridor could be extended further east without regard to the territorial boundary by a couple of kms., the Mass Rapid Transit System could serve a large number of commuters need of the area falling in U.P.

The financial expenditure for the extended part of the East corridor would however, have tobe met on the basis of formula suggested by the Task Force.

The Task Force observes that the MRTS will not be able (ii) to achieve desired objectives of meeting the transport needs of the city unless it is backed by an Unified Metropolitan Transport Authority (UMTA). The need for such an Authority has been time and again emphasised in various forums for Metropolies like Delhi. On the same analogy, the NCR's Transport needs also must be considered over a long range planning for the region. Infact though Delhi U.T. is the most intensive traffic generating area thereby deserving higher degree of attention, in the course of time the magnitude of activities as above already springing up in the adjoining DMA towns and the identified Regional centres in the NCR, the transport network forming the nerve system needs utmost attention right now lest the traffic will be a chaos. Therefore, unavoidable need for setting up a Regional level body to look into the transport system for the Region as a whole must be considered along with UMTA proposal under consideration.

Any such body at the Region level could have sum or all of the following functions :-

- 1. Planning for transport needs of the region
  - 2. Laying down policies for meeting the above needs
  - 3. Preparing plans for transport services in the region including delineation of responsibilities amongst various modes of bransport.
  - 4. Funding arrangements for these plans
  - 5. Operation and management of these services.

The NCR Planning Board is already charged with the responsibility of discharging the functions as mentioned at items 1 and 2 above. However, it has no statutory backing for taking up the remaining functions.

No.K-14011/16/86-UD-11

Dated 2nd January, 1987

#### ORDER

A mass rapid transit system to meet the growing needs of public transport in Delhi is a pressing necessity. In this context, the choice, from amongst the different modes of mass rapid transit, of the appropriate mode which will be most suited to meet the needs of Delhi, is crucial. The manner in which the financial resources or funding the proposed mass rapid transit system for Delhi should be made available also needs careful consideration.

2. In the context of the foregoing, Government is pleased to direct that a Task Force composed of the following should be constituted with the terms of reference as indicated below.

#### Composition:

- 1. Secretary,
  Ministry of Urban Development. Chairman
- Adviser (Metropolitan Transport), Ministry of Railways.
- Adviser (Transport), Planning Commission.
- 4. Chief Secretary, Delhi Administration.
- 5. Shri B.R. Chavan,
  Joint Secretary,
  Ministry of Surface Transport.
- 6. Financial Adviser & Jt. Secy (Fin). Ministry of Urban Development, . (to represent the Ministry of Finance, Deptt. of Expenditure).
- 7. Shri S. Moudgal,
  Director (Impact Assessment),
  Ministry of Environment.

# Terms of Reference

- (i) To evaluate the different modes of Mass Rapid Transit System for urban transport and to recommend the one most suited to meet the growing needs of Delhi:
- to consider and recommend the method(s) of raising (11)financial resources by the different functional agencies and their respective shares in "Consortium funding" of the integrated metropolitan transport system for Delhi;
- (iii) to make recommendations regarding the constitution of a Unified Transport Authority to operate in an integrated manner all the modes of metropolitan transport in Delhi, and also to suggest the structure, staffing pattern, functional scope etc. of the proposed Unified Transport Authority, as also the agency under whose overall control and direction this Unified Transport Authority may function.
- The Task Force shall be empowered to constitute such sub-groups/sub-committees as it may deem necessary, consisting of officials and/or non-officials, to examine one or more of the issues germane to its aforesaid terms The Task Force may co-opt one or more of reference. experts (officials or non-officials) as its member(s), should it find the same necessary for the satisfactory completion of the tasks entrusted to it.
- The Task Force shall submit its report within six months from the date of its first meeting is held.

sd/-(R.L. Pardeep) Jt. Secretary to the Govt. of India

### Copy to:

- Shri D.M. Sukthankar, Secretary, Min.of Urban Dev. Adviser (Metropolitan Transport), Min.of Railways. Adviser (Transport), Planning Commission. 1.
- 2.
- 3.
- 4. Chief Secretary, Delhi Administration.
- 5. Shri B.R. Chavan, Jt. Secretary, Ministry of Surface Transport.
- 6. Financial Adviser & Jt. Secy. Min. of U.D.
- Shri S. Moudgal, Director (Impact Assessment), 7. Ministry of Environment.
- Sh.P.G. Valsangkar, Town & Country Planner, TCPO. 8:

# MASS RAPID TRANSIT SYSTEM FOR DELIII

Summary of Recommendations

Keeping in view the tremendous growth population of Delhi and particularly the phenomenal increase in the number of vehicles which are choking the roads and causing traffic chaos and air pollution, imperative that a suitable Mass Rapid Transit System (MRTS) is introduced in the capital urgently. grows further, the MRTS would be required on several corridors, a number of which have been identified in the Master Plan for Delhi - Perspective draft To start with, the MRTS may be introduced on the 36 long East-West Corridor, because the traffic density is highest on this corridor. The alignment of corridor has already been broadly surveyed by the Study Group which was appointed by the Department of Railways in 1986.

- After examining the various options for the MRTS, we are of the view that only two systems would meet the requirements of Delhi, namely,
  - (i) the conventional Rail-based Rapid Transit System (LRT) and
  - (ii) the Magnetic Levitation System based on permanent magnets (the M-BAHN ).

On the basis of the information available, the M-BAHN System appears to be an attractive option, because of its expected lesser total costs, improved

1.

technology, and it being almost noiseless. The problem, however, is that this system has not been tried out over long distances, with heavy loading, and as a commercial venture anywhere in the world. Also, no reliable cost estimates of the system are yet available. However, with a view to not closing our option to a new and better technology which might be in vogue in future, recommend that detailed quotations may be obtained for both the conventional LRT System and the M-BAHN System for the full length(about 36 kms) of the East-West Corridor. If, on the basis of the quotations received, the M-BAHN system is found to be cost-effective and the system should be tried out over competitive, and subjected to full distance of 10 kms. operational trials. After it proves successful in these trials, it could be extended over the entire length of If, for some reason, the trials the East-West Corridor. satisfactory, we could change over to the measure of conventional LRT system. Further, as a caution, all the required guarantees and, preferably, some equity participation, should be secured from the manufacturers who have evolved the M-BAHN system, 80 that our risks are minimised. We are conscious of fact that working the system in its initial phase of 10 Kms. and testing it would require 3 years and the total project would be delayed to that extent. However, as we want to be certain about the system to be adopted permanently and do not want to close our option to a new and better technology which might be in vogue in the ofuture, it looks to us worthwhile to accept the delay of three years. During this period, the endeavour should be to do whatever can be done as the preliminary work which has common relevance for both the conventional LRT and the M-BANN systems, in order to reduce the overall completion time.

3 In the identified alignment of the East-West Corridor, adequate space is not available throughout for running the MRTS on the surface. Therefore, it have to be elevated or taken underground in Some portions of the corridor. The cost of taking the system and to not the sec underground is very heavy and the time taken for constructin is also more than that for construction on surface or as an elevated structure. on Manage Language of the Add therefore, recommend that the underground portion of the a Limped of Markey or many in the growth street in MRTS should be kept to the minimum. We anticipate that WINDOW WE LIGHT WAY JESUS would not exceed 6 kms. - about 3 kms on either side of Connaught Place - where the environmental considerations have special importance. The system should be kept on the surface as far as possible, and, in fact, in the entire Trans-Yamuna area, it should be on the surface. In the remaining part of the corridor, where adequate space is not available on surface, would have to be elevated and all efforts need to made to suitably design the structure so

elevated portion looks elegant and merges well with the environment.

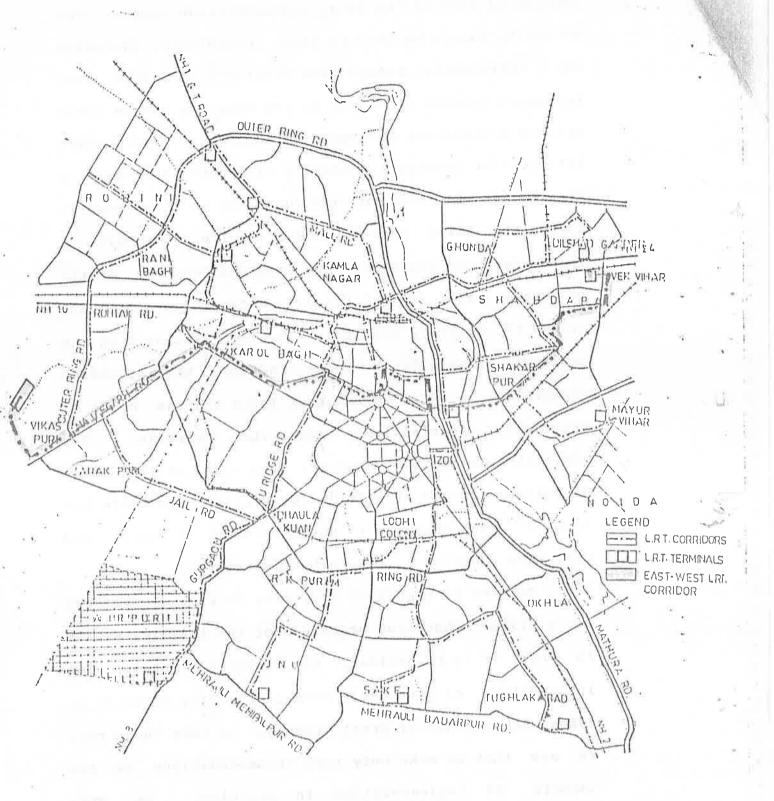
1.4 The cost of introduction of the MRTS on the East-West Corridor is expected to be about Rs.750 crores. As, technically, it is feasible to execute the project in 6-7 years, the annual average capital requirement would be of the order of Rs. 120 crores. We recommend that the Delhi MRTS should be financed on the basis of the standard pattern being considered for application to Under this pattern, the all States/metro cities. 'Centre', 'State' and 'City' would pool the resources in the proportion of 40:30:30. For Delhi, the share of the 'State' will have to be borne by the Delhi Administration and that of the 'City' will have to be contributed by all the three local bodies, viz. the Municipal Corporation of Delhi, the New Delhi Municipal Committee and the Delhi Cantonment Board. The Central contribution of 40% share may be given as soft loan in perpetuity, carying an interest rate of 3%, with a moratorium on intérest for the period of construction In Chapter IV, we and five years thereafter. additional ; resource measures for belaeppua some mobilisation to enable the Delhi Administration and the local bodies to meet the remaining 60% cost. of system, which is to be equally shared by them.

the desired objective of meeting the transportation needs of the city unless it is backed by a Unified

Metropolitan Transport Authority to take an overall and integrated view of the total transportation system. The Authority should be able to plan, coordinate, integrate efficiently manage and develop the various transport systems operating in the city, to ensure their optimum utilisation and coordinated growth. The Unified Metropolitan Transport Authority will have to be set up by an Act of Parliament and should be an organisation under the Delhi Administration. Its composition, objectives and functions have been indicated in detail in Chapter V. It will function under the chairmanship of the Lt. Governor and will have senior officers of the Delhi Administration, local bodies, the concerned Ministries of the Government of India and the heads of transport organisations under its umbrella. The Administrator of the Authority, who would be its Chief Executive, would be a full time officer; not below the rank of Joint Secretary to the Government of India, will also function as its Member-Secretary.

if a virtual chaos and breakdown of the traffic system in Delhi is to be avoided, the decision regarding the introduction of a suitable MRTS in the city ought to be taken with a sense of great urgency. We have taken care to see that we make only such recommendations as are capable of implementation in practice. We are, therefore, confident that if the recommendations made by us are accepted and given due support, a well-suited MRTS for Delhi would be a reality soon and would go a long way in facilitating a balanced development of the city and improving the quality of life of its citizens.

# L.R.T. CORRIDORS - DELHI URBAN AREA



	3	THE PARTY
34.		In) No
Delhi Dehat Sangharsh Samiti,	100	Name and Address of Objector(s)
Land Acquisition :	این	Summary of Objections/ Suggestions
	4	Comments

New Delhi-110 045. Dada Dev Mandir, Palam,

required. ment can continue to acquire wrong surmise that the Govern-The Plan has been based on the joining farmers' States as and land in Delhi and adwhen

# Population Control

population, which they have been effective measures to failure until such time that and the NCR Plan are doomed to lation. Both the Master Plan to control steep rise in popubut taking no concrete steps flux of population into Delhi based on finding ways and means derations, the Plan has been the Government decides to take to accommodate the entire in-Purely out of political consimanifestly evading to do so far. control

> ding marshy land adjacent to adjacent area is always converted ment-urban and rural grows, the As the population of any settle suitable for such expansion of waste and barren land inclunon agricultural land in the for necessity arises for urban exthe settlements is pansion,the less fertile land, for expansion. As and when considered the

Government is deeply concerned with the population explosion have initiated effective measure of Delhi in the near future and suggested for developing them urgency and importance of deveover a perspective period of 14 been recognised and strategies Delhi on priority loping certain towns around facilities at a standard compa opportunities and services and providing them enough economic The NCR Plan suggests years ending 2001 rable to that of Delhi. The tion into Delhi to areas outside to deflect the influx of popula contain T. () A.D. The basis has manageable measures

trolled population likely to reach 132 lakhs (amended to 112 lakhs now) housing, water, electricity, drainage, in Delhi, as they have been doing so far,Delhi Administration cannot by uprooting village after village Even if land can be made evailable provide basic necessities, like, transportation and other infrastructure to a swelling and uncon-

tion of Delhi to as minimum as possible two strategies have been adopted: by 2001 A.D. To contain the populapopulation of more than 132 lakhs population growth continues, Delhi will have If the present trend of

4

growth population by effective family planrate of influx of migrants to Delhi; natural ning measures within Delhi. ii) to control the and

i) to deflect the ever increasing

situation by 2001 and they may initiate population by the turn of the centurs; and drainage,transportation and elecnecessary steps to cater to the tricity are aware of the likely services like water supply, sewerage lakhs rural population by 2001 A.D. and other Through bot! the measures, the popuconcerned agencies/authorities on a 40 minimum of 112 lakhs including lation of Delhi could be kept The Delhi Administration

# Disregard of Rural opinion :

based on development of rural zones, the Board or consulted while making Plans. This bias against rural re-presentation has done tremendous entire plan is population has been inducted into yet no representative of rural though the

Minister for Railways under the Chair-manship of Union Urban Development The NCR Planning Board is represented Union Minister of Industry, State by Chief Ministers of U.P., Haryana and Rajasthan, Chief U.T. Executive Councillor of Delhi amongst others

harm to the cause of the NCR Plan. The popular opinion has hardened against the conspiracy being hatched against their interests.

# Recommendations

- no more of kisans' land in Delhi will be acquired and that no more land in rural areas will be allotted to any JJ/resettlement colonies or group housing societies. It is only through this bold step on part of the Government that the kisans will stop sale of their land, help control unauthorised conpopulation.
- ii) The Government must also reduce construction activity in Delhi to the barest minimum, thereby applying brakes on the influx of migratory population.
- ble in case of an emergency, Land Acquisition Act be suitably amended to provide for fixation of compensation by arbitration as recommended by 87th Lok Sabha Estimate Committee Report.

Minister and thus, both rural and urban population is fully represented in the Board.

This concerns Delhi Administration and Delhi Development Authority. However, the DRP envisages use of only less-fertile and the non-agricultural land for urban expansion in future.

This concerns Delhi Administration and Delhi Development Authority. It may however, be noted that there is huge backlog of housing requirements in Delhi.

It concerns Delhi Administration and Delhi Development Authority.

iv)

Rural representation on the Central and Zonal Boards is strongly recom-mended but it must not be nominated from Government sponsored bodies headed by self seeking individuals, who cannot be trusted to look after

rural interest.

It concerns the Central Government and Delhi Administration.

4,

to Agenda Item No.5

Transport sector plan for National Capital Region - Ministry of Railways comments on Rail projects included therein.

# Recommendations

Comments

# 1) Short-term measures

Composition of passenger trains should be increased from 12/13 coaches at present to 20 coaches.

Ministry of Railways already have the policy of augmenting the composition of passenger carrying trains to increase their throughput. This proposal, in the context of NCK, is primarily & in respect of passenger shuttles which ply in the National Capital Region. [ Implementation of this proposal involves lengthening of passenger platforms, remodelling of yards, and procurement of additional coaches and locomotives. The scope of work involved and the cost thereof in respect of National Capital Region can only be worked out on the basis of field survey. In case of a few shuttles, the composition has already been increased to 16-17 coaches.[In any case, the cost of these works would not be 'marginal' as has been stated in the ORG Report.

# 2) Long term measures

i) Creation of additional line caracity in Del'i area by re-routing of celtural through passenger trains, via the Delhi Avoiding Line. This would need expansion of yard facilities at Safdarjang which can eventually be developed into a full Passenger Terminal for Delhi.

hationalisation of routes of long-distance passenger trains, it a vice to generating additional line capacity, is a continuous process and is already being done by the hailways. (In the case of re-routing of trains like Frontier Mail as suggested under the ORG Report, a detailed examination of all relevant aspects would need to be done by Northern Railway before any such suggestion can be implemented. It may, however, be pointed out that adequate land is not available at Safdarjung for developing a proper passenger terminal at the station. Brar Square appears to be a more suitable site for development of an additional passenger terminal . for Delhi area. A passenger terminal at this location can serve both BG and MG trains, thereby eliminating the necessity of developing a separate MG terminal at Patel Nagar as

∠Patel Nagar

ii) hationalisation of freight traffic moving towards Punjab/Haryana to avoid their concentration via Delhi as at present, i.e. to the extent feasible coal trains going towards Punjab/Haryana should not be diverted via Lucknow - Saharanpur route instead of moving via Allahabad-Ghaziabad electrified route as at present.

iii) (a) Provision of 4th ) line on Tughlakabad (Junction) Cabin)-Faridabad-Palwal ) Section.

- (b) Provision of additional dedicated single MG line from Delhi (Patel Nagar) to Rewari (74.71 kms) for Diesel hauled suburban passenger trains, on Push-Pull system, between Delhi-Rewari/Alwar. This would also involve development of a full fledged suburban Passenger Terminal at Patel Nagar.
- (c) Doubling of Muradnagar-Meerut Cantt Section and electrification of the Ghaziabad-Meerut route for running of EMU trains.
- (d) Provision of additional 3rd line (reversible) between Ghaziabad and Khurja (62-43 kms)
- (e) Provision of two additional electrified lines between Sahibabad-Ghaziabad (6.72 kms).

suggested in the ORG Report.
In any case adequate land is also not available for developing MG.
Passenger terminal at/Station.

Rationalisation of freight train movement to create additional line capacity is a continuous process and is already being done to the extent possible by the "ailways.

Mone of these works have been planned by the Railways so far.

This work has already been sanctioned and is in progress. Tentative target for its completion is March, 1989. However, the additional line capacity generated as a result of the completion of this work is required to cater to the expected increase in freight traffic and long distance passenger traffic, i.e. it would be difficult to accommodate additional suburban trains on the completion of this work.

- From the above, it would appear that the strategy envisaged in the OKG Report for dealing with the increase in suburban traffic in the NCR is to utilise the existing radial corridor with marginal inputs to optimise their carrying capacity. This amounts to perpetuating a situation in which the same rail tracks would continue to be utilised both for freight/long distance passenger trains and the suburban trains. As is well known, suburban trains require high frequency service, specially in morning/evening neak hours and this object cannot be achieved except on 'cedicated' suburban rail tracks i.e. exclusive tracks for suburban services only. Railway's experience has been that mixing up of suburban trains with freight/long distance passenger trains is not conducive to efficiency in operation as on the common tracks it is not possible to run suburban trains at the desired frequency while at the same time main line passenger train punctuality suffers and goods trains running gets adversely affected. It would therefore be desirable that independent pair of tracks is provided for exclusive running of suburt trains on the various corridors.
- (4) It has not been indicated in the Report as to whether the NCR Planning Board would arrange funds for the above rail-projects, outside the Railway Plan. In view of the resource-constraints and the nailway's need to accord priority to safety-oriented rehabilitation works and other works needed for augmenting the infrastructure for carrying long distance passenger traffic and freight traffic vital for national economy, it would be difficult for the nailways to undertake any of the above projects within their Plan. Capital investments needed for these Projects, as also their annual recurring expenses would, therefore, need to be arranged by the NCR Planning Board.
- Nules of Business Allocation, the subject of urban transportation whether road or rail based, now falls under the purview of the Union Ministry of Urban Development. Railways are required to provide only necessary technical assistance in the planning and execution of rail-based transportation projects, since they have the necessary expertise in this field. Such assistance would be provided to the Ministry of Urban Development, but the initial/recurring cost would need to be borne by them.
- (5) The ORG Report has not analysed the problems of urban transportation in Delhi Urban Area (DUA). Delhi today is probably the only city of its size in the world whose Mass Transportation facilities are almost wholly road-based. The number of buses on the roads of Delhi has already become more than 6,000 and it would not be possible to add more buses to deal with the increasing need of mass transportation. It is, therefore, necessary that high-capacity rail-based Mass Rapid Transit System is provided in Delhi It is understood that DDA's perspective Plan for the year 2001 provides for 200 kms of LRT lines for Delhi. A Task Force headed by Secretary, Ministry of Urban Development has already submitted a report suggesting the need to take up, as first phase of the MRTS net-work for Delhi, 36 kms long East-West Corridor from Vivek Vihar to Vikaspuri.

It is suggested that the net-work proposed in the DDA's mass Perspective Plan for Urban transportation for Delhi should also be included in the transport infrastructure for Delhi Urban Area in the NCR Plan for transport infrastructure.

- 6. In para 3.9, page 37, estimated cost of rail projects as proposed in the ORG Report has been indicated. Apart from what has been stated in para (3) above on the need of planning additional pairs of dedicated tracks for suburban trains, this cost can at best be taken as ad-hoc. Realistic costing which can be done only on the basis of engineering surveys, might vary substantially from the cost given here. This aspect has to be borne in mind.
- 7. The ORG Report recommends provision of Freeways on certain corridors emanating radially outwards from Delhi. As is well known for mass transportation, rail-based systems provide the highest capacity. Besides, rail-systems, for equivalent capacity, occupy much less land-space. These systems have also the advartage that they cause least air pollution and are based on electric traction. On the other hand road-based systems cause very high air-pollution and rely on petroleum fuel which is in short supply and has to be imported by spending foreign exchange. Moreover energy-wise, rail based systems are much more efficient tince the requirement of energy per passenger-kilometre for rail systems the requirement of energy per passenger-kilometre for rail systems very much less as compared to the road-based systems. It is, therefore, suggested that the idea of Freeways be given up, and in lieu thereof, rail-based systems should be adopted. An additional advantage would that the rail-based corridors would be integrated with the MRTS to be provided within belhi Urban Area and thus the congestion caused on the roads of belhi? Vehiles coming from the suburbs on Freeways, would also be avoided.
- 8. Summarising, comments of this Ministry on the various projects included in the CRG Plan are as under:
  - i) Laik a Ministry already have the policy sugmenting the composition of passenger carrying trains to increase their throughput. This however, needs procurement of additional coaches, locomotives, lengthening of platforms,

↓ Note:- Energy efficiency of various modes of urban transport generally accepted is as under:

Mode of Transport	Energy Requirement per passenger km (KWH)
i) Personalised Transport (Car)	0.90
ii) Road Bus	0.23
iii) Electric Trains	0.04
iv) Aircraft	2.04

re-siting of signals, remodelling of yards etc. The extent of work involved can only be known on the basis of field survey. In the absence of such a survey, it would, however, not be assumed that the cost of such work would be marginal; on the contrary, these costs can be substantial.

- ii) Creation of additional line capacity by re-routing of certain through passenger trains and rationalisation of freight traffic moving towards Punjab/Haryana is a continuous process and is already being done by the Railways.
- iii) It would not be possible to develop the existing Railway Station at Safdarjang into a full-fledged terminal as adequate land is not available at the station for expanding the infrastructural facilities needed for this purpose. Similarly, development of a separate MG terminal at Patel Nagar is not considered feasible. Brar Square is considered to be a more suitable site for development of a BG/MG passenger terminal.
- viv) Various rail projects included in the ORG Report, such as provision of 4th line between Faridabad and Palwal, add-itional single MG line between Patel Nagar and Pewari, doubling of Morad Nagar-Meerut Section, electrification of Ghaziabad-Meerut route, provision of additional 3rd line between Ghaziabad and Khurja, have not been included in the Railway Plan.
- v) Optimisation of the existing rail corridor by giving marginal inputs for running of additional suburban trains is not considered feasible, since this would be one of the means to be adopted by the Railways to deal with/growing long distance passenger/freight traffic. Hence for running of EMU suburban trains, provision of dedicated tracks should be considered.
- vi) Initial capital investment as also subsidy for operation/maintenance of all rail projects proposed in the ORG Plan would have to be granuced by NCR outside the Railway Plan. In other words, Railways would only provide necessary technical assistance in the planning, execution and operation of such projects at the cost of NCR.
- vii) MRTS required for Delhi urban area should also be dovetailed with the ORG proposals.
- viii) Freeway is a new concept for our country. It is felt that it would be more cost-effective to go in for rail-based systems than Freeways.

/the

MINUTES OF THE 11TH MEETING OF THE PLANNING COMMITTEE OF THE NCR PLANNING BOARD HELD AT 11 A.M. ON THE 19TH NOV., 1987 IN THE OFFICE OF N.C.R. PLANNING BOARD, NEW DELHI.

ofc

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 Om Kumar, Vice Chairman, Delhi Development Authority.
- 4. Shri S.M. Mittal, Executive Director (MTP), Railway Board.
- 5. Shri D.P. Gupta, Chief Engineer (Planning), Ministry of Surface Transport.
- 6. Shri P.B. Mathur, Commissioner & Secretary, Urban Development, Housing and LSG Deptt., Government of Rajasthan.
- 7. Shri Prasanna Kumar, Director, Town & Country Planning Department, Government of Haryana.
- 8. Shri J.P. Bhargava, Chief Town and Country Planner, Government of Uttar Pradesh.
- 9. Shri C.S. Mehta, Chief Town Planner, Government of Rajasthan.
- 10. Shri B.N. Singh, Chief Regional Planner, NCR Planning Board Member Convenor.

# Other Participants :

- 1. Shri Shankar Aggarwal, Jt. Secretary, Housing & Urban Development, Government of Uttar Pradesh.
- 2. Shri S. Shiva Kumar, Scientist S.E., Ministry of Environment and Forest.
- 3. Dr. H.D. Goyal, Deputy Adviser (HUD), Planning Commission.
- 4. Shri R.K. Gupta, Director (Telecom. Planning), Telecom Board, Ministry of Communication.
- Shri B.D. Gulati, Chief Coordinator Planner NCR, Government of Haryana.
- 6. Shri G. Kumar, Jt. Director (MTP), Railway Board.
- 7. Shri Ashok Singhvi, Project Director NCR & Secretary, Urban Improvement Trust, Alwar.
- 8. Shri V. Mehrotra, Director (Industries), Government of Haryana.
- Shri J.C. Gambhir, Director (Planning), Delhi Development Authority.
- 10. Shri D.K. Khanna, Deputy Director, Land and Building Department, Delhi Administration.

30.580.87

- 11. Shri K.T. Gurmukhi, Town and Country Planner, TCPO, Ministry of Urban Development.
- 12. Shri Prakash Narayan, Jt. Director (PPW), Delhi Development Authority.
- 13. Shri H.K. Sharma, Senior Planner, Town and Country Planning Department, Covernment of Ottar Pradesh.

# officers of the Board :

- 1. Shui S. Arunachalam, Senior Planning Engineer.
- 2. Shri R.P. Rastogi, Regional Planner,
- 3. Shri S.B. Verma, Associate Planner.
- 4. Shri V.K. Thakore, Senior Research Officer.
- 5. Shri Pran Nath, Deputy Director (Adm.).
- 6. Shri K.L. Sachar, Finance & Accounts Officer.
- 7. Shri J.N. Barman, Assistant Town Planner.
- 8. Shri P. Jayapal, Assistant Town Planner.
- 9. Shri Madhu Babu, Assistant Town Planner.
- 10. Shri Manmohan Singh, Research Officer.

# AGENDA TIEM MO. 1

# CONFIRMATION OF THE MINUTES OF THE LAST MEETING OF THE PLANNING COMMITTEE HELD ON 7.7.87.

The Committee considered the amendments in the minutes on item No.  $\lambda(V)$  - review of the action taken on the Agenda item of the 9th meeting of Planning Committee. It was felt that the minutes reflected the discussions that took place in the 9th meeting on this Agenda item and no amendments were felt necessary.

Shri P.B. Mathur, Secretary Rajasthan stated that in addition to the rail link from Rewari to Dharuhera and Bhiwadi, he had also suggested the following:

- i) Conversion of Metre Gauge to Broad Gauge from Delhi to Alwar.
- ii) Upgradation of NII-8 upto Behror to M I standard.
- iii) Additional road of M II level from Rewari to Alwar via Harsauli and Khairthal parallel to existing railway line.

It was decided to incorporate the above suggestions in the minutes of the last meeting held on 7th July, 1987. The minutes of the meeting held on 7.7.1987 were thereafter confirmed.

### AGENDA ITEM NO. 2

# REVIEW OF THE ACTION TAKEN ON THE AGENDA ITEMS OF THE 10TH MEETING OF THE PLANNING COMMITTEE.

# 1. Agenda Item No. 2(V)

Consideration of the letter No. 21/6/85 - DA(P) dated the 1.9.1987 received from the Department of Power, Ministry of Energy regarding creation of NCR Electricity Authority and allocation of additional power to NCR. The Committee discussed the communication of the Ministry of Energy regarding poh-feasibility of the creation of a separate Electricity Authority for the NCR and also difficulties in allocation of additional power to NCR.

Shri P.B. Mathur, Secretary, Rajasthan felt that a paper should be prepared indicating the need for such an authority clearly spelling out how the proposed authority could help in increasing the power supply to participating States. He stated that this paper should be sent to State Governments for their comments which can then be forwarded to the Department of Power, Ministry of Energy for further consideration. This proposal was accepted.

## 2. Agenda Item No. 2(6)

Management Structure of NCR

Member Secretary stated that except Haryana, response from other states was still awaited. He agreed with the contention of Haryana Government that Haryana Urban Development Authority was an appropriate agency for this purpose. Shri Mathur stated that their state accepts the stipulation in the D.R.P. for creation of a separate authority and informed that suitable legal provisions would be made in their proposed Town and Country Planning Act. Pending that, it was proposed to delegate enough powers to the U.I.T., Alwar to play the required role. Shri J.P. Bhargava felt there was no need for creation of any other authority in addition to the existing four development authorities in the U.P. Sub-region. Shri Shankar Aggarwal stated that a Steering Committee has already been set up under the Chairmanship of Chief Secretary while another Committee at the Sub-regional level under the Chairmanship of Commissioner Meerut Division is contemplated. Member Secretary clarified that the regional planning and development encompasses both urban and rural areas and there was a need for an unified organisation to integrate and coordinate the development of urban and rural areas. It was decided that this matter may be pursued further with the State Government after information was received about the functions proposed to be allotted to the Committee at the Divisional level

## AGENDA THEM NO. 3

# LOCATION OF THE OFFICE OF THE MCR PLANNING BOARD OUTSIDE DELIII.

Shri P.B. Mathur, Secretary, Orban Development, Government of Rajasthan stressed that for effective coordination between the Ministry of Orban Development, various Central Ministries, belhi Administration, Delhi Development Authority and also the participating State Governments and for their frequent meetings, the ideal location for the NCR Planning Board's office was Delhi. He stated that the location of the office which has 30 to 40 staff strength, outside Delhi would not, in any case, have any impact in reducing the congestion in Delhi.

Shri Om Kumar, Vice-Chairman, DDA was also of the opinion that the NCR Planning Board's office should continue in Delhi because DDA, Delhi Administration and NCR Planning Board would have to work together to achieve the NCR objectives, requiring close and Irequent interactions.

Shri Prasanna Kumar, Director, Town Planning, Government of Haryana, stressed that the NCR Planning Board's office should continue in Delhi which is centrally located and is connected by all modes of transport. This view was generally endorsed by other members also. At the same time, representatives of the participating states assured all cooperation in making land and other facilities available in their respective states, if it was decided to locate the office outside Delhi.

# AGENDA TIEM NO. 4 PREPARATION OF SUB-REGIONAL PLAN.

The time-frame for the preparation of the Sub-regional Plan to be completed by August, 1988, was agreed to both by Haryana and Rajasthan while the Chief Town Planner, Uttar Pradesh suggested that it should be extended by another three months ending mid Hovember, 1988. Regarding the creation of the Planning Cells in the Sub-regional areas of the NCR States, it was suggested that the staffing pattern, depending upon the work-load, visa-vis the size of the sub-region, should be prepared by the NCR Planning Board and circulated to the concerned State Covernments for further necessary action.

### AGENDA THEM NO. 5

# TRANSPORT SECTOR PLAN FOR NCR AND M.R.T.S. FOR DELIII.

A brief presentation of the transport sector plan for NCR through the computer graphics was made highlighting the main

recommendations emerging out of the transport studies for NCR by the Operations Research Group (QRG) vis-a-vis the proposals made on the basis of the preliminary studies and findings by the ORG in the Draft Regional Plan NCR - 2001. The Vice-Chairman, Delhi Development Authority reacting on the proposals, particularly on road network in the regional context, was of the view that the radials in the form of express-ways and the National Highways, with the improvements and additions will serve to bring more and more people to Delhi instead of syphoning of excess population of Delhi to outside areas. Emphasising the importance of the railway bypass, the Vice-Chairman added that if the bypass was to come after 2001, enough damage in the form of over-congestion, traffic chaos in the city would have been done by then. He reiterated that the railway bypass as contemplated in the NCR Plan-1973 and also in the Interim Development Plan, 1986 would be a best solution to decongest the over growing city core. It was agreed, at the instance of the Member Secretary that a write up explaining the need and importance of the said railway bypass to Delhi in the immediate future should be made available by the Delhi Development Authority to the Board for further consideration.

Shri Pharqava was of the view that in view of the fast development taking place and the likely traffic generation that would follow in the course of time, the Delhi-NOIDA-Surajpur-Dadri road should be strengthened to improve it to National Highway standards. The Member Secretary felt that this being a sub-regional link should be considered in the Sub-regional Plan.

Shri Prasanna Kumar observed that the transport network of NCR consisted basically of the road network, and in fact, preference should be accorded to railway lines which would serve better with more passenger capacity. He suggested the Faridabad-Gurgaen road to be of National Highway Standard.

Shri Gupta, Ministry of Surface Transport, suggested that in addition to the proposals made in the Draft Regional Plan, Palwal-Khurja and Ballabgarh-Bulandshahr links should be included to facilitate smooth flow of traffic in the outer and inner grids and this should form part of the regional road network. Shri Gupta also expressed reservation on the number of lanes and PCUs ratio suggested by ORG.

The Number Secretary, drawing the attention of the Members to the proposed MRTS, felt that this should be extended for a few kilometres away from Vivek Vihar towards Ghaziabad which would serve the trans-Hindon urban areas having a very high rate of daily commuter traffic with Delhi. Shri Shankar Aggarwal agreeing to the proposal said that the State Government would be willing to examine the funding on similar lines. Some of the Members were of the view that both planning and operation of transport should be undertaken by the proposed UMTA for effective coordination and successful implementation of the programmes. Other members felt that, as the experience showed, the operation should be by a separate body which could be a wing of the UMTA.

Regarding the railway network, Shri Mittal highlighting its importance in terms of economy with higher freight and passenger capacity, preferred additional dedicated lines in the regional context connecting Delhi to regional towns and beyond. Except for the high capital cost, railway, as a mode of traffic, is superior in terms of energy saving, space requirement and noise level. He reiterated the view that the terminal proposed at Saldarjung and Patel Nagar would not suit for want of adequate land besides its adding to the congestion already being faced Shri Gambhir suggested that Papan Kalan, a in these areas. new township of 11 lakhs population, South West of Delhi would be more suitable for the new terminal and also for new railway station which would adequately serve the West and South-West areas of Delhi. On the suggestion for an additional line in the regional railway network made by Shri Mittal, Shri Gambhir was of the view that it would add and aggravate increasing congestion of Delhi which was sought to be deflected and avoided through Plan efforts by the DDA and the NCR Planning Board. that the sub-urban areas could be served by an additional line, if required, but the regional rail network with the additional lines should terminate at the periphery of Delhi from where they could be diverted to other directions. Shri Mittal explained that nearly 80% of the passenger and freight traffic through long distance trains were meant for Delhi and, therefore, it would be essential to take the long distance regional rail traffic through Delhi. He also added that the funds for the sub-urban movement for their improvements and additions should be outside the railway plan allocations. The Delhi Master Plan suggested A terminals at the periphery which would serve to deflect the traffic meant for outside areas which would ease the congestion of Delhi to a queat extent. The Vice-Chairman, Delhi Development Authority, emphasised consideration of these terminals in the transport network of the National Capital Region which was agreed Shri P.B. Mathmor, Secretary, Rajasthan reiterated for inclusion in the report his earlier suggestions in regard to :

- conversion of the stretch between Delhi and Alwar from Motive gauge to Broad gauge;
- ii) uparadation of Mational Highway 8 upto Behr∞r from Delhi to M-1 standard, i.e., with 100 metres right of way;
- iii) provision of additional road of National Highway standard from Rewari to Alwar via Harsoli and Khairtal parallel to the existing railway line.

The Momber Secretary mentioned that this would be looked into before finalising the report.

# AGENDA TIEN DO. 6 MITURY OF COUNTER MAGRET AREAS

The Member Secretary informed the Committee that the study on identification of counter magnets for Delhi had entered its second stage. In the course of the study, on the basis

of the methodology and criteria adopted, the consultants had short-listed the number of towns from 36 to 12 for further intensive analysis and verification. Shri Bhargava, however, expressed his reservation on the exclusion of Aligarh in the final list. Views were also expressed about some other towns in the list such as Bhatinda, Patiala, Allahabad. An official communication from Rajasthan suggesting inclusion of Jaipur, Bharatpur, Ajmer was also mentioned by the Member Secretary. The Vice-Chairman, Delhi Development Authority suggested a much higher proportion of towns to be identified looking to U.P.'s large contribution to the migrant population. Shri B.N. Singh explaining the process of identification of the counter-magnets said that the towns which on their own were likely to become metropolis in the near future, existing metropolises and State Capitals were not considered for development as counter magnets, as they would otherwise also act as such without extra development inputs. on the suggestion of the members for a meeting of the Chief Town Planners of the NCR States with the Consultants to discuss the methodology followed and the criteria adopted, the Member Secretary agreed to hold a meeting with the Consultants the Chief Town Planners.

## AGENDA ITEM NO. 7

# LOCATION OF THE DISTRIBUTIVE TRADES IN NCR

The Member Secretary drew the attention of the Members to the objections and suggestions made by traders' associations and informed that traders were not totally averse to shifting but would agree to shifting provided adequate incentives for such relocations were made. The associations were by and large agreeable to the proposals made in the Draft Regional Plan and extended their cooperation and assistance in conducting surveys in identifying such establishments which required relocation. In this context, the provision in Delhi Master Plan for earmarking a huge area for relocation of the existing trade establishments in the congested part of Old Delhi was observed to counter the objectives of the Delhi Master Plan as well as the NCR Plan in the sense that it would further add to the economic activities with the creation of much employment opportunities and thus congestion to Delhi. It was suggested that the provision in the Master Plan should be relooked into and modified to effectively meet the objectives of containing Delhi's growth which was the goal of both the Delhi Master Plan as well as NCR Plan.

For carrying out surveys, commodity-wise for the wholesale trades listed in the agenda, one more item of fuel oil (petrochemicals) was suggested for inclusion. Agreeing to the proposal for conducting surveys of the wholesale trades, the Planning Committee emphasised the need for participative and cooperative efforts of the various agencies like State Governments, the Delhi Administration and the Delhi Development Authority and other trade agencies for a meaningful and realistic surveys and findings.

### AGENDA ITEM NO. 8

## RESOURCE MOBILISATION FOR NCR PLAN

The proposal for the need of an in-depth study on the various aspects of the resource mobilisation for successful implementation of the NCR Plan was appreciated and approved by the Planning Committee.

### AGENDA ITEM NO. 9

# INTEGRATED PLAN FOR PHYSICAL INFRASTRUCTURE FOR DELHI METROPOLITAN AREA

Referring to the proposal, Shri B.N. Singh, Chief Regional Planner, highlighted the importance and need for an integrated and coordinated approach for the provision of infrastructural facilities and services in the Delhi Metropolitan Area towns as they are contiguous for all ppractical purposes and formed one urban agglomeration. He added that the Plans for drainage, sewerage and flocal control have to obe worked out for the Delhi Metropolitan Area as a whole having due regard to the pollution of the Yamuna river and the drainage pattern.

The Planning Committee considered the proposal and approved to undertake an in-depth study of these aspects through a professional consultant. The members were requested to make available to the Board, if any studies, on these aspects have already been conducted in their areas.

## AGENDA ITEM NO. 10

RELEASE OF FINANCIAL ASSISTANCE DURING 1987-88 TO THE PARTICIPATING STATE GOVERNMENTS/IMPLEMENTING AGENCIES FOR EXECUTION OF NCR SCHEMES

The projects sanctioned in the meeting held on 20th April, 1987 and 7th July, 1987 by the Project Sanctioning and Monitoring Group (PSMG), the financial sanction, and the various issues relating to release of funds were brought to the notice of the Planning Committee by the Member Secretary for their information. He said that so far during 1987-88, the Project Sanctioning and Monitoring Group had sanctioned a loan assistance of Rs. 589.70 lakhs to the three NCR participating States. This included the 40th Anniversary of the Independence Commemoration Projects in Rajasthan and Haryana. He also stated that the commemoration project for Uttar Pradesh was to be considered by the Project Sanctioning and Monitoring Group in another meeting of the PSMG. He requested the States to draw the sanctioned amounts immediately.

### AGENDA ITEM NO. 11

# CONOSIDERATION OF OBJECTIONS / SUGGESTIONS RECEIVED ON THE DRAFT REGIONAL PLAN 2001-NCR

The Planning Committee considered the objections received on the Draft Regional Plan and generally approved the comments given in the agenda note relating to (i) National Capital Region and Policies for Development, (ii) Demographic Profile, (iii) Settlement System, (iv) Economic Profile (upto page iv/20) with the following additional objections. It was decided that the remaining objections would be considered in the next meeting of the Planning Committee.

# (i) Mational Capital Region and Policies for Development:

On the suggestion made by the Delhi Regional Chapter TTPT, regarding Economic Profile, Director Town & Country Planning Department, /suggested that it would be appropriate to identify settlements which would act as rural growth centres and capable of arresting migration flow to Delhi within the region instead of identifying counter-magnet for development outside the National Capital Region. Member Secretary clarified that in the National Capital Region Planning Poard Act, 1985, counter-magnets outside NCR have to be identified for development and the same outside suitably incorporated in the NCR Plan. It was also agreed that suitable proposals for development of rural areas should be included in the final plan.

# (ii) Demographic Profile:

The comments were approved by the Planning Committee.

## (iii) Settlement System :

The comments were approved by the Planning Committee.

## (iv) Economic Profile:

The Vice-Chairman, D.D.A., was of the view that while planning for the services, the floating working population should also be considered.

On the issue of incentives and disincentives for different policy zones, Shri Gambhir stated that the disincentives in Delhi are not practicable, because of the various implementation problems. Shri P.B. Mathur felt a mix policy for incentives and disincentives would be necessary for dispersal of economic activities.

Commenting upon the industrial location policy as envisaged in NCR Draft Plan, the Director of Industries, Haryana, was of the view that so far as proposed disincentives are concerned, Delhi Urban Area and Delhi Metropolitan Area should not be treated at par because both areas have vastly different - physical development as well as socio-economic character. He explained that the towns falling in Haryana portion of Delhi Metropolitan Area are independent and self-contained units and the Haryana Government has created excellent industrial infrastructure at considerable cost in these towns. If, therefore, at this stage, large and medium sized units were not allowed to be located there, the

Haryana 7

existing infrastructure will not be fully utilised. Moreover, since the Mational Capital Region Planning Board is basically concerned with the employment generation capacity of a unit, a blanket ban on large and medium sized industries would not be proper because industrial classifications are based on investment timits and not on employment capacity. He added that as per the NCR Plan policies, incentives have to be given for location of all types of industries in NCR area beyond DMA. However, this may not be possible because, as per the recommendations of the Baijal Committee, any area upto 100 kms. around Delhi shall not be eligible for grant of incentives and, almost the entire area of Haryana portion of the NCR falls within this limit. Therefore, effectively, Haryana will not be able to encourage large and medium sized units in the NCR area due to the Industrial Policy enunciated in the NCR Plan.

The Director continued that a moratorium period of at least 10 years should be granted to Haryana so that it continues to follow the present industrial policies and, the infrastructure in the DMA are fully utilised. This period shall also be utilised towards developing new infrastructure in the rest of the NCR areas so that in second phase, industries could be located there. Shri Aggarwal also stated that the available facilities in the D.M.A. towns falling in U.P. should be fully utilised.

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

No.: K-14011/2/87-NCRPR
HATIONAL CAPITAL REGION PLANNING BOARD
7th Floor, 'R'Wing, FCC Bhawan,
Janpath, New Dolhi - 110001

Dated, the 27th November, 1987

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

( B.N. SINGH ) Chief Regional Planner

Member Convenor



# COMMENTS AND RECOMMENDATIONS OF THE PLANNING COMMITTEE ON THE OBJECTIONS AND SUGGESTIONS ON THE DRAFT REGIONAL PLAN - 2001

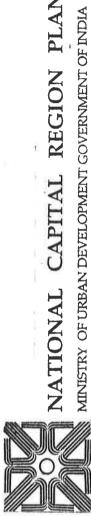
NATIONAL CAPITAL REGION PLANNING BOARD

MINISTRY OF URBAN DEVELOPMENT GOVERNMENT OF INDIA

**DECEMBER 1987** 

# COMMENTS AND RECOMMENDATIONS OF THE PLANNING COMMITTEE ON THE OBJECTIONS AND SUGGESTIONS

ON THE DRAFT REGIONAL PLAN - 2001



NATIONAL CAPITAL REGION PLANNING BOARD

**DECEMBER 1987** 

# CONTENTS

i.	NATIONAL CAPITAL REGION AND POLICIES FOR DEVELOPMENT	r-t
II.	DEMOGRAPHIC PROFILE	83
III.	SETTLEMENT SYSTEM	4
IV.	ECONOMIC PROFILE	വ
٧.	TRANSPORT	14
VI.	TELECOMMUNICATIONS	20
VII.	POWER DEVELOPMENT	21
VIII.	WATER SUPPLY AND SANITATION	24
IX.	EDUCATION AND HEALTH	56
×.	COUNTER MAGNET AREAS	28
XI.	REGIONAL LAND USE	53
XII.	ENVIRONMENT AND ECO-DEVELOPMENT	33
XIII.	MANAGEMENT STRUCTURE FOR PLAN IMPLEMENTATION	34
XIV.	GENERAL	35
	ANNEXURE - LIST OF OBJECTORS	

Summary of objections/suggestions (Objectors) Sl.No.

Comments and Recommendations of the Planning Committee

> the NCR need Kama and Deeg tehsils of Distt. are to be included checked for necessary ψo Boundaries

areas to be included in the NCR Bharatpur adjustments. 40

Improvement Trust, Alwar; 3. Urban Instt. Urban Development & Housing Deptt., of Town Planners, India; 2. (1. Delhi Regional Chapter, Rajasthan.)

examine the Delhi 2001 Perspective should each their policies and programmes eliminate inconsistencies and revised after the 1991 Census count. The NCR Plan should be prepared for instead of plan should be phased term The perspectives for Plan interconflicts. The NCR Plan should the NCR Plan and Delhi Master relationship for harmonising be compatible with and long of development in the region. Plan for ensuring balanced They need close NCR Planning Board as the perspective short perspectives. This strategies, should

should be considered by the Board to

Delhi U.T., as a Sub-regional Plan,

after five years.

conformity with the Regional Plan to

the

that

ensure

inconsistencies

flicts, if any.

remove

and

(1. Shri R.G.Gupta, Delhi Development Authority; 2. Delhi Regional Chapter, ITPI; 3. Dr.V.Nath, Centre for Policy Research, New Delhi; 4. Shri Gopal Bhargava, Delhi)

into The Plan for the Schedule 1985 and five 1991 with that of the Delhi However, NCR and thus will have both short Capital plan only be revised every the Census results would be taken perspectives. included in the National have been specified in the while revising Region Planning Board Act, change is necessary for NCR A.D. (Revised). perspective 2001 and long term synchronise Master Plan Plan will account stage. no

the

of

Comments and Recommendations

Planning Committee

India

of

General

Registrar

Sl.No.

Н

Summary of objections/suggestions (Objectors)

. .

population of the NCR should the the population size adopted in The Population of rural Delhi may be population size of 128.1 lakns for the Delhi U.T. is considered to be 5 lakhs against 2 lakhs as proposed The projection of size of 128.1 lakhs for This Delhi Master Plan for 2001 too. growth, most appropriate for 2001 A.D. after the present trend of 1991 reviewed in in the NCR Plan. Census rural the  $^{ ext{the}}$ ۲. د

(R.G. Gupta, DDA)

provided in the NCRPB Act, 1985 the f0 Plan has to be revised every five off to 1.2% by 2001, the population of Delhi U.T is envisaged to reach a urbanisation fall in the natural growth rate from 2.2% to 2% by 1991 and then tapering envisages of population of Delhi also. rural to 50% of that upto 1991 and, with a 2001 A.D. However, through a set of the between 1991-2001 could be reduced Delhi However, years which will include review population of Delhi as 132 lakhs policy measures and programmes, present 2001. projections projected into figure of 112 lakhs by therefore, of inmigration the increased to 112 lakhs by 2001. within Delhi UT, the population has restriction Plan, (Census) With rate NCR

Delhi including activities the corresponding increase only advocates towns industrial growth Area Plan The Metropolitan NCR moderate NOIDA. and

urban down

bring

component to 2 lakhs by

expected to

i.s

which rural

be made

projections made in the DRP

No changes

population mostly will become

In the case of NOIDA township at the Delhi UT border, the area under industrial use is likely to increase resulting in increase in the total work-force and consequently,

. ش

population of NOIDA may cross the 5.5 lakh mark which is assigned in the NCR Plan. Accordingly, Master Plan for NOIDA is under revision.

(NOIDA, Uttar Pradesh)

Population assignment for Rewari-Bhiwadi-Dharuhera be revised from 3 lakhs to 5 lakhs.

(U.I.T., Alwar)

not industrial use. No change need be made in the population of 5.5 lakhs occupations population size of 5.5 lakhs only by for conversion of more land This does develop assigned for NOIDA by 2001. sector to 2001 in NOIDA. tertiary have require would

The assignment of population to the DMA and priority towns has been done after long deliberations in consultation with State Government. There is no need to revise the population assignment for this complex.

. ი

4<u>2</u>1

Summary of objections/suggestions (Objectors)

S1.No.

employment generation, infrastructure Development of such settlement would for development of small settlements villages. consideration should be given and rural settlements with adequate efficient transport linkages. urban prevent migration to urban areas. with the deals and not DRP-NCR settlements Prime and

Town & Country Planning Department, Haryana, 2. UIT, Alwar)

S

decentralisation in the Haryana area of NCR. Additional telecommunication may be included for upgradation and infrastructure facilities. This will help sharing a economic Sonepet, a growing industrial centre be provided burden of of all should considerable facilities provision Sonepat. 40 Govt. Deptt., (Industries Haryana) towns to be developed as are Samalka, Sohna, Sampla and Taoru. Centres Sub-regional Additional

ന സ

(Industries Deptt; Govt. of Haryana)

Comments and Recommendations of the Planning Committee

the settlements upto basic villages and also will deal with the properly highlighted in the regional of settlements which are level sub-regional Flan will Rural at regional level should concerned upto the second as well as sub-regional plans. infrastructure development. of development an and will be region The DRP-NCR development component for the hierarchy urban. cover

discourage frequent commutation to Delhi which is sought to be avoided intentionally in the Plan to reduce pressure on Delhi and its services. since it is not Sonepat has not been identified as a considered at an appropriate time. away from Delhi facilities will of additional priority town, The provision communication sufficiently

for serving development as sub-regional centres are region, comprehensive they could be identified in the subindicators-However, additional towns, as suggested social and physical, objectives settlements harmoniously developing the equally suitable in of all the have been identified. o.F order basis regional plans. ultimately economic, the analysis second found

Summary of objections/suggestions (Objectors) S1.No.

Comments and Recommendations of Planning Committee

> working population of Delhi has not been included. The employment figures the employment figures given have to be reviewed in 1991. floating Plan,

Since no figures of floating working However, employment position shall census, they could not be included. be reviewed after 1991 Census. population are available

(Delhi Development Authority)

# Government Offices

2

i, to þ effective Semitraffic problems and need A11 NCRPB. This situation can, however, decentralisation of these offices. such proposals should be cleared concentration of offices Organisations lead for additional accomodation. Government and corrected only by Government avoidable Delhi

performing and liaison

Plan

Regional

Draft

recommends location or retention

offices

functions in Delhi and the rest

ministerial, protocol those

only

be shifted outside Delhi.

2. Dr. V.Nath, Centre for Policy of (1. Shri D.S.Chadha, Meerut Cantt.; Research, New Delhi)

ORP in respect of new offices as similar in the The NCR draft plan proposes shifting all offices which do not perform liaison to priority
A similar policy is already proposed Or functions from Delhi towns. protocol ministerial, vell

and of help distant subse-DMA towns have all facilities and, shifting these towns will The can be considered development. infrastructure offices to quently. theirtowns

ന

Offices located in Delhi serving Rajasthan Sub-region and some of the performing not offices т С

ministerial, protocol and liaison functions should be shifted to Alwar.

NOIDA authorities are also willing to consider the location of Government offices as per the guidelines of DRP-NCR.

(1.PHD Chamber of Commerce, New Delhi; 2. Alwar Chamber of Commerce of Industry; 3. Urban Improvement Trust, Alwar; 4. NOIDA, U.P.)

# Other General Observations

4

in been policy Semi-Delhi's resulted offices has not and locational οţ Government and has growth present population. Government xhenomenal successful regarding

Central Government Offices, Public Sector enterprises and large industrial units should provide the nucleus for other developments which will follow.

ى ئ (1. Rajdhani Estate Promoters and Builders Association, New Delhi; 2. Udyog Bharati (P) Ltd., New Delhi)

These may be taken note of:

objections/suggestions (Objectors) Summary of

of Comments and Recommendations Planning Committee

the

# Wholesale Trade

- the should have of associated at the initial for the finalisation of representatives community the Plan. trading stages been The a)
- trade date and therefore fresh surveys out of wholesale 1981 are need be conducted. conducted in Surveys ф (
- adjudged to be the wholesale-trade in the Draft Plan does not of 33 specific items and position correct require a review. The list reflect σ
- Hardware Traders Merchants Association, Delhi; 2. (1. The Delhi Iron & Delhi of Association) Federation
- It is necessary to define 'whole trades This should be done in repret t consultation with trade and 'hazardous' proposed are sentatives. shifted. sale Which (a

2

are being traders, The Plan does not dealing ឧន with such class of trades. clear policy for well Most of the trades wholesalers. retailers handled give ф (

these wholesale surveys Delhi conducted by PPW, DDA and this data has been utilised only and surveys need not be conducted trading associated, necessary in carrying surveys required for locational activities assess the magnitude Therefore, The DRP is based on the aspects of the trades. the However, can pe the trading of finalising character community activity. the whenever again. out t 0

Or and for bility limits of the hazardous nazardous trades, on permissiretail identification of wholesale by DDA The DRP for NCR has adopted be shifted continued perform evolved to be ţ٥ ۲ which functions criteria allowed trades Delhi. က်

- these dous items which do not require are space non-hazarmuch space shall be retained Clear guidelines to define o. in respect is proposed that requirements required trades. Delhi. 0
- d) The wholesale and hazardous trades proposed to be shifted from Delhi should be allowed to retain their establishments for administrative activity, and only selected establishments should be shifted.
- (1. The Delhi Iron & Hardware Merchants Association, Delhi; 2. Federation of Delhi Traders Association)

Under the Three Tier System of policy proposed in DRP, only selected trades are to be shifted to a particular sub-region. It is advisable that every sub-region has wholesale as well as retail business activities in all the articles.

i (T) (The Delhi Iron & Hardware Merchants Association, Delhi)

The Draft Plan suggests potential surveys of the towns for finalising location of distributive trades in different towns. Trade representatives should be associated in this task.

4

(The Delhi Iron & Hardware Merchants

The Plan policies do not debar the location of retail as well as wholesale trade establishments anywhere beyond DMA.

The trade representatives will be associated whereever considered necessary.

2

- a) The trade is completely exonerated of any type of tax such as sales tax, octroi or any other levy by the Centre/State Government or Municipal Authorities.
  - b) Cost of land should be low and building material is not taxed.
    - c) The tax exemption should be a minimum of 5 years.

for

(1. PHD Chambers of Commerce and Industry, New Delhi; 2. New Delhi Traders Association; 3. Federation of Delhi Traders Association)

Detailed policy should clarify, besides fiscal measures, the provision of physical and social infrastructure in the towns where any trade establishment is sought to be shifted.

9

(Federation of Delhi Traders Assn.,)

- a) The tentative location of distributive trades outside DMA as suggested in IDP should also form part of DRP-2001.
  - b) Few more centres in Haryana should be considered for relocation of trades.
- c) The DRP has shifted its emphasis from directing re-location through administrative measures in terms of economic and fiscal measures.

(1. Town & Country Planning Deptt., Haryana; 2. Dr.V.Nath,

A committee has been constituted by the Central Government to rationalise tax structure and other fiscal measures for NCR which would interalia examine various aspects such as those made in the suggestions.

These would be worked out in detail in the project plans to be prepared by the participating States later.

Studies have been contemplated in DRP for identifying wholesale trades/establishments that could be re-located. In this process, mercantile community will also be associated. Final locations shall be decided after these surveys.

Sl.No. Summary of objections/suggestions (Objectors)

Comments and Recommendations of the Planning Committee

### Industry

- a) Delhi UT and Delhi Metro-politan Area (DMA) should not be equated so far as disincentives are concerned for location of industries.
- b) If the industrial growth is discouraged by not allowing large and medium scale industries in DMA at this stage, the infrastructure already created in DMA towns will not be fully utilised.
- c) Haryana should be granted 10 years moratorium period to continue its existing policies of locating all types of industries in DMA towns.
- d) Due to the recommendations of the Baijal Committee, the areas falling in NCR will not qualify for Central Government incentives and thus it would not be possible to boost industrial growth in the rest of the NCR area as suggested in the Draft Regional Plan.

(Director, Town & Country Planning, Haryana)

These objections have been put up for consideration separately.

11

ions on industrial units with more than 20 workers in Delhi. This limit should be increased to 50 workers which would be in keeping restrictwith the provisions of Delhi DRP-NCR-2001 recommends Plan.

New Development Authority, (Delhi

Delhi)

The present system of clearance should continue to NCR without any reference projects Board. ر ھ

NCR Board on Licensing Committee further representation of the retary and Lt. Governer are also Executive Councellor, Chief Seclike Chief Administration and its senior-Delhi policy members of the NCRPB. As the functionaries is not desirable. industrial The

Industry and no change should be

Committee of the Ministry

represented on the

made in the proposal in the DRP.

The NCR Planning Board should be represented on the Licensing

industrial policy of the Plan.

implementation

Board on the Licensing Committee is considered essential to

representation of NCR Planning

case of Delhi,

system of clearance of projects

by the NCR Planning

At present there is no

New Director, Town & Country Authority, Harvana; Development Planning, Delhi)

Chambers of Commerce and on classification of industries for policy package in DRP based on the investment and not the employment potential.

4

Department,

New Delhi;

Planning

Industry, (1. PHD

Haryana) Country

2. Town

Industry and no change needs to adopted

The classification of industries by the Ministry made.

3

2

of Licensing Authorities should also be adequate infrastructure, civic amenities and incentives should be ensured οĘ new a higher level than at Delhi, and the remaining area of NCR should be declared clearances backward area. Facilities for all major clearand like import export and offices asked level setting up of area, any industry is should be of located in the DMA towns. The to any other industrially area. for industries incentives that Before shift

Estate Promoters and Builders, New Research 4. Alwar Industry, & Country Planning Commerce Chambers of Cor Dr.V.Nath, New Delhi; Commerce Town Deptt., Haryana) of ო Professor, PHD Industry, Chambers Alwar;

## Other General Observations

encouraged g

Planning identified after detailed study.

in NCR areas should

industries

J O

type

(Director, Town & Country Deptt., Haryana)

towns. No change need to be made in facilitate location of all types package of incentives measures and provision of infrastructure for these towns. Location acilities for major clearances like import-export etc. may be in the DMA fiscal the proposals included in the DRP the rest of the area of NCR to encourage shifting of industries in priority towns industries to these areas, the concessions including ๙ envisages well as

This may be taken note of.

3

## Fiscal measures

- a) The NCR should have uniform tax structure including sales tax and octroi and even power tariff
- b) Consignment tax should be levied at the earliest.
- (1. Town & Country Planning Deptt, Haryana; 2. Deptt. of Industries, Govt. of Haryana; 3. Alwar Chamber of Commerce and Industry; 4. Shri Gopal Bhargava, New Delhi)
- these north and in recognition of this tax the continue, peen concessions in sales should Distributive Centre of Delhi has While must offered for shifting. incentives For centuries, granted. concessions better role, were a)
- b) There should only be incentives and no disincentives.
- c) The plan should recommend higher rates of incentives specially for economic activities outside Delhi Union Territory.
- (1. Shri R.S.Bhatnagar, Udyog Bharti, New Delhi; 2. Delhi Development Authority, New Delhi)

A Committee on the fiscal issues in NCR, constituted by the Govt. of India is looking into the tax structure of the NCR. The subject of power is within the purview of the State Electricity Boards and the State Governments.

for location of those presently existing in Delhi. No change need be made in establishments to outside areas and disnew the proposals included in the DRP are to induced development activities as well as incentives NCR Draft Plan advocates a attract of wholesale trade Delhi. incentives/concessions ç ډ concessions and Z Z towns given for incentives shifting economic priority

Summary of objections/suggestions (Objectors)

S1.No..

ROADS

and should be proposed as Expressways. The Delhi-Yamunotri road should be No.10 link Faridabad, Delhi-Bhiwadi-Kishangarh-Gurgaonand, Delhi-Ballabhgarh-Hodal between Delhi and Rohtak should upgraded to M-I motorway level declared national highway. stretches namely, National Highway

(1. Town & Country Planning Deptt., Haryana; 2. Alwar Chamber of Commerce and Industry, Alwar; 3. Parishad, of Surface Transport; Vikas Baghpat-Sardhana Ministry Meerut). The expressway concept should not be important beyond NCR like Agraand 40 NCR extended the Jaipur-Ambala etc. to рe settlements confined should

2

(DDA, New Delhi)

and connecting the areas with Delhi need services The increase of the freight movement remaining parts of the NCR for which transport system such to be introduced at the earliest. be in Delhi but in of quick infrastructure or Diesel Suburban Provision should not efficient necessary provided. EMO

(DDA, New Delhi)

Comments and Recommendations of Planning Committee

NCR boundary, no recommendation need Consultants case of Delhi-Yamunatri road, the Delhi-Meerut stretch is proposed expressways in the stretches between and Delhi-Delhi-Bhiwadi-Kishangarh-Alwar; Delhi-Ballabhgarh-Delhi-The Final Traffic and Transportation recommendations may be accepted. provision the stretches beyond Meerut linked by an expressway Study by the Consultants has Ghaziabad-Hapur to upgrade lane highway Delhi-Sonipat The for Gurgaon-Faridabad; Gurgaon-Behror. justification 4 justification and 40 be made. Hodal, links for 40

expressways requested for their considered views Surface Transport would beyond NCR boundaries and the may have conducted to extend the surveys in this regard. Necessary

quick and efficient transport system been adequately proposed in the intramay reduce the freight movement in economic activities which in turn for will The NCR Plan envisages dispersal The Delhi. However, the need respective movement of traffic Plan. Regional the in Draft dealt urban Plans has

ന

forspeedy implementation and also to traffic distribution when it enters the pre-feasibility Delhi Urban Area. The transportation package of schemes for the NCR may be dovetailed with that of the Delhi of the expressways necessary to acquisition finalising the arrangements of urgent steps for for land would alignments Urban Area. initiate decide

(Ministry of Surface Transport)

i. Increase of DTC bus service to Doghat; stopping of bus at Doghat-Pushar Chowpala; and at the pond in Baraut.

ii. Uniform bus fare as of DTC in the entire NCR; extension of bus services upto Tikri;

iii. Construction of roads from Aminagarh Sarai to Gwali Khera, from Doghat to Nipura, from Veterinary Hospital to Sujiti Chowk, from Baghpat and Mitli to Binauli.

iv. Delhi-Saharanpur road should be declared as National highway.

(Shri Mange Ram Arya, Meerut; 2. Baghpat-Sardana Vikas Parishad, Arya Niwas, Meerut) A bridge over Yamuna north of the existing old Okhla Barrage would facilitate movement of passengers between Delhi and NOIDA and the DRP should include this proposal.

9

(NOIDA, Uttar Pradesh)

Feasibility studies to finalise the alignments of the expressways will be taken up after finalisation of the Regional Plan. The arrangements for distribution of traffic from the expressways as it enters the Delhi Urban Area and also to dovetail the NCR transport proposals with that of Delhi Urban Area will be dealt in the Functional Plan.

i. to iii. These do not concern the National Capital Region Planning Board.

iv) This road does not serve the functional pre-requisites of a National Highway at present.

connecting Faridabad and Ghaziabad via NOIDA which includes river projected regional proposes across cater In the context of regional DRP This will bridge of demand by 2001. requirement four lane expressway movement, Yamuna.

## B. RAILWAYS

of A link between Alwar and Delhi should terminate at Brar Square instead of Metre-gauge railway link from Rewari the development effects. The railway should for fuller realisation should converted into broad-gauge. to Bhiwadi from Rewari to Delhi at Safdarjung. Alwar provided and

(1.Shri R.G.Gupta, DDA, New Dellhi; 2. Urban Development and Housing Deptt., Rajasthan; 3. Delhi Development Authorty, New Delhi; 4. Urban Improvement Trust, Alwar; 5. Min. of Surface Transport, Govt. of India)

Hapur, Bulandshahr, Palwal, Sohna, Rewari, Jhajhar, Rohtak and Panipat of Haryana and therefore, should be included in the DRP and shown in the land use important absolutely order to open up the Meerut, through particularly and the bypass recommendations of in interiors one necessary Railway plan. (1. Delhi Development Authority, New Delhi; 2. Town & Country Planning Deptt., Haryana)

faster proposed rail terminal will. be capacity is contemplated Rewari-Dharuhera-Bhiwadi was considered as one urban node for However, a considered when justified in future. to Bhiwadi may Alwar and Delhi for according to the high Rewari traffic study purposes. Master Plan proposals. network present only fromlink transport Dharuhera movement. petween located railway

serve to open up vast backward areas traffic requirements adequate taking into account constraints for the development further increase in the freight movement This would also sub-According to the transport study for intrafor through the region by 2001, new rail in Delhi to cater to the substantial as proposed may be taken action for acquisition justification in terms of in regional traffic requirements this proposal within NCR upto of transport infrastructure the region and help However, national 2001 A.D. NCR. land etc. advance bypass A.D. and

е С

The Alwar-Mathura broad guage line should be included for NCR funding.

(Urban Improvement Trust, Alwar)

The DRP-NCR does not provide for a link with NOIDA. It would be essential to make provision for the rail link.

(NOIDA, Uttar Pradesh)

5

The double Metre-guage line proposed for the electrification from Delhi to Rewari should be extended upto Alwar. Behror to Meerut, Hodal to Panipat via Ghaziabad should have 2/4 track based electrified rail system.

(1. Urban Improvement Trust, Alwar; 2. Shri K.C. Tewari, DTC, New Delhi)

Location of ICD at Faridabad and Container Freight Station (CFS) at Panipat should be considered.

ø

(Town & Country Planning Deptt; Haryana)

This lies outside the NCR boundary and, therefore, concerns the Ministry of Railways.

The DRP-NCR proposes an expressway between Faridabad and Ghaziabad via NOIDA which will suffice to meet the traffic requirements in the future.

The NCR Draft Plan recomends a dedicated railway line from Delhi to Alwar via Rewari. Electrification of other suggested lines may be considered when justified.

For location of ICD and CFS within NCR, a separate study may have to be undertaken which may form part of the Functional Plan.

### C. AIRWAYS

2

The distant NCR settlements like Panipat, Alwar, Rohtak and Bulandshahar be inter-connected by air amongst themselves and connected with Delhi.

(1. Urban Improvement Trust, Alwar; 2. Alwar Chamber of Commerce and Industry, Alwar; 3. Min. of Surface Transport, Government of India; 4. Shri R.S. Bhatnagar, Udyog Bharti Ltd., New Delhi)

## Other General Observations

the railway and road transport is under examination by the Task Force set up by the Ministry of Urban the Transport Authority to transport modes and to help in rationalising the inter-city and between For the Unified Unified Authority Their recommendations O. into the inter-action intra-city fare structuras to set up a may be taken into account. Transport a whole, should be set up. proposal Metropolitan Metropolitan Development. S S various region look

(1. Min. of Surface Transport, Govt. of India; 2. Delhi Regional Chapter, ITPI, New Delhi; 3. Shri K.C.Tewari, DTC, New Delhi)

The DRP suggests extending air services to the regional centres on priority basis through short distant carriers.

The Draft Regional Plan for NCR recommends setting up of a Unified Metropolitan Transport Authority for the entire region while the Task Force confines its recommendations only to Delhi Urban Area.

ю .

may be taken note of.

(Volunteer-in-charge, Computers Education-cum-Protection Centre, New Delhi).

Speedy and subsidised transport

provided in order

may be taken note of. This

the

to check

population

rural

of

urban area. migration

and Commerce Jo Industry, Alwar). Chamber (Alwar

Comments and Recommendations of the Planning Committee

the of telegraph Alwar given A11 direct and and Delhi Telephone areas facilities like Delhi within connections should be should be linked to in demand. Faridabad and Ghaziabad etc. and efficient outlying provided exchanges exchange district under NCR. on þ and other practically telephone Automatic dialing offices region speedy telex like

(1. Alwar Chamber of Commerce and Inddstry, Alwar; 2. Shri R.S.Bhatnagar, Udyog Bharti Ltd, New Delhi)

## Other General Observations

its NCR are infrasinter-linked and inter-dependent  $^{\text{the}}$ both and and ช in facility transport facilities assessed Communication þę on tructure impact should

(Shri K.C. Tewari, DTC, New Delhi)

entire provision of STD services through recommends provision of telecommuniand priority for the either by direct dialing or facilities, reliable trunk Plan among in towns including Delhi Regional facilities including towns by 2001 A.D. services Draft cation region demand

This may be taken note of

II. POWER	DEVELOPMENT
II.	POWER
$\neg$	II.

Sl.No. Summary of objections/suggestions (Objectors)

Comments and Recommendations of the Planning Committee

Power availability in the entire NCR should be brought at par with Delhi Urban Area in order to attract industries to the Delhi Metropolitan Area and other areas in the region.

The Draft Plan for NCR has recommended uninterrupted supply of power at all points in the region to accelerate the pace of development & to attract industries and other economic activities.

(Towns & Country Planning Deptt., Haryana)

demand of the NCR will be

2

t 0 is forecast on the basis of Electric the power would be supplied from the regional plan 8000MW region generate 4000 MW for Delhi UT. trend of increase and which the Delhi Supply Undertaking have The power demand in the the rest of the region, to be around projected 2001 of normal demand

10000 MW by the end of the century. Can so much power be made available?

This suggestion is already included in the Draft Regional Flan for NCR.

(Shri R.G.Gupta, DDA)

The electricity rates are to be revised in such a way that Delhi becomes less preferred area for industrial activities.

ന

(Delhi Development Authority, New Delhi)

The proposal for setting up a Unified NCR Electricity Agency is not acceptable to the Govt. of Haryana. According to the Indian Electricity Act, the Electricity Board of the State concerned has

The proposal should be examined further in consultation with the State Governments and a view taken before the final document is prepared.

3

(Town & Country Planning Deptt., Haryana)

# Other General Observations

S.

- i. The proposed generation at Panipat Thermal Station is 1 X 210 MW.
- ii Haryana receives power from Bhakra Nangal Project, Dehar and Pong Power House under BBMB.
- iii. The actual availability of power in Haryana during 1986-87 was 4848 MU (Restricted) against a projected requirement of 7064 MU. The shortage has been about 30% during 1986-87.
- iv. The additional capacity at Panipat under Stage IV may be commissioned by the end of Seventh Plan. Another 60 MW Seventh Plan. Another 60 MW (Rihand STPS). At Palwal, 2X210 MW Thermal Station may come up. 200 MW Gas Plant is expected at Ballabhgarh.
- iv. Availability of electrical energy projected for 1989-90 is 9238 MU. Deficit during 1989-

These may be taken note of.

2.

3

New 220 KV Sub-station during 8th and 9th Plan at Palla, Dharuhera and Sohna may come up besides augmentation of existing 220 KV sub-stations.

>

(Town & Country Planning Deptt., Haryana)

SANITATION	
AND	
SUPPLY AND	
WATER	
111	

Summary of objections/suggestions (Objectors) S1.No.

Comments and Recommendations of the Planning Committee Sewage

DMA, a drainage plan may be prepared For J.O The NCR Planning may identify the sources and the urbanised area in Delhi U.T and does not have any source indicate the same in the Plan. and included in the NCR Plan. Supply. Board Water Delhi

New (Delhi Development Authority, Delhi)

the NCR may be identified in the NCR Plan in appropriate and concerned agency to supply in Delhi and this is the most Disposal Undertaking is directly concerned with the problem of water identify the specific sources of water supply in the However, and Water Supply water to Delhi. general.

evolve and draw up an integrated plan for infrastructure services is A sub-group comprising the concerned from the DMA going into the issue. agencies

considered appropriately keeping in view availability of resources. pe Will Will

> ded to NOIDA so that the services development may initially be extenat par with Metropolitan Area. The necessary power Delhi for and of financial assistance part sanitation be developed would Delhi.

> > ŝ

(NOIDA, Uttar Pradesh)

and sanitation should be provided electricity supply, Doghat.

. რ

(Mange Ram Arya, Meerut)

This concerns the local body.

с С This concerns the local body and the

State Government. being encroached upon by anti-social This is to Government land is of there is no facility persons in large scale. be stopped. At Loni,

(Dr.N.C.Sharma, Loni Khetra Vikas Maha Sangh)

## Other General Observations:

5. i) The concept of river basin 5. should be adopted for drainage of water supply system.

ii) Water Supply standards should be compatible with those of the National Water Supply Plan.

iii) There are some discrepencies in the data relating to civic services.

(1. Delhi Regional Chapter, ITPI; 2. Town & Country Planning Deptt., Haryana)

These may be taken note of.

Summary of objections/suggestions (Objectors) Sl.No. --

Norms of these facilities should be There should be a uniform policy for Size facilities. and comparable to that of Delhi with respect to the population education and health

(1. DDA, New Delhi; 2. Alwar Chamber Delhi Regional Chapter, ITPI, New Delhi; DDA, New Delhi; Vikas Parishad, ю . of Commerce and Industry; Baghpat-Sardana Shri R.G.Gupta, Meerut.)

should have a 1000 bed hospital and Health facilities in the rural areas Alwar with 500 bed hospital around Alwar are inadequate. specialists. ๗ Bhiwadi

2

pe engineering college and a university should be Similarly education facilities such In other small should basis the these medical college, developed at Alwar. on also, population size. established towns

fast III and a polytechnic should industrialisation in Bhiwadi, the of provided at Bhiwadi. view

(1. Urban Improvement Trust, Alwar; 2. and Commerce Alwar Chamber of Industry, Alwar)

Comments and Recommendations of Planning Committee

facilities. The norms and standards the priority and DMA towns are envisaged to be comparable with that policies on education and health provides broad of these facilities, particularly in The NCR Draft Plan obtaining in Delhi. These may be considered in the subregional plan for the Rajasthan subregion. 3

and educational

Sub-regional Plan for Uttar Pradesh the partcipating requirements at the sub-regional level would be dealth within the health by sub-region State.

> Parishad, Sardana Vikas (Baghpat Meerut)

Gwali Kheri should be established.

Gathina,

Chhaprauli,

Doghat,

Titranda and

Ramala,

Tathiri,

Government

college,

Doghat,

Baraut,

Aminagar, Baghpat,

Chhaprauli and Tehga and

Girls Inter colleges

degree college at Tatheri,

Baraut

agriculture university law faculty in

. د

the

<del>J</del>O

UNTER MAGNET	AREAS
	,
UNTER	
පි	COUNTER

×

Summary of objections/suggestions (Objectors) Sl. No. -1

Comments and Recommendations Planning Committee

Therefore, towns within the NCRPB Act as an urban area outside the NCR having regard to its location, population and potential cannot be developed as counter-Counter Magnet Area is defined under for growth. magnets. and the second priority should be to other areas of NCR and already exist should be developed as Delhi Metropolitan Area and urban areas where necessary infrastructure magnets at the

These suggestions are already being considered.

and Commerce Industry, New Delhi)

lastly the areas outside the region.

counter

for and like cities should a population of 5 to 15 lakhs fairly good base of infrastructure and with possibility Chandigarh included selection as counter magnets. also be counter magnet expansion. Allahabad, can Gwalior further Kanpur, have

Policy for Centre Research, New Delhi) (Dr.V.Nath,

quick should The proposed counter magnets have air link facility for Other General Observations

and New Builders Estates, Estate Ashoka transportation. Promoters, (Rajdhani Delhi)

This may be taken note of.

2

Comments and Recommendations of the Planning Committee 3.	Preparation of Master Plans for settlements is governed by the provision of State Acts. However, such plans would be prepared/modified plans wiew the regional and keeping in view the regional plan guidelines.	er zones alo ghways and Stat ghways and Stat ed in the land u ed in the land u problems expression mai overnments in mai negreen buffers no express and either side m the right of m the State e of the State le of the State in the sub-regi in the sub-regi in the sub-regi in the sub-regi in the sub-regi in the details in the sub-regi in the details in the details in the details in the sub-regi	achments and areas will belts of urban areas will sub- indicated in details in the Sub- regional plans by the participating States.
XI REGIONAL LANDUSE S1.No. Summary of objections/suggestions (Objectors)	Planr nideli mas	Ch C CHY CYGR P L	reas for urban ereas for urban ereas for urban ereas for urban ereas to opment so as to opment and it opment ble guideline.  Delhi Development 2. Dr.V.Na. 1; Research, New

The number of urban settlements are not included in the map. The landuse proposals for 2001 as incorporated in the Plan would amount to porated in the Plan would amount to freeze developments till 2001 as they already exist.

(All India Manufacturers Organisa-tion, Ghaziabad)

Mining may be included in the major landuse which will help protect interests of both the producers and consumers.

(Bhaskar Stoneware P Ltd. N. Delhi)

- i) Industrial area should be earmarked in Kanhar Village.
- ii) Vayu Sena Hindon Sehkari Awas Samiti Ltd. has purchased 30 hectares of land in the trans-Hindon area which is shown as Ereen belt in the Plan and requests therefore, to change to residential area.
- for as cultivated land forests. As per the development institutional- cum -agricultural Tatas. It should be, therefore, iii) The area towards State Highways Balola and Gaul Pahari villages proposed Gurgaon road in of the area Plan which was notified institute instead of forest land. is indicated under for on Faridabad and part earmarked earmarked zone,

More details may be possible only in which the map is prepared and hence the pe clearly discernable in the scale to should be taken only as indicative. functional map are as per 1981 census. The landuse map 2001 for NCR is based on the information obtained from landuse may not urban settlements shown on State Governments. Moreover, and sub-regional of details Plans. the

It would be possible to indicate broad mining areas in the subregional plans.

This concerns local body.

The use shown in the draft regional plan is in accordance with the Ghaziabad Master Flan. A request be made by the applicant to the concerned local body.

Since this area falls under the ridge area, its broad landuse has been prescribed as forests in the NCR-DRP. Other details may be shown in the sub-regional plans.

...... New Delhi)

Ω,

ဖ်

е С

2

iv) Verma Trafag Instruments Ltd.
has set up a factory on NH-8
nearly 450 mts. away from the
road. This may be considered
while finalising the Plan.

(Verma Trafag Instruments, New Delhi)

has been adopted by the NCR Plan green belt which Conversion into residen-Faridabad Draft developing that into a residenfor 419 acres of land along the & Badkal tial use should be permitted. Plan shown this been bought road between Surajkund colony. agricultural development tial 5

vi. NOIDA is experiencing unauthorised construction in and around its urbanised limits. Enforcement of stringent control over landuse to prevent conversion of landuse is necessary.

(NOIDA, Uttar Pradesh)

Mehrauli-Gurgaon road and Fari-Draft the Delhiof 1500 is in the process on UO as residential developing an area dabad-Gurgaon road. of Delhi in Regional Plan. incorporated The DLF Ltd. acres vii)

(DLF Universal Ltd., New Delhi)

This falls in the rural zone and the landuse regulations prescribed for rural areas will apply.

This concerns the Faridabad-Complex, Administration Authority/Town and Country Planning Department, Haryana.

This concerns NOIDA and Government of Uttar Pradesh.

This concerns the local body/State Government of Haryana.

#### 2

## OTHER GENERAL OBSERVATIONS:

) The plantation should be on both sides of the major roads.

This may be taken note of.

(Baghpat-Sardhana Vikas Pari-shad, Meerut)

ii) Green buffer along the National Highways and State Highways is only possible outside urban areas.

This may be taken note of.

(Delhi Development Authority, New Delhi)

This may be taken note of.

iii) There is a need to have a clear cut land policy involving participation of private builders both in the Master plans and NCR Plan.

(Rajdhani Estate Promoters & Builders Association, New Delhi)

3

the

of

Summary of objections/suggestions (Objectors)

1.5 the to densely plant the area Mandir micro climate and natural values of needs from Planning <u>ن</u> د improve allocation between Kalighati and Vijay This improve the Environment, Region W111 ranges. Capital Alwar which fund necessary immediate Aravalli National Board. in

(Urban Improvement Trust, Alwar)

# Other General Observations:

2

eco-logical balance, it would be saged in the Plan to improve the private sector in raising forest enviareas indicated in the landuse plan. involve in the supplement the steps <del>دړ</del> 0 plantation appropriate and To (g

Builders PHD Chambers of Commerce and Industry, New Delhi; 2. Rajdhani Associate, New Delhi) Promoters

bring under vegetative cover all the denuded and barren lands to improve ment has to work out the details and region. the State Forest Departrecommends the implement the programme. of Draft Plan eco-system However, NCR that

This may be taken note of.

# MANAGEMENT STRUCTURE FOR PLAN IMPLEMENTATION

Sl.No. Summary of objections/suggestions (Objectors)

c.

For Plan preparation, coordination, evaluation and monitoring the implementation of NGR schemes, there should be an appropriate management structure at the Regional, Substructure at the Regional, Substructure at the Regional, Substructure at the Regional, Substructure at the Planning in terms of Investment Planning term fund requirements should also be included in the Plan.

(1.Dr.V. Nath, Centre for Policy Research, New Delhi; 2. Delhi Regional Chapter, ITPI, New Delhi; 3. Shri R.G. Gupta, DDA, New Delhi; 4. Shri K.C. Tewari, DTC, New Delhi)

The Haryana Urban Development Authority takes care of colonies in the urban areas and no Authority such as the Sub-regional Area Development Authority will be required.

(Town & Country Planning Deptt., Haryana)

being worked out term and short term financial seeing the development programmes. The National Capital Region Planning impleplanning, overrecommends Comments and Recommendations of at various levels. an apex body will and and monitor the Planning Committee management structure for monitoring Draft Plan implications are evaluating, separately. coordinate Board as mentation NCR long

The Haryana Urban Development Authority confines its operation to urban areas and vast tracts of rural areas do not have any specific agency for their development. Therefore, an agency like Sub-regional Area Development Authority would take care of lopment Authority are not within the the areas which are not within the jurisdiction of any statutory development agency.

2

XIV. GENERAL

Sl.No. Summary of objections/suggestions

(Objectors)

Comments and Recommendations of the Planning Committee

The investment plan based on DRP would be prepared separately.

given IDP have not included the of finance required for NCR Plan but does not list international housing, social DRP indicates principal sources investment estimates institutions and investment on power, improvement possible sources. service sector. financial (q (a

The NCR Planning Board receives funds from the Central Government who in turn can raise financial resources from international institutions.

these periods. It should also be the availability of resources in is considered in the Eighth Five mentation of the final NCR plan breakand should clearly indicate Also the financing impleregional prepared at such a time that should be based on should have five yearly plan for of major projects and benefit studies. financial Flan. growth ಬರು

Ö

The suggestions may be considered when Financial Plan is prepared. The project plans would be based on cost benefit studies.

(Dr.V. Nath, Centre for Policy Research, New Delhi)

The DRP does not contain any programmes on assessing the urban development in the form of provision for housing, generation of employment or upgradation of skills of informal sector work force.

the

out

cannot detail

document a

settle-

These details will be

taken care of in project plans.

programme to be taken up at

ment level.

The NCR Draft Plan is a broad policy

at the regional level and,

(Dr.V. Nath, Research Professor, New Delhi)

of

2

3.

The development of Rohini Project of Delhi, NOIDA of U.P and DLF in Haryana are against the principles of NCR..

(Shri Gopal Bhargava, TCPO, New Delhi) A time bound action programme is required to divert migrants from Delhi to other places in the region by providing incentives and attractions in these areas.

4

(1. PHD Chambers of Commerce, New Delhi; 2. Delhi Development Authority )

For smooth implentation of the Plan, the proposed areas for development should be acquired on lease by the concerned States for a period of 20 to 30 years.

വ

(Shri R.S. Bhatnagar, Udyog Bharti. New Delhi) The Revised Master Plan for Delhi does not have any detailed plan for rural area development. It is, therefore, necessary that Subregional plans be made or modified according to the policies laid down in the NCR Plan.

(Rajdhani Estate Promoters Builders Association, New Delhi)

જ

and these developments while planning NCR the DRP has taken note of being. before planned into Board came projects were implemented for the region. However, Planning almost These

The strategy of the NCR Plan has been to make NCR towns attractive enough for potential migrants to Delhi as well as to attract people from Delhi.

NCR Plan is to be implemented by the participating State Governments and acquisition of land by the State Governments for development of areas will be as per requirements.

The Delhi Master Plan would need to be modified in the light of the proposals and policies of the NCR Plan.

é

Since prominent trade associations have not been consulted before finalising the plan, the DRP provisions are not practical. (Sadar Bazar General Merchants Association)

of note Draft and the participating State Governments. Regarding wholesale trade and induswith sugge-DDA. the DRP has made use policies proposals are in consultation Plan would be taken findings of the  $^{\mathrm{the}}$ the objections and on Plan received Draft The NCR survey However, Regional stions tries,

# LIST OF OBJECTORS: DRAFT REGIONAL PLAN - 2001 NCR

Shri Mange Ram Arya, Kasba Doghat, Meerut	Managing Director, Bhaskar Stoneware Pipes P Ltd., Ishwar Nagar, New Delhi-65	Secretary, Vayu Sena Hindan Sehkari Awas Samiti Ltd., Bhopura-Pasonda, Sahibabad, Ghaziabad (UP)	DLF Universal Ltd., 21-22, Narindra Place, Parliament Street, New Delhi-110 001.	Secretary General, Federation of Delhi Trade Associations (Regd), 76,Shardhanand Marg, Delhi-6.	Hony. Secretary, Delhi Regional Chapter, ITPI, 4-A,Ring Road, I.P.Estates, New Delhi-110 002.
Volunteer-In-Charge, Commuters Education-cum- Protection Centre, A-375, Pocket I, Janta Flats, Pashchimpuri, New Delhi-63.	Shri R.G. Gupta, Director (CP), DDA, New Delhi	24. Director, NCR-cum-Secretary, UIT, Alwar	Hony. Secretary, The Delhi Iron & Hardware Merchants Association (Regd.),	Loha Bhavan, 3610-12, Chawri Bazar, Delhi-6. Mannaging Director, Varma Trafag Instruments P. Ltd., 28, Barakhamba Road, New Delhi-110 001.	22.Director, Town & Country Plg. Deptt., Haryana, Chandigarh.
~	m	5. & 2	7	6	11 &

Shri K.C.Tiwari, Transport Planner, DTC (HQ), I.P.Estates, New Delhi-110 002.	Sr. Vice President, Alwar Chamber of Commerce and Industry, Alwar, Rajasthan.	Vice-Chairman, DDA, Vikas Sadan, INA, New Delhi-110 023.	Shri D.S.Chadha, Rivoli Theatre, Meerut Cantt.(UP).	Dr. V.Nath, Research Professor, A-5/6, Vasant Vihar, New Delhi-110 057.	Loni Kshetra Vikas Mahasangh, A-11, Giri Market, Loni, Ghaziabad, Uttar Pradesh.	Chairman, All India Manufacturers Orgn. P.B.No. 45, Hall No. 8-B, Old Navyug Market, Ghaziabad, Uttar Pradesh.
14.	16.	3 8 . 3 1 .	20.	22.	24.	26.
Director, Niagara Hotels & Builders P.Ltd., Plot No.16, Ground Floor, (in Distt. Shopping Centre), Rajindra Place, New Delhi.	Baghpat Sardhana Vikas Parishad, Arya Niwas, Meerut, Uttar Pradesh.	Chairman, NOIDA, Admn. Block Sec.VI, P.O.NOIDA Complex, Distt. Ghaziabad.	Joint Secretary to the Govt. of Haryana, Chandigarh.	Baghpat Sardhana Vikas Parishad, Arya Nivas, Meerut (UP).	Shri Gopal Bhargava, TCPO, Vikas Bhavan, I.P.Estates, New Delhi-110 002.	President, New Delhi Traders Association, M-97 (2nd Floor), Connaught Place, New Delhi-110 001.
13.	15.	17.	19.	21.	23.	25.

Managing Director, Udyog Bharti (P) Ltd., 57-M, Connaught Place, New Delhi-110 001.	General Secretary, General Merchants Association, 11, Narain Market, Sadar Bazar, Delhi-110 006.	Dy.Secy. to Government, Urban Development & Housing Deptt., Government of Rajasthan, Jaipur.	Chief Engineer (Planning), Ministry of Surface Transport, (Roads Wing), Parivahan Bhavan, 1,Sansad Marg, New Delhi-110 001.
28.	30.	32.	34.
Secretary,  NCR Committee,  PHD Chamber of Commerce  and Industry,  PHD House, Thaper Floor,  New Delhi-110 016.	Hony.Genl. Secretary, Rajdhani Estates Promoters and Builders Association (Regd.), 21, Barakhamba Road, New Delhi-110 001.	President, Delhi Dehat Sangharsh Samiti, Dada Dev Mandir, Palam, New Delhi.	Secretary to Government, Industries Department, Haryana, Chandigarh.
27	29.	31.	33.

#### TRANSPORT SECTOR PLAN FOR NATIONAL CAPITAL REGION

#### DRAFT FINAL REPORT (SUMMARY AND RECOMMENDATIONS)

Submitted to

National Capital Region Planning Board

Ministry of Urban Development

New Dehli

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR

OPERATIONS RESEARCH GROUP, Dr. Vikram Sarabhai Road. BARODA

#### PREFACE

Traffic and transportation plan forms an integral part of any worthwhile regional development plan. The significance of such a plan for National Capital Region (NCR) is all the more important. As compared to other metropolitan regions in the country NCR presents a unique spatial frame where transport infrastructure plays a critical role.

Realising this, the Interim Development Plan, prepared in 1986 by NCR Planning Board, envisaged various alternatives for developing regional rail and road network. Towards accomplishing these objectives, the plan however lacked the base-line traffic and transportation analysis covering the entire NCR and as a whole, taking into account the competing compulsions in the rail and road sector. This prompted NCR Planning Board to commission Operations Research Group to undertake the present comprehensive study on regional transport plan.

This study is a unique exercise in preparing transportation plan, not only because of the size and complexity of NCR but because the analytical approach adopted for this study goes beyond conventional methods. Some of the computerised transportation modelling techniques used for this study are expected to provide insights for similar exercise in other regions.

The base-line data for this regional transport study was generated through various laboriously devised primary surveys of large dimensions, comprising road side surveys, terminal surveys, inventory surveys and speed surveys. The data collection and analysis for this entire exercise, involving the Union Territory of Delhi and three neighbouring States and comprising some 17 urban centres, was completed within a time span of five months. This has been an unique professional exercise in several

Operations Research Group, Baroda-390 007.

respects. This study projects travel demand pattern with regard to goods and passenger movements upto 2001 as well as beyond. The findings of this study should lead to more appropriate technological and policy consideration consistent with the characteristics of the National Capital Region.

I compliment my colleagues Mr. D.N. Basu and Mr. K. Ramchand for completing this assignment in time despite constraints throughout the study period. I express my deep appreciation for the commendable efforts put in by Dr. S.P. Palaniswamy and the staff of Indian Institute of Technology, Kanpur, who have collaborated with us on this study. The expertise we obtained in the analysis for the railway sector from TIPS (India) Pvt. Ltd. has indeed been a rewarding experience. Officials of NCR Planning Board, particularly Mr. K.K. Bhatnagar, IAS, Member Secretary and Mr. B.N. Singh, Chief Regional Planner, deserve our gratitude and praise for their continued involvement and contribution at different stages of the project.

At ORG we consider this study as yet another endeavour in developing appropriate research methodologies, on the one hand, and bringing in more sophisticated sensitivity analysis to urban sector studies as such, on the other.

Dr. N. Bhaskara Rao

#### ACKNOWLEDGEMENT

In carrying out the assignment which involved a large variety of exercises many of which were carried out simultaneously, ORG-IIT study team received co-operation, assistance and advice from a large number of organisations and individuals.

The first and foremost is NCR Planning Board whose officials lent unstinted support at all stages of the exercise. The support was not limited to official sanctions and approvals, but extended to professional contribution to some important dimensions of the plan. In particular our thanks are due to Mr K.K. Bhatnagar, Member Secretary, Mr B.N. Singh, Chief Regional Planner, Mr R.P. Rastogi, Regional Planner, Mr S Arunachalam, Sr Planning Engineer, Mr D Madhu Babu, Assistant Planner, Mrs V Sundaram, Former Deputy Director, Mr K.L. Sachar, Finance and Accounts officer.

Prof. N Ranganathan of School of Planning, Delhi, was the principal reviewer of this study and his comments have helped us in improving upon reports presented at different stages.

Prof. T.V.S.R. Rao of Indian Institute of Technology, Kanpur, helped us in understanding the economic profile of the region as also in providing an insight into the factors, relating traffic flow to the socio economic base.

The Study Group on Regional Transport constituted by NCR Planning Board consisting of representatives of DDA, Planning Commission, Ministry of Urban Development (Government of India), Ministry of Surface Transport, Ministry of Railways, State Govts. of U.P., Haryana and Rajasthan, and Delhi Administration reviewed the report in different phases. The Computer Centre, Northern Railway and Metropolitan Transport Project (Railways) offered valuable assistance and information.

But for the co-operation received from Collectors and Superintendents of Police of the Districts and Delhi, it would have been impossible to complete the assignment in time.

In closing our thanks are due to Mr M.S. Gujral, Dr Jagjit Singh and Mr A.L. Gupta of TIPS (India) Pvt Ltd., New Delhi, for their professional support at all stages in spite of all odds, especially in understanding the role of the railway system.

D.N. BASU GENERAL MANAGER

## STUDY TEAM : ORG-IIT

- A. Principal Advisors
  - 1. Mr D.N. Basu
  - 2. Dr S.P. Palaniswamy
- B. Project Manager
  - 1. Mr K Ramchand
- C. Senior Professionals
  - 1. Mr K.C. Nayak
  - 2. Mr J.B. Joshi
  - 3. Mr Chetan Vaidya 4. Dr N Kaulgud 5. Mr R.B. Tripathi
- D. Other Professionals

  - 1. Mr M.V. Kumar 2. Mr A.K. Dwivedi 3. Mr M.P. Raju

  - 4. Ms A. Gupta
  - 5. Mr A Panneerselvam
  - 6. Mr P.P. Arora
  - 7. Dr S. Behl
  - 8. Mr Y.D. Chugh
- E. Supporting Staff
  - 1. Mr M.B. Nalavade
  - 2. Mr D.J. Bhagat 3. Mr A. Joshi 4. Mr R Gohil
- F. Secretarial Assistance
  - 1. Mr C. Radhakrishnan
  - 2. Mr T. Mohandas

# CONTENTS

hapte	r	E	'age	No.
I	-	INTRODUCTION		
1	0	Background Objectives of Study and Important		1
		Considerations Methodology Study Area Characteristics and		3 4
		Features of NCR Plan Data Base and Zoning		5
II		TRAFFIC CHARACTERISTICS - EXISTING AND PROJECTED		
	2.1	Introduction Existing Traffic Volume Total Goods Movement Total Passenger Movement		8 9 10 12
		(Rail and Road) Goods Traffic Projections		1.5 16
III		ALTERNATIVE NETWORKS		
	3.0 3.1 3.2 3.3 3.4 3.5 3.6	IDP Network Freeway Network Alternatives Comparison of Road Network Alternatives Road Network Evaluation Rail Network Interfacing needs of Regional Transport Plan	В	24 25 25 26 29 34 37
- IV		SUGGESTED REGIONAL TRANSPORT NETWORK		
	4 1	Introduction Proposed Road Network Proposed Rail Network		41 41 45

# LIST OF TABLES

_		
Table N	lo.	Page No.
1.1 1.2 2.1 2.2 2.3 2.4	Study Area Characteristics Zone Codes Projections for the year 2001 Traffic movement on major corridors Total goods movement in NCR and DUT	 4 7 8 9
2.5	NCR and Delhi	10 11
2.6	Goods movement pattern in NCR Modal distribution of inward commodity traffic	11 12
2.7 2.8 2.9	Generation of passenger traffic (daily) Road passenger movement pattern Projected average daily goods traffic internal zones	13 14 15
2.10	Existing and projected trip rate and projected passenger trips	18
2.11	Rail/Road share on convidence	21
2.12 2.13 3.1 3.2	Existing and Projected Projected traffic - NCR in the year 2001 Share of Delhi in projected traffic for NCR Utilisation of links - All alternatives (Scenario I)	
	Utilisation of links - All alternatives (Scenario II)	27
3.3	Speed at various volume to capacity ratios Comparison of savings in travel time and cost under different alternatives - Annual estimates	30 31
3.5 3.6 3.7	Cost estimates of IDP and Freeway network Evaluation of alternative network Daily fuel consumption cost of IDP and Freeway networks	32 32 33
3.8 3.9	Additional capacity in Rail system	36 38
3.10 4.1 4.2	mobile assets - Proposed rail network Projected total daily traffic (PCU) Cost estimate (Suggested network) Phasing of works	39 43 44

# LIST OF MAPS

Map No.		After	Page	No.
where we want where we've would				
1.1	Transport Network		4	
2.1	Desire Lines - Goods Traffic		10	
2.2	Desire Lines - Bus Passenger Traffic		14	
2.3	Desire Lines - Passenger Traffic		14	
3.1	Existing Road Network		25	
3.2	Projected Flows - IDP Road Network		27	
0.2	(Scenario I)			
3.3	Projected Flows - IDP Road Network		27	
3.3	(Scenario II)			
0.4	Freeway Network - Projected Flows		27	
3.4				
	(Scenario I)		27	
3.5	Freeway Network - Projected Flows		64 1	
	(Scenario II)	2	41	
4.1	Suggested Road Network		A	
4.2	Proposal for Rail Network		45	

# LIST OF FIGURES

1.1	Methodology for Regional Transportation	J
	Studies in NCR	0
2.1	Projected population of DUT and	8
•	Urban centres - 2001	27
3.1	Link utilisation - Alternative networks	21

# CHAPTER I INTRODUCTION

## 1.0 Background

The Interim Development Plan (IDP) for National Capital Region (NCR) prepared in 1986 highlighted the significance of the transportation sector as an important part of the overall development plan for the region. The Interim Plan also included several proposals for developing the regional rail and road network in response to the existing bottlenecks and future requirements in terms of passenger and goods flow. Development proposals in the transportation sector also emphasised the need for better connectivity and transport infrastructure between urban nodes (Delhi Metropolitan Area (DMA) and priority towns) in the context of need for reducing the present concentration of economic activities and consequential traffic generation in the Delhi Urban Area (DUA).

A critical evaluation of these proposals as against various other alternatives that could be conceptualised was not possible in absence of base line traffic and transportation studies covering NCR as a whole. This vital missing link in the IDP together with the need for evaluating the competing development proposals in the rail and road network in the context of alternative economic and demographic perspective of DUA vis-a-vis urban nodes in NCR prompted commissioning of a comprehensive study to Operations Research Group in association with Indian Institute of Technology, Kanpur in late February 1987.

This report is a summary of a more detailed technical volume. For detailed data or analysis the reader may refer the same.

# 1.1 Objectives of Study and Important Considerations

Keeping in view the background of the exercise as stated earlier the specific objectives of the transportation studies were:

- a) To elicit traffic characteristics on the regional transport system by rail and road.
- b) To assess the passengers and goods flow pattern to, from and within the region.
- c) To assess the problems and potential of the rail and road network in the region.

- d) To estimate the size and pattern of future movement under alternative policy scenarios.
- e) To test various alternative transport networks under different scenarios.
- f) To formulate a transport development plan using suitable economic evaluation criteria.

The major considerations underlying the current exercise are:

- a) Focus of the transport development plan is on the regional transport systems with due consideration of linkages of all urban zones with DUT and between them, and not on transport system of individual urban zone.
  - b) The projection of future flows and transportation development scenario is considered an integral part of the overall development scenario to be adopted for NCR.
  - c) Projections of travel demand take into account existing pattern as obtained from survey findings and synthesise it with future development scenario, in the context of overall spatial frame suggested in the interim development plan for National Capital Region.
  - d) Preparation of a medium term plan (year 2001) is an imperative in the context of high growth in the past of goods and passenger traffic and predominant share of Delhi in total traffic.

In addition to the above technical and policy considerations, the limitations particularly in terms of time (effectively 4 months upto stage of tentative proposals) may also be kept in mind.

# 1.2 Methodology

The methodology adopted in the conduct of this study has been directly related to the objectives mentioned earlier. The major steps in this exercise have been (Fig.1.1):

- a) Zoning of NCR taking into account the spatial frames as suggested in Interim Development Plan (IDP) as also the needs of the planning model.
- b) Generation of origin-destination matrices for passenger and goods movement by road and rail. Passenger movement was further classified as private and public transport.
- c) Analysis of generation and attraction characteristics with respect to population and economic base.
- d) Calibration of models to estimate generation and distribution characteristics of traffic movement.
- e) Development of two scenarios with regard to future population and economic base covering all internal zones of NCR.
- f) Projection of future passenger and goods flows by using the parameters of calibrated models, population and economic projection of internal zones, and assumed growth rate of traffic for external zones.
- g) Assigning projected flows to alternate road and rail networks. Detailed network assignment model is developed for the road system, after ascertaining the additional carrying capacity of passenger traffic (public transport) by rail.
- h) Evaluation of network alternatives and sensitivity analysis of the same to different policy scenarios.
- i) Investment implication of the proposed network alternative (rail and road), in terms of upgradation and new links

# 1.3 Study Area Characteristics and Features of NCR Plan

The National Capital Region extends over an area of 30,242 sq.km. in three states, namely Haryana, Rajasthan, Uttar Pradesh and Union Territory of Delhi. The total population in NCR was 192 lakhs of which about 91 lakhs or 48% was urban in 1981.

The population and other characteristic of each sub-region are as follows (Table 1.1):

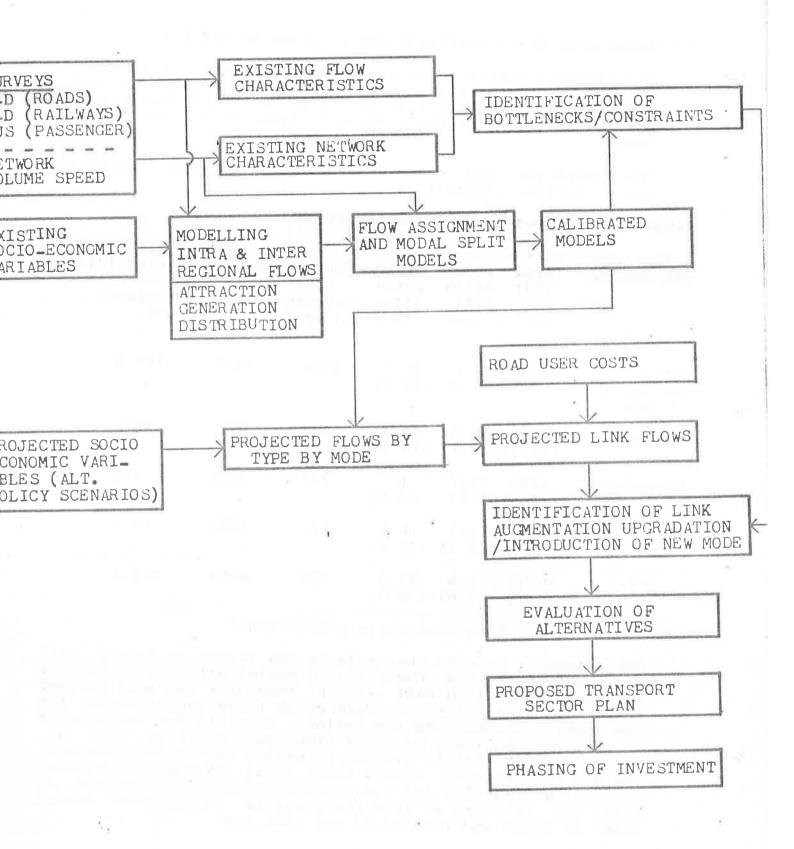
Table 1.1 : Study Area Characteristics

 Sub-Region	Area Popul-		Density R	egd. fac	tories 1983
	1981 ation (sq. 1981 kms) (lacs)	popul- ation ( (lacs)		No. E	Employment (000s)
Union Territory of Delhi	1483 62.2 (4.9)(32.4)	57.7 (71.2)	4194	4163	166.0
Haryana	1341 <sup>3</sup> 49.3 (44.4)(25.7)	12.1 (14.9)	368	2666	159.6
Rajasthan	4493 10.7 (14.8)(5.6)	1.7 (2.1)	238	279	8.1
Uttar Pradesh	10853 69.7 (35.9)(36.3)	19.5 (12.8)	. 642	1351	98.3
NCR	30242 191.9 (100.0)(100.0)	91.0 (100.0)	635	8459	432.0

Figures in () are % to respective column total

The transport network (Map 1.1) in the region is fairly well developed. It has basically a radial oriented system for both Road as well as Rail network. Regarding the road network there are nine major corridors which forms the backbone for the traffic movement in the region. Delhi is the focal point of the region with 5 national highways converging onto it. Rail network also is similar in nature as the road network. The NCR rail network covers three zonal railways (Northern, Western & Central) and 5 divisions. One common feature in both the networks is that the capacity utilisation around Delhi is heavy and reduces as one goes away.

Fig.1.1 : Methodology for Regional Transportation Studies for NCR



The strategy adopted in the NCR plan has emanated from a felt need to restrain the growth of Delhi, while keeping the projected regional growth as given. Accordingly it has been conceived that in order to achieve the above twin objectives it would be neessary to induce a faster rate of growth for identified nuclei, which have exhibited such characteristics in the past or can play such a role in future. Accordingly Meerut, Hapur, Bulandshahr-Khurja, Palwal, Alwar, Rewari-Bhiwadi-Dharuhera, Rohtak, and Panipat were identified as the potential growth centres within NCR. The transport development plan was therefore identified as a major input to achieve the overall strategy of a balanced Regional Development.

# 1.4 DATA BASE AND ZONING

The major surveys and data sources on the basis of which the transport plan alternatives were made are:

- a) Volume count by vehicle type covering all important links (NH and SH) on the NCR road network.
- b) Road-side interview of motorised vehicles on sample basis at all the cordon points (over 60) representing all major nodes (urban) in NCR.
- c) Road inventory survey on the basis of reconnaissance survey and compilation of similar information from Ministry of Surface Transport.
- d) Sample survey to obtain bus and rail passenger travel characteristics at 14 selected bus and rail terminals.
- e) Rail network inventory as obtained from the divisional office of the railways.
- f) Origin-destination analysis for goods movement by rail as obtained from the computer section of Northern Railway.
- g) Speed and Delay surveys of passenger vehicles on all important stretches of the road network.

In addition to the above surveys and data sources socioeconomic profiles of urban zones in NCR were prepared, from various sources including special reports dealing with the region.

(6)

3

5

3

.9

**53** 

Given the study area profile and significance of zoning as the first critical step to the suggested methodology, this aspect has been discussed in this chapter. Zoning of the study area within and beyond the region has been done in the context of the spatial frames suggested for the NCR plan, and requirements of the model. The zones are delineated so as to meet the major considerations in the suggested methodology as well as to keep the spatial concepts of the plan in the foreground.

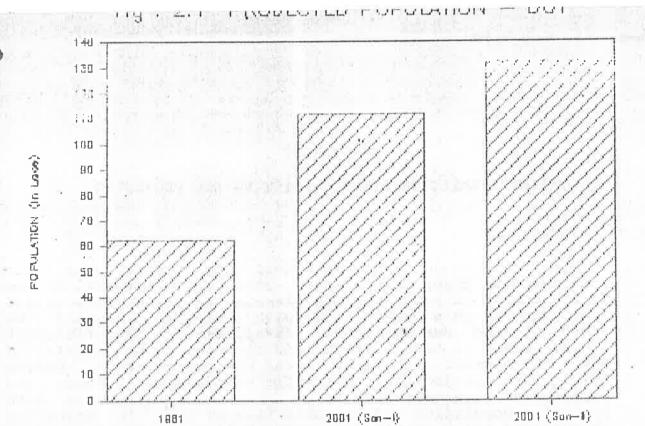
The zones as identified in the present study are not of the usual type found in most transportation studies but is based on a nodal concept. By nodal concept it is meant that each of the identified important towns is kept as a separate entity without incorporating any area into it other than the current urban/administrative limit. Zoning was also kept flexible, in that, while in the beginning the number of zones were 24, later it was felt necessary to increase the level of disaggregation and were thereby revised the number of zones to 28. The break up of the 28 zones are as follows:

- (i) Delhi Union Territory
- (ii) Delhi Metropolitan Area which are further subdivided into: Faridabad/Ballabgarh, Ghaziabad/Loni, Noida, Gurgaon and Bahadurgarh.
- (iii) Priority towns of Meerut, Hapur, Bulandshahr- Khurja, Palwal, Alwar, Rewari-Dharuhera-Bhiwadi, Rohtak and Panipat.
  - (iv) Other important towns in NCR of Sonepat and Modinagar
    - (v) Rest of NCR split into 4 divisions with centroids at Hapur, Sonepat, Sohana & Jhajjar.
  - (vi) External zones consisting of remaining portions of Haryana, Rajasthan and Uttar Pradesh (further divided into 3 sectors): Punjab, Chandigarh & Rest of India with 2 centroids at Bombay and Calcutta.

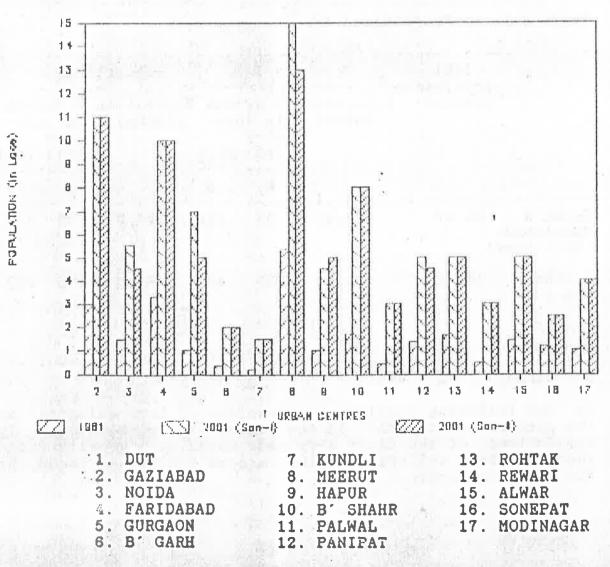
Details of zone codes and names are given in Table 1.2.

#### Table 1.2 : Zone Codes

- Delhi Union Territory (DUT) 1.
- Ghaziabad/Loni 2.
- 3. Noida
- Faridabad/Ballabhgarh
  Gurgaon
  Bahadurgarh 4.
- 5.
- 6.
- 7. Kundli
- 8. Meerut
- 9. Hapur/Rest of NCR
- Bulandshahr/Khurja 10. Palwal
  Panipat
  Rohtak
- 11.
- 12.
- 13.
- 14.
- 15.
- Rewari
  Alwar
  Sonepat/Rest of NCR 16.
- Modinagar 17.
- Sohana/Rest of NCR 18.
- 19. Jhajjar/Rest of NCR
- Rest of Haryana 20.
- 21. Rest of Rajasthan
- 22. Punjab
- 23. Chandigarh
- 24. Rest of India (Bombay side)
- Rest of UP (North) 25.
- 26. Rest of UP (East)
- 27.
- Rest of UP (South East)
  Rest of India (Calcutta side). 28.



PROJ. POPULATION OF URBAN CENTRES-2001



### CHAPTER II

### TRAFFIC CHARACTERISTICS - EXISTING AND PROJECTED

#### 2.0 Introduction

A clear understanding of the travel characteristics as also the factors governing such observed patterns is an absolute must in any transport planning exercise. This is all the more so when one views it with a need to forecast the travel demand due to induced development. The transport sector plan in this instance was expected to be dovetailed with the overall objectives of the National Capital Region Plan. The projection of traffic volumes, both goods and passengers have therefore to be necessarily integrated with projected population and economic base of NCR. Two scenarios as outlined below (Table 2.1, Fig. 2.1) were used to project the traffic. The first scenario is based on the strategy implicit in the Draft Regional Plan and the second is presented to understand the effect of the dispersal or self containment not being realised as envisaged.

Table 2.1 : Projections for the year 2001

	1981 populatio		Scenario I		Scenario II		
	(lakhs)	hs) Population			(lakhs)		
			L	S		L	S
Delhi & Ghaziabad (incl.Lon	0 00	123.0	38	115	143.0	75	230
5 other DMA & 8 Priority towns/ complexes	18.71	75.0	250	400	68.0	125	260

L = Large S = Small

In the following sections a comparison of the existing and the projected traffic in the region is elaborated. The projections of the flows were made based on a gravity model which had been calibrated using various functional forms for the friction factor.

# 2.1 Existing Traffic Volume

The road network as described earlier focuses on Delhi as the major centre in the region. In order to understand the traffic intensity on different road links covering all important centres in NCR, traffic count surveys were conducted at over 60 locations. Analysis of link volumes clearly show certain important corridors. Most of the corridors emanate from Delhi - important among them being the Delhi-Ghaziabad, followed by Delhi-Faridabad and Delhi-Gurgaon. Other important corridors on the Regional network are Ghaziabad-Meerut and Ghaziabad-Bulandshahr (Table 2.2).

Table 2.2 : Traffic movement on major corridors

Total pass. vehicle	Total buses	Total goods vehicle	Total volume
	4000	6705	30316
			(100.0)
9407	1483	415 (27.4)	14995 (100.0)
3708	753 (10.8)	2513 (36.0)	6974 (100.0)
3383 (40.7)	1207 (14.5)	3712 (45.8)	8302 (100.0)
5056 (64.0)	(6.0)	(30.0)	7901 (100.0)
28714 (67.2)	(6.1)	(26.7)	42751 (100.0)
(82.1)	(8.0)	(9.9)	20307 (100.0) 11245
(62.7)	(9.8)	(27.5)	(100.0) 6871
(60.8)	(11.5)	(27.7)	(100.0)
(67.8)	(8.5)	(23.7)	9019 (100.0)
B) 2021 (30.3)	613 (9.2)	4036 (60.5)	6670 (100.0)
	pass. vehicle 21585 (71.2) 9407 (62.7) 3708 (53.2) 3383 (40.7) 5056 (64.0) 28714 (67.2) 16677 (82.1) 7047 (62.7) 4176 (60.8) ahr6110 (67.8) B) 2021	pass. buses vehicle  21585	pass. buses goods vehicle  21585

It is observed that currently about 1.32 lac vehicles enter and leave Delhi of which the Delhi-Ghaziabad corridor, consisting of 4 links (Wazirabad link, ITO link, Old Yamuna link and Nizamuddin link) carry about 32.5% of the total traffic. The composition of vehicles entering and leaving Delhi are mostly passenger oriented (75%) which include both public and private passenger transport.

#### 2.2 Total goods movement

Analysis of the travel characteristics has been done mainly with a view to understand:

- (i) Modal share
- (ii) Share of Delhi
- (iii) Movement patterns and bypassable traffic

#### 2.2.1 Existing Characteristics

#### ROAD

The total volume of goods moved on the regional road network of NCR is about 1.92 lac tonnes (1.84 lac tonnes excluding through traffic). Share of Delhi bound traffic is about one-third but in terms of generated traffic it reduces to about 22% (Table 2.3). Share of the other urban centres in relation to the DUT are very small. Ghaziabad (19%) is the only other important centre of generation and attraction. Faridabad (8%) is next in order of importance. All other urban centres irrespective of population size attract or generate very limited traffic (Map 2.1).

Table 2.3: Total goods movement in NCR and DUT (excluding intra-urban)

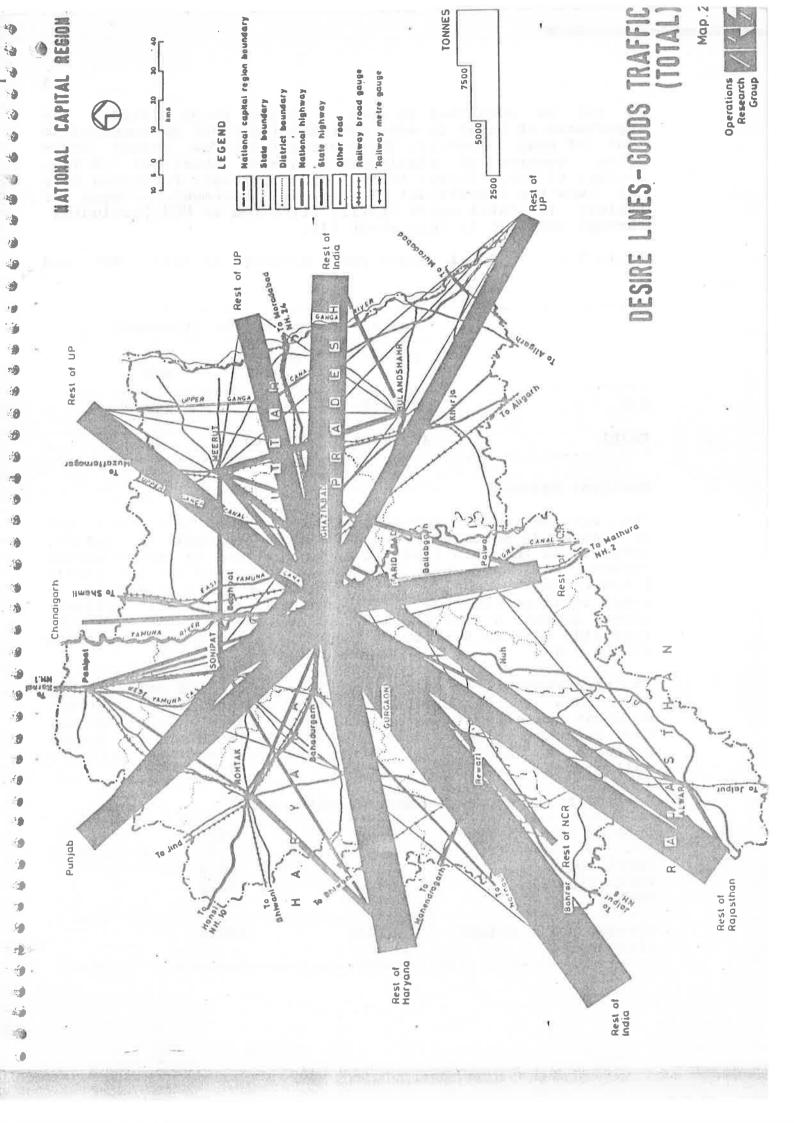
(daily in tonnes)

	Attracted	Generated	
NCR*	191816 (183728)	191816 (183728)	
DUT	59980	40577	
%	32.6	22.0	

\*Figures in bracket indicate estimate excluding through traffic.

#### RAIL

Estmates of total inward goods movement by rail are presented in Table 2.4. While it does not cover some of terminals of central and western railway, it is expected that the estimated total traffic is representative of all major traffic movements attracted to NCR.



It can be seen that in case of railway goods traffic the importance of Delhi is more overwhelming (60%) as compared to that of road. However, there are quite a few second order urban centres of significance namely Ghaziabad (9.9%), Panipat (7.9%), Meerut (6.5%). Interestingly Faridabad does not show any significant inward rail movement. Share of railway in total goods traffic attracted by NCR (excluding through traffic) is only about 14%.

Table 2.4 : Total inward goods movement by rail - NCR and Delhi

	Railway goods traffic (tonnage)					
	Annual	Average daily	% to NCR			
NCR	7878530	21585	100.0			
Delhi	4723160	12940	60.0			

#### Movement Pattern

The analysis of the movement pattern reveals that about 63% of the goods movement by road is inter-regional in nature. Subject to the data limitations as outlined in the technical volume, railways goods movement is observed to be mostly inter-regional. While about 33% of the goods movement by road is intra-regional, the corresponding railway estimate shows almost a negligible amount on this account. On the road side through traffic of goods movement is only about 4% (Table 2.5).

In intra-regional traffic movement by Road, DUT followed by DMA towns are the important centres and for inter-regional movement vicinity states of NCR account for a sizeable share. For railway movement the largest contributor to inward movement is Eastern Railway followed by Rest of Northern Railway.

Table 2.5 : Goods Movement Pattern in NCR

Type of flow	Road	Rail	
Intra-regional Inter-regional Through	32.4 63.4 4.2	0.4 99.6 N.A.	
Average daily volume (Tonnes)	191816	21585	

## Commodity Movement

Commodity composition of inward traffic by rail and road is presented in Table 2.6.

Table 2.6 : Modal distribution of inward commodity traffic

Commodity Group & Name	% Commodity	composition
	Road	Rail
Food grains	12.0	13.6
Vegetables & fruits	8.7	0.2
Manufactured food items	9.7	1.8
Industrial inputs	19.1	46.8
Manufactured houshold products	15.7	5.0
Building materials	20.4	18.6
Other industrial products	6.7	0.4
Petroleum products	1.0	4.0
Miscellaneous items	6.7	9.6
Total	100.0	100.0

The predominance of industrial raw materials are marked more for rail traffic and less for road. In case of building materials the share is nearly same. Foodgrains account for a sizeable portion in road and rail traffic and vegetables and fruits in case of road. There are however large variations in the type of flow from one group to another. While in building materials, other industrial products and miscellaneous, share of inter-regional traffic is less than half, in the case of foodgrains followed by manufactured food items, manufactured household products and industrial inputs and also vegetables and fruits it is mostly more than two-third.

## 2.3 Total Passenger Movement (Rail and Road)

#### Existing characteristics

Estimated total daily passenger movement (inter-urban/rural-urban) by all modes generated by all internal zones is estimated at 884000 (Table 2.7). Share of rail to the total traffic generated by the internal zones of NCR is 23.7% Restricted to public transport share of rail is estimated at about 32%, leaving the rest (4,42,000) to bus transport. Estimated total load on the regional road network system which includes apart from the above traffic, traffic generated by external zones as well as through traffic is 788000. For railway, share of the traffic generated by external zones and as well as through traffic passing through NCR railway has not been possible.

Unlike goods traffic share of external zones is much smaller (about 18% for bus passenger and 6% for vehicle passengers). Share of DUT in terms of total passenger movement generated by internal zones of NCR by all modes is 38%. Share of DUT is higher for the railway system (51%) compared to that of passenger traffic by road (about 34.5%). In contrast to the observation for goods traffic there are quite a few important urban zones (other than Delhi) in terms of traffic generation. Their contribution however to the total traffic individually is much smaller than that of Delhi, these towns are Ghaziabad, Meerut, Faridabad, Rohtak, Noida and Bulandshahr, all of them individually accounting for over 35000 daily passenger trips being generated by road (Table 2.7).

Table 2.7 : Generation of passenger traffic (daily) for NCR and important urban areas

Urban Zone/ NCR	Vehicle Passengers	Bus Pass.	Rail Pass.	Total	Rail Share(%)
DUT'	58794 (25.3)	178722 (39.3)	(50.9)	339516	32
Ghaziabad Noida	17465 9300	32298 31026	32856	82619 40326	40
Faridabad	16505	24675	6568	47748	14
Meerut Rohtak	17368 18200	34242 20845	420 5197	61030 44242	15 12
Bulandshahr	1.3460	23522	2644	39626	7
Total NCR (generated by internal zones	232000	442000	210000	884000	24
Total movement	ing	539100	N.A.		
external zones through traffic					

The trip generation rate (inter-urban) by public transport is observed to vary from 0.034 (DUT) to 0.142 (Noida). Such variations are both due to size and function of an urban zone. For example, the larger the population size and more diversified economic base as in case of Delhi the lower is the per capita trip rate. The opposite is the case for urban areas like Ghaziabad and Noida which has evident imbalance between resident population and job available locally.

8

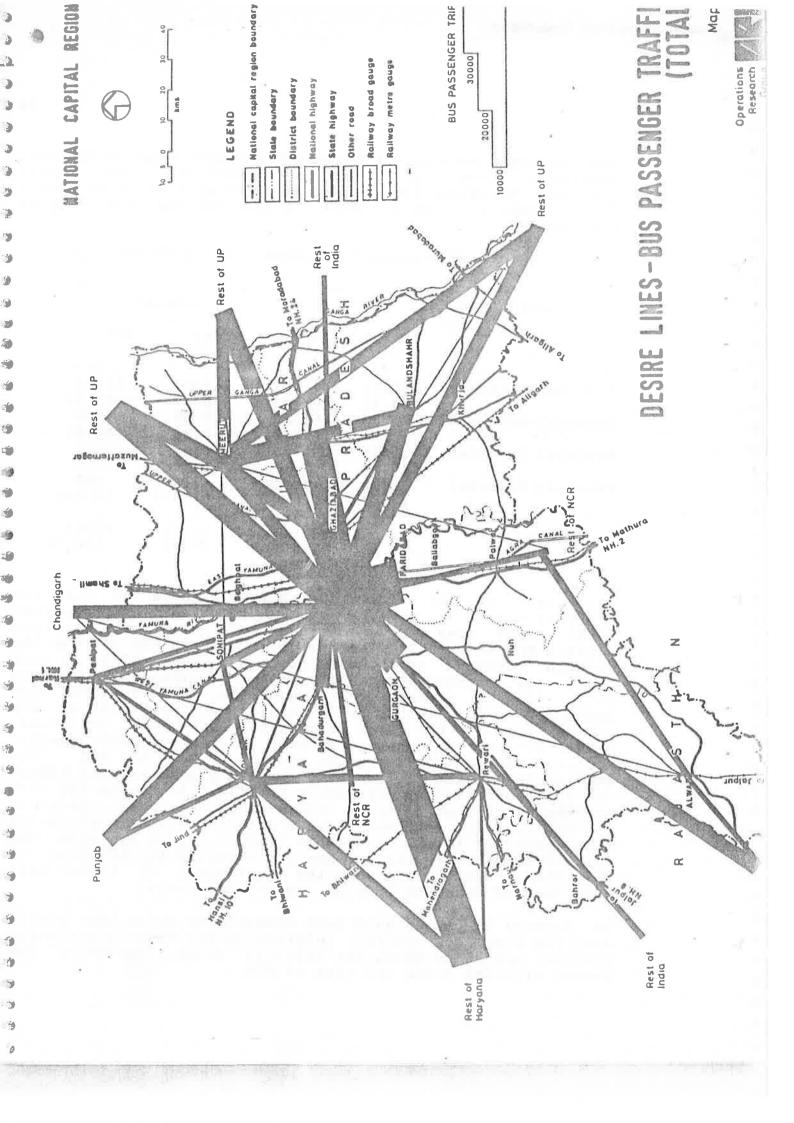
The movement pattern for passenger movement shows a distinct difference from that of the goods movement. The intraregional movements dominate in this category of trips (Table 2.8). Maps 2.2 and 2.3 show the flow for bus and vehicle passengers.

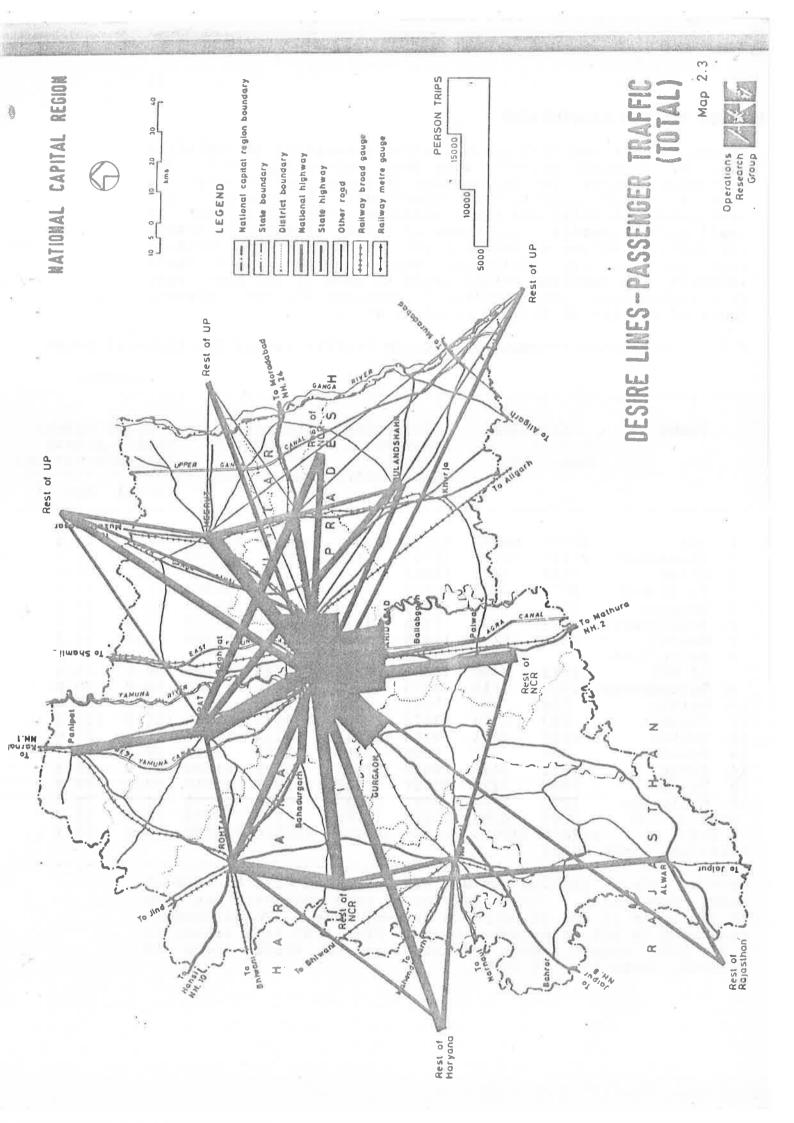
Table 2.8: Road passenger movement pattern (Generation)

Movement	Bus		Vehicle		
	Total NCR	DUT	Total NCR	DUT	
nternal-Internal	346933 (64.4)	143971 (69.6)	214168 (86.3)	53739 (85.5)	
Internal-External	95036 (17.6)	61188 (29.5)	18066 (7.2)	8740 (13.9)	
xternal-Internal	95062 (17.7)		15580 (6.499)	*	
xternal-External	2055 (0.4)	1855 (0.9)	313 (0.001)	366 (0.06)	
Total	539085 (100.0)	207014 (100.0)	248127 (100.0)	628 <b>4</b> 5 (100.0)	

The share of intra-regional traffic is above 65% for bus passengers and is more pronounced for vehicle passengers (85%). Not many differences are observed in this pattern between NCR and Delhi. The important observation is that the through movement (both ends of trip outside NCR) is very small and consequently the proportion of bypassable traffic will also be comparatively lesser than that observed for goods movement. In bus passenger through traffic is as as 8% for DUT but quite large (above 60%) for Ghaziabad, Hapur, Panipat, Sonepat & Modinagar. The bypassable traffic for vehicle passengers varies from about 20% to 80%. The smaller the centre is for attaction and generation the higher is the proportion of bypassable traffic, if the centre lies on the main trunk routes. Location of the towns vis-a-vis the routes being followed is also a factor which contributes significantly to the bypassable traffic. This explains the large bypassable traffic, when one observes the location of Ghaziabad, which lies at the confluence of three main corridors of movement from UP and Eastern India.

In general it can be said that compared to goods and partly also bus passenger traffic, interaction for vehicle passenger traffic are more among the internal zones, including DMA towns, priority towns and rest of NCR.





### GOODS TRAFFIC PROJECTIONS

It can be observed that goods traffic generation is explained more by economic activity base than population size. The conceptual model for forecasting of goods traffic uses the four following contributory components of growth: (a) employment in large and basic industry, (b) employment in small scale industry, (c) Index of volume of wholsale trade, (d) Index of volume of retail trade. Based on the projections made for all the individual towns for large and small industry and assuming retail trade to grow at the same rate as population, goods traffic projections for the internal zones of NCR are as follows (Table 2.9).

2.9 : Projected average daily goods traffic (road) for internal zones

(tonnes)

Towns	Existing			Projected Scenario-I		Projected Scenario-II		e annual growth
	Gen.	Attr.		Attr.	Gen.	Attr.	rate(g	eneration 
				Moor.			Sen.I	Scn.II
1. DUA	40577	59980	82980	124458	124469	186686	7.5	14.8
2. Ghaziabad	23415	25995	59357	72136	88035	108203	11.0	19.7
3. Noida	2165	4606	10283	23230	10283	23230	26.8	26.9
4. Faridabad	9676	4738	32898	16968	32898	16968	17.1	17.1
5. Gurgaon	2845	2253	19459	15320	13621	10723	41.7	27.1
6. Bahadurgarh		1252	7465	5713	7465	5713	23.8	23.8
7. Meerut	2210	5705	11558	28810	11558	28810	30.2	30.2
8. Hapur/Rest		041						
of NCR	11471	3360	45061	25288	34246	19218	20.9	14.2
9. Bulandshahr	1705	1710	9070	14405	9070	14405	30.9	30.9
0. Palwal	824	691	5042	4215	5042	4215	36.6	36.6
1. Panipat	880	5724	14673	22906	14673	22906	112.0	112.0
2. Rohtak	2169	4004	9154	17017	9154	17017	23.0	23.0
3. Rewari	829	648	5020	3467	5020	3467	36.1	36.1
4. Alwar	1681	4438	10590	27072	6010	21523	37.9	18.4
5. Sonepat	7038	4426	28997	16917	28997	16916	22.3	22.3
6. Modinagar	1998	1834	8032	11397	8032	11395	21.6	21.6
Rest of NCR	7346	4258	25627	19769	20737	17443		13.0
	118550	135622	385266	449088	429310	528838	16.1	18.7
internal zones	only)							

Growth rate of traffic for DUT and Ghaziabad will be lowest under Scenario I. Very high growth rate projected for some of the towns is due to very low present base. Total traffic generated in NCR is expected to grow from 1.92 lakh tonnes to 6.50 lakh tonnes under scenario 1 out of which share of internal zones is 4.29 lakhs.

For projection of total traffic generation for external zones average annual growth rate between 16-26% (higher rate for rest of Haryana and UP) has been assumed.

As regards the future movement pattern the share of intraregional traffic remains small (36%) and the bulk of traffic is inter-regional in nature. The share of Delhi which is about 25% of the existing traffic reduces to about 15% in scenario I and 20% in Scenario II. In absolute terms, however, for DUT there would be an increase of 62000 tonnes from scenario I to scenario II in generated traffic and in attracted traffic.

It is also observed that the flows of the priority towns with each other and DMA towns show an increase as compared to the existing situation. Major flows which are expected to occur are those with outside the Region. However, Ghaziabad, Faridabad and Panipat show an increasing trend in the share to these towns.

# 2.5 Passenger Trip Projections

The important assumptions which include both behavioural and operational aspects of future travel demand pattern underlying the forecast of future passenger traffic are:

- a) Trip rate (inter-urban) by each mode is a function of the size of the population of an urban zone, its socio economic base and also locational factors particularly the relation between the resident workers and jobs. These factors are, in a sense, reflected in what may be called degree of self-containment of an urban zone. The higher the degree of self-containment the less the per capita trip rate (inter urban) as in the case of DUT. Other factors like per capita income and behavioural parameters, though important in some cases, have not been explicitly taken into account.
- b) The trip rate for railway is both a function of the variables noted above and also the availability of the facility itself. This explains a trip rate by railway as high as .067 and 0.085 for Ghaziabad and Palwal compared to only about 0.011 other for centres like Bulandshahar.

Given the above two underlying assumptions the projection of per capita trip rate and projected volume of trip generations has been arrived at in the following manner(Table 2.10):

- a) Trip generation by vehicular passenger is considered to a large extent independent of movement by public transport (railways and bus) within same urban zone. 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).
- b) For trip rate by public transport the range is assumed to vary between 0.034 (Delhi) and .121 (Ghaziabad).
- c) The share of public transport by bus and rail will depend on a number of factors, of which the most important one is the availability of facility itself and the additional capacity created on the system (to the potential users of the mode). See section 3.5 for further details.
- d) 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 under two scenarios.

Total vehicle passenger and public transport traffic for as a whole are projected to increase to 7.84 lakhs and 19 from 2.48 lakhs and 7.5 lakhs respectively scenario-I. In line with the assumptions made with regard to both projected population, economic base and trip rate the lowest growth rate is observed for DUA and Ghaziabad, (though the projected absolute volume of increase for DUA is much larger compared to other zones). The higher growth rate is high observed for towns with expected industrialisation and trading activity (for example, Alwar, Panipat, Gurgaon). Given the above projections of total. traffic generation and attraction for both internal and external zone, future O-D matrix has been obtaind by using calibrated model. The underlying assumption projection of O-D flows has been that the parameters X and B for which model calibration was done will remain unchanged in future.

A further exercise undertaken was to split up the public transport matrix into two components namely road based public transport and rail based public transport.

Existing and Projected trip rate and projeted passenger trips Table 2.10

Towns	Exis	ting tr	ip rate		Projected tr	ip rate		No. of	passen	ger tr	г <u>р</u>
	Vehicle	Bus	aila	 ubl	cenario	Scenari	II o	enari	I o	ar I	io II
	rs	口 <b>即</b> 公 の	E Pa	Trans- port	hi.	60 1	7 7 8	the character of the ch	Public trans- port	ehi. ass- ngers	Fubli trans port
Ghaziabad Ghaziabad Noida Faridabad Gurgaon Bahadurgarh Hapur Bulandshahr Palwal Panipat Rohtak	0.035 0.035 0.035 0.032 0.022 0.025 0.025 0.054 0.006	0.022 0.046 0.046 0.046 0.048 0.045 0.045 0.022 0.022 0.029	0.013 0.0161 N.A. 0.012 0.048 0.012 0.023 0.023 0.023 0.023	0.034 0.121 0.058 0.057 0.105 0.105 0.105 0.097	0.007 0.030 0.023 0.0754 0.036 0.054 0.063 0.145 0.040 0.119 0.050 0.135 0.050 0.135 0.025 0.048 0.025 0.048	0.011 0.046 0.039 0.039 0.053 0.057 0.025 0.025 0.033	0.040 0.135 0.135 0.119 0.119 0.118 0.048 0.098 0.098	3406 3 5300 5856 5812 16500 1 8095 16500 1 7643 17500 15446	39671 1 82500 85224 64131 01554 23872 23872 45700 81000 69289 14441 64000 41000	50601 27714 39465 25914 10505 47025 28486 10743 7525 21260 16639 15342	5533635 110589 61047 67906 55574 23911 1439 6033 6033 5647

#### Rail-Road Share

One of the important inputs to the transport sector plan is an estimate of rail and road based public transport trips. The allocation of the projected public transport trips to the various modes is based on an explicit recognition that the railway system is a more efficient carrier of passengers especially from the point of view of carrying costs and energy use. As a part of the procedure certain fundamental hypothesis/assumptions have been made in order to arrive at the final shares of rail and road. These are as follows:

- i) As a rider to the above mentioned statement on a more efficient railway system, it should be noted that the cost effectiveness of the railway system is evidently true, where the capacity augmentation follows existing corridors. However, for new corridors/alignments, demand and capacity utilisation thereon would govern such cost effectiveness.
- ii) Cost effectiveness as mentioned above is from a societal point of view, but considering the behavioural aspects of an individual, these considerations need not hold true.
- iii) The existing share or quantum of trips being undertaken by road is expected to remain unchanged. No shift from private to public transport is also envisaged, however, this aspect has been somewhat considered while projecting the future trip rates.
  - iv) The maximum possible capacity augmentation on the existing rail system has been considered both through marginal and major measures.

The basis for working out the modal shares is a corridor. It was observed that the future movement pattern would also follow the existing corridos, which basically radiate from Delhi. Hence corridors between the following places were delineated:

- (i) Delhi-Faridabad-Palwal
- (ii) Delhi-Gurgaon-Rewari-Alwar
- (iii) Delhi-Bahadurgarh-Rohtak
  - (iv) Delhi-Sonepat-Panipat
    - (v) a) Delhi-Ghaziabad-Bulandshahr
      - b) Delhi-Ghaziabad-Meerut

In order to estimate the traffic on any given corridor, the process adopted was to sum up all the origin and destinations both of which lie on it. For example, the Delhi-Gurgaon corridor would consist of trips between Delhi-Gurgaon, Delhi-Rewari and Delhi-Alwar. Similarly for each of the corridors the individual O-D pairs were delineated.

On the basis of the hypothesis outlined earlier the procedure to arrive at the modal share is outlined in the following steps:

- i) Estimate the travel demand under both scenarios for each of the corridors. In addition the new corridor suggested in the IDP network connecting Palwal and Rohtak via Rewari was also included.
- ii) Estimate the additional capacity which can be catered to by the railway system.
- iii) Estimate the utilisable component for both scenario given the settlement pattern and behavioura characteristics of a trip maker.
  - iv) Allocate the demand for public transport on each corridor to the railway system.
    - v) For each corridor, further disaggregate the projecte railway share to each of its constituted 0-D pairs.

In line with the above procedure the projected share railway taffic in the corridors would be about 50% compared to the existing 39% (Table 2.11). However, it i observed that there are wide variations in this share amongs the different corridors. This is due to potential expansion possibility for the railway system. On two corridors Delhi Panipat and Delhi-Rohtak only marginal improvements as possible, because of the heavily built up areas around the in Delhi. Amongst all corridors, significant increase in the rail share for Delhi-Alwar corridor is projected. This has been so mainly due to existing low base of public transpo trips compared to a high projected flow. The augmentati possibilities of the rail sector in this corridor is al high. However, these projections are under the assumpti that the envisaged rail facilities in this corridor a completed early enough to permit a higher share of railway public transport.

As the passenger demand estimation on the different corridor has been made by considering the urban nodes ignoring the rest of NCR traffic, the total passenger traffic by raily will be higher than that shown in Table 2.11, but the percentage share of railway in most of NCR is likely to be lower

# Projected traffic flows (road)

The total traffic projected to move by bus and passent vehicles under scenario I are 14.69 lac trips, and 5.04 lac trips. These estimates exclude the share of the railw

Table 2.11 : Rail Road Share on Corridors - Existing and Projected

		Existing		hare	Projec	ected Scenar	ario I	Project	ted Scenar	ario II	
		Rail	Road	to total (%)	Rail	Road	Rail are(%)	Rail	Road	Rail share(%)	
1							1				į.
	Delhi-Ghaizabad	54000	63585	46	92300	65528	59	124000	80865	61	
1	Bulandshahr	3100	19245	14	27900	20553	52	38118	16821	69	
က	Ghaziabad-	1		1	)	)		1			
	Modinagar	0066	563		040	65		350	793		
44	Modinagar-Meerut	8250	23654	26	23750	24785	49	50050	25949	99	
Ω	Delhi-Faridabad	14000	724		605	87		930	858		
9	Faridabad-Palwal	14000	90		315	63		730	287		
2	Delhi-Gurgaon	6500	0.1		450	48		009	78		
00	Gurgaon-Rewari	4200	95		100	93		205	8		
о О	-1	1250	19		875	33		675	16		
10.	Delhi-Bahadurgarh	7610	90		381	810		381	927	9	
11.	Bahadurgarh-Rohtak	3500	69		970	84		7.0	30		
12.	Delhi-Sonepat	16800	20		730	56		980	001		
13	Sonepat-Panipat	3500	46		00	10		50	742		
	×	146610	85	0	261	130		687	888		

representative to corridor definition totals are not to double counting. Due

9

9

ŋ

9

19

13

14.71 lac trips, and 5.92 lac trips respectively (Table 2.12). It should be noted that scenario I and II are not so different in terms of total traffic generation but more in terms of relative share of DUT (and also Ghaziabad).

Table 2.12: Projected traffic - NCR in the year 2001

	Exi	sting	Scen	ario I	Scenar	io II
	Internal internal		Interna Interna	1- Total	Interna Interna	l- Total
Bus Passengers	346933 (64)	539085	788295 (54)	1469488	774627 (53)	1471375
Vehicle Passengers	214168 (86)	248127	376739 (75)	503665	453926 (77)	592804

Figures in brackets are % to total

It can be seen that the existing movement pattern shows a distinct concentration on Delhi with about one-third of the trips, currently being generated and attracted by it. However under scenario I, which is an adoption of the IDP strategy this share is reduced to about 19% (Table 2.13). One interesting observation which is significant is that even though the share reduces, in absolute terms there would be an increase in the generated and attracted traffic of Delhi.

Table 2.13 : Share of Delhi in Projected Traffic for NCR\*

	Exis	ting	Scena	rio-I	Scenar	io-II
Mode	Gener- ation % Delhi	Attra- ction % Delhi	ation	Attra- ction % Delhi	Gener- ation % Delhi	Attra- ction % Delhi
Bus Passenger vehicle	32.2	32.6 26.1	18.5	18.4 18.8	26.4 25.4	25.9 26.3

<sup>\*</sup> Including traffic generated by external zones and through traffic

Under scenario II also it can be observed that share reduces except in the case of vehicle car passengers. The reduction however is not as significant as in Scenario I. This brings out an important conclusion namely that the thrust for achieving decongestion in the NCR would be in achieving the development scenario implicit in DRP strategy for Delhi and Ghaziabad.

## O-D Flows - Passenger Vehicle

The important change which is predicted to take place is the gain in movement to and from DMA towns, the exception being Noida which continues to have a limited interaction (only with Delhi). Among the priority towns, interaction with Meerut, Gurgaon, Panipat and Alwar gain significantly so also Rest of NCR in UP with Hapur as centroid. The other important change in the redistribution of flows is the reduced importance of Delhi based flows under Scenario I.

Under scenario II, Delhi and Ghaziabad account for significantly higher traffic (about 76,000 for passenger vehicle). By way of assumption implicit in development scenario II, Alwar, Gurgaon, Sonepat generate much less traffic.

#### O-D Flows - Bus

Currently the bus passengers originating from Delhi terminating at Delhi shows that about one-third of the total trips made in or through NCR have one end of their trip at The forecast share of this traffic is estimated at Delhi. 18% in scenario I and 25% in scenario II. The absolute about number of Delhi based trips however increase by about 1 lac under scenario I and about 2 lacs under scenario II after into account the impact of rail system improvements. taking The intra regional share of public transport is projected at 54% under both scenarios but less compared to the present due to larger railway share in intra regional public transport. Major movements follow similar pattern as that of vehicle passenger but the proportion of larger distance trips is more. A large number of flows especially between the priority towns and the DMA towns become significant under both scenarios.

#### CHAPTER III

#### ALTERNATIVE NETWORKS

#### 3.0 Introduction

Rail and road network, the key to the regional transport system, has been developed and evaluated on various considerations. The important ones are:

- (a) Projected traffic volume and pattern for both goods and passenger movement for the planning horizon upto year 2001. While no quantitative projections have been made beyond years 2001, qualitatively such requirements have been considered in evaluating alternative network.
- (b) Identification of major origin and destination flows and consequential traffic corridors which need more serious attention from the point of view of efficient movement of goods and passenger traffic.
- (c) Sensitivity of traffic movements along these corridors to alternative development scenarios (population and economic growth for NCR). In particular relative share of traffic originating from and terminating at DUT was considered.
- (d) Relative role of rail and road system particularly in projected passenger traffic both for NCR as a whole and more importantly for important traffic corridors where rail system can provide competing and/or complimentary alternatives.
- (e) Due consideration to be given to traffic (particularly inter-regional) which can bypass the already congested confluence of rail and road radials to and from DUA.
- (f) Economic benefits derived from the alternative network particularly by way of savings of travel time in relation to the total capital cost of each alternative.

Other considerations in evaluating different alternatives like investment lags, other construction bottlenecks like acquisition of land, financial (for example, cost recovery) and management constraints, though quite relevant for final selection of an alternative, could not be considered as a part of this exercise.

D

7

3

5

10

The alternative network was generated primarily as an iterative exercise, following a sequence of steps starting from projected flows under two scenarios through rail-road share, network loadings and finally to selected evaluation indicators in terms of utilisation level and flexibility to respond to the future requirements.

Naturally in a system of alternative network like this the null alternative should be the one which is same as nothing (i.e. existing network without any improvement) (Map The other alternatives considered are by way of improvement over this situation. The network alternatives in IDP were considered more appropriate proposed reflecting an improved situation with reference to terminal year scenario of year 2001. Against IDP alternative various alternatives particularly in road sector considered and evaluated in terms of link loadings and other indicators. The following section compares in further detail IDP alternative and other alternatives considered.

#### 3.1 IDP Network - Road System

The interim development plan proposals for the Road Network is as follows, (i) Development of stretches of NH-1 (Delhi-Panipat), NH-2 (Delhi-Palwal), NH-10 (Delhi-Rohtak), NH-8 (Delhi-Gurgaon), NH-24 (Delhi-Hapur) and state highway between Ghaziabad-Meerut to the standard of a motorway (M-1). (ii) Development of an inner and outer grid system of roads of a motorway standard (M-2) with certain common stretches. The inner grid was to the follow the alignment of Sonepat-Baghpat-Meerut-Hapur-Bulandshahr-Sikandrabad-Faridabad-Gurgaon-Jhajjar-Rohtak-Gohaná-Sonepat. The outer grid would connect Panipat-Muzzaffarnagar-Meerut-Hapur-Bulandshahr-Khurja-Palwal-Rewari-Jhajjar-Rohtak-Gohana-Panipat.

#### 3.2 Freeway Network Alternatives

projected O-D flows alongwith the traffic assignment on the IDP network provided the necessary inputs required for further improvements on this network. The first alternative network which has been proposed was included in the Draft It essentially differs from that Regional Plan for NCR. network its proposal to in freeways/expressways on new alignments to serve the needs of the Delhi-Ghaziabad-Meerut, Delhi-Sonepat-Panipat, Delhi-Gurgaon-Rewari and Faridabad-Noida-Ghaziabad corridors. continues to have the inner ring as in the IDP, with exception of the link Faridabad-Sikandrabad. In the outer Tring Panipat-Muzaffarnagar link was excluded. Upgradation of Khurja-Palwal link to M-2 standard and the M-1 proposals were also excluded.

The implications of this network, its dependence on a road based system alongwith the marginal improvement proposals on the Railway system were discussed at a subsequent study group meeting. The additional passengers which could be carried by the marginal improvements on the railway system was estimted at about 1 lac person trips (inter-urban). It was felt that the potential of the railway system and its intrinsic advantages in terms of energy efficiency were not exploited fully in this alternative, especially along the existing corridors with resulting need for an expanded road network and higher capital cost (Rs.560 crores approximately) for the road sector.

In order therefore to evolve a more appropriate second alternative in line with the suggestions received, extensive appraisal of the modernisation and capacity augmentation potential of the railway system was undertaken. However, this was limited to passenger traffic as the role of railway in goods traffic (excluding through traffic) was insignificant in NCR. Details of the results of this exercise (section 3.5) revealed that an additional 3 lakh passengers in addition to the marginal inter urban railway system could be moved by the improvements improvements suggested. This naturally resulted in reduced share of road for passenger traffic. Following this the whole exercise starting from modal split till assignment reworked resulting in the following network which in the subsequent sections has been termed as the Freeway Network. The changes pertaining to the road system between this network and the network in the DRP are:

- a) Delhi-Sonepat freeway link excluded;
- b) Delhi-Gurgaon-Behror freeway excluded;
- c) Six laning of Delhi-Gurgaon existing road proposed.

As this alternative of freeway network is considered as more efficient compared to DRP alternative, comparisons of various parameters are made only between the existing, IDP and the freeway network.

# 3.3 Comparison of Road Network Alternatives

A comparison of the utilisation pattern of the different networks (Tables 3.1 & 3.2 and Fig.3.1) as well as observations on the traffic distribution and flows only on important roads in the NCR are described in this sectons. Link loading for IDP and freeway network scenarios are given in Maps 3.2 to 3.5.

Table 3.1 : Utilisation of links - All Alternatives (Scenario I)

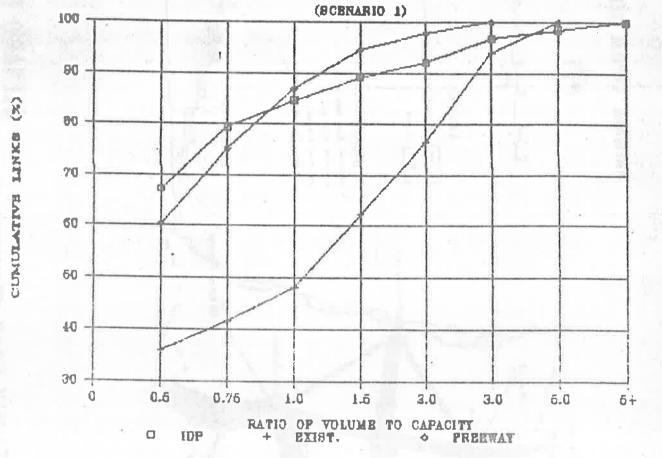
Volume to	Existing	g Networl	IDP	Network	Freeway	Network
capacity	No.	%		, %	No.	%
0.01-0.50	56	35.9	14	9 67.1	145	60.4
0.51-0.75	9	5.8	2	8 12.6	35	14.6
0.76-1.00	10	6.4	1	1 4.9	29	12.1
1.01-1.50	22	14.1	1	0 4.5	18	7.5
1.51-2.00	21	13.5		7 3.2	8	3.3
2.01-3.00	29	18.5	1	9 4.1	5	2.1
3.01-5.00	9	5.8		5 2.2	0	0
Above 5.00	0	0		3 1.4	0	0
Total	156	100.0	22	22 100.0	240	100.0

Table 3.2 : Utilisation of links - All Alternatives (Scenario II)

Volume to	Existing	Network	IDP Ne	twork	Freeway	Network
capacity ratio	Na.	%.	No.	%	No.	%
0.01-0.50	60	38.5	146	65.8	151	62.9
0.51-0.75	5	3.2	24	10.8	27	11.2
0.76-1.00	10	6.4	14	6.3	23	9.6
1.01-1.50	17	10.9	13	5.9	21	8.8
1.51-2.00	26	16.6	8	3.6	12	5.0
2.01-3.00	25	16.0	12	5.4	6	2.5
3.01-5.00	12	7.7	5	2.2	0	0
Above 5.00	1	0.7	0	0	0	0
Total	156	100.0	222	100.0	240	100.0

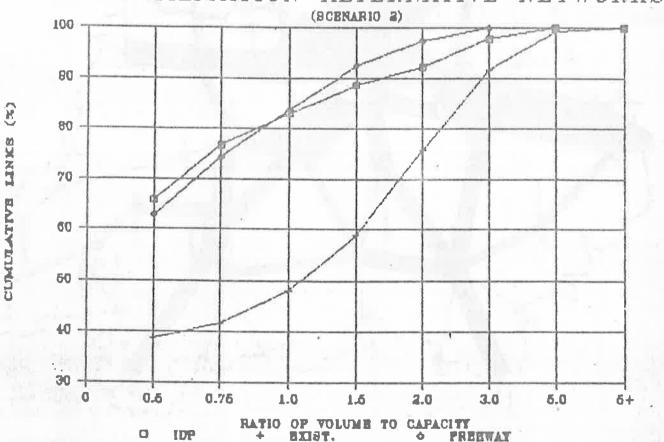
Fig. 3.1

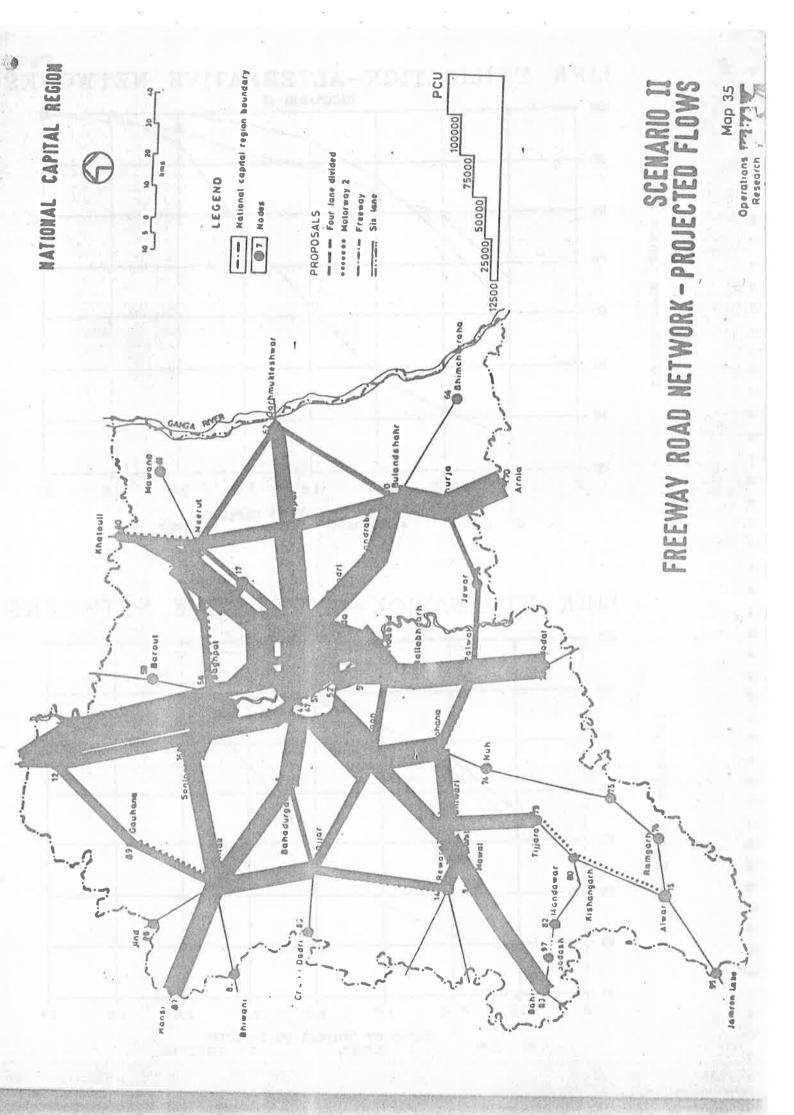




-3

# LINK UTILISATION-ALTERNATIVE NETWORKS





- (a) In general it can be said that IDP road network represents a much superior network compared to the nulal alternative (i.e. existing network) in terms of utilisation indicators (over utilised links reduced from 52% to 15%) and savings in travel time.
- (b) While the inner ring road of IDP network is justified iterms of bypassable traffic and providing links amon priority towns but this is not so for outer ring roa (Panipat-Muzaffarnagar-Meerut) at least in the contex of the traffic generated within NCR.
- (c) Upgradation of Khurja-Palwal link also does not appea justified in terms of link loading.
- (d) The more important limitation of IDP network is highl; overutilised Delhi-Ghaziabad section (volume capacity ratio 1.0 and 1.5 for scenario I and II respectively which is the most important corridor in NCR and also saturated capacity for Delhi-Gurgaon, and Delhi-Faridabad corridor. IDP network will fall far short or requirements for free travel condition beyond 2001.
- (e) Conversion of existing National and State Highways to Mialso poses several constraints in terms of continuous built up area, established rights in ROW and more importantly very large number of junctions particularly (a) Delhi-Ghaziabad-Meerut, (b) Delhi-Sonepat-Panipat (c) Delhi-Rewari-Behror.
- (f) As a corrollary, introduction of freeway network reduces the load on the congested corridors (existing and future) sizeably. For example there will be surplus capacity (in the year 2001) of more than 20% to 30% under scenario I in three important congested traffic corridors (as mentioned under 'd'). Even in scenario I the volume to capacity ratios would not exceed 1.
- (g) The introduction of new freeway links namely Faridabad-Noida-Ghaizabad, will divert good amount of traffic (55000 PCU under scenario I) from DUT. This freeway together with 2 other freeways under parallel/newalignments will lead to sizeable savings in travel time and increased convenience of free and faster travel, the two key considerations in the congested regional road system. A possible negative impact of this freeway or ribbon development is not anticipated as this road is planned with full access control with only one existentry at Noida.

(h) One important point under freeway network is possible underutilisation of existing national highway. However, local traffic should be added to the link flows shown in table to arrive at more objective evaluation.

#### 3.4 Road Network Evaluation

Economic evaluation of alternative road network uses a core model which enable computation of benefits in terms of the savings in travel time and cost considering all the links in the network. Data used for computing the speed at different volume capacity ratio for different types of roads is given in Table 3.3. The data are based on the road user cost study. For costing savings in travel time following assumptions have been made:

Occupancy for car : 2.7

Savings/hr of travel time for car passenger : Rs.10/-

Occupancy for bus : 50

Saving of travel time for bus passenger : Rs.5/-

For truck, a consolidated figure of Rs.30/hr taking into account average volume of cargo has been assumed.

#### 3.4.1 Benefits from network alternatives

The evaluation has been made by comparing existing, IDP and freeway network alternatives under scenario I. In order to test the senstivity of the freeway network to scenario I, additional analysis to evaluate this alternative has also been undertaken. The total benefits have been measured, as a first approximation, only in terms of travel time.

Table 3.4 compares the benefits of each alternative with respect to the null alternative (existing network - projected flows).

The travel time cost is minimum for the freeway alternative for scenario I projections. Compared to IDP alternative, freeway alternative shows an additional savings of Rs.61 crores. However, IDP alternative as such compared to null alternative shows substantial savings (Rs.122 crores in scenario I) which is even more in the freeway alternative to (Rs.183 crores for scenario I). Adaptation of freeway alternative to scenario-II is also evident as it shows even marginally higher benefit than IDP alternative (about Rs.60 crores) i.e. this network will be justified even if development scenario I is not realised and moves to some extent towards higher rate of growth of Delhi.

Speed at Various Volume to Capacity Ratios Table 3.3

										-	1				
	Dag	1 0	to 0.5	0.51 Car	to Bug	0.75 Truck	0.76 Car 1	to 3us	1.0 Truck	1.01 Car	to bus	to 1.5 bus Truck	More Car B	tha	n 1.51 Truck
	1	- 1		1	-	1	1			-	1 1 1				
פומין פון פון	35	33	31	28	26	26	25	24	23	21	20	20	18	18	18
TIME TO THE COLUMN ( LT.)	15	6.4	49	48	45	45	44	40	40	38	35	34	30	28	26
Intermediate (11)	א ג	80	1 10	55	48	47.	51	45	43	44	39	38	32	30	30
Double Lane (DL)	2 5	2 2	) (C	09	59	50	54	53	48	48	47	45	35	34	32
4 Lane Div(4LD)	- 0	- 14	) ע ט ע	000	99	20	61	59	56	54	52	52	39	38	37
Motorway 1 (M1)	2 00	0 7	2 4	909	200	50	54	53	48	48	47	45	35	34	32
Prince Control	100	5 0	) LC	8 6	7.0	67	77	63	63	68	56	56	20	41	40
	67	2 6	37	57	47	က	51	42	32	45	37	- 30	33	27	21
Special (S1)	71	67	26	09	29	50	54	53	48	48	47	.45	35	34	32

Table 3.4 : Comparison of savings in travel time and cost under different alternatives-Annual Estimates

1.	Total travel	time*	F2		F3-F2	F4-F2	F5-F4	
	a) Car b) Bus c) Truck Total		3356 759 2297 6412	•	-477 -183 -491 -115	-1158 -248 -263 -1169	354 -4 212 562	**
2.	Total travel a) Car b) Bus c) Truck Total	cost**	15135 31538 11484 58157		-2151 -7636 -2457 -12244	-5230 -10292 -2810 -18332	1605 -238 1059 2426	

\* 6 in 10 minutes \*\* in Rs. lacs

F2 - Existing network - Projected flows (scenario I)

F3 - IDP network - Projected flows (scenario I)

F4 - Freeway network - Projected flows (scenario I)

F5 - Freeway network - Projected flows (scenario II)

#### 3.4.2 Cost of Alternative Networks

The total cost of developing the IDP network is estimated at Rs.323.9 crores and for freeway network is Rs.480.1 crores(Table 3.5). The freeway network is more expensive mainly due to the reason that the freeways envisaged will follow a new alignment, whereas the motorways corresponding to these in the IDP network used under scenario II does not change the costs would also remain unchanged.

#### 3.4.3 Evaluation of Alternative Networks

Table 3.6 gives the benefit-cost ratio for the different alternatives.

Table 3.5 : Cost estimates of IDP and Freeway Network

(Rs. lacs)

Capital works	IDP Network	Freeway Network	
New Links	10800.0	21330.0	
Upgradation of links	13839.0	20444.5	
Interchanges	2900.0	2550.0	
Bridges	4850.0	2688.0	
Total	32389.0	48012.5	

Sources: Ministry of Surface Transport
UP PWD - Model estimates
Government of Gujarat - R&B Dept.

The benefit-cost criterion also brings out the advantage of the freeway network over the IDP network, but it should be observed that the IDP network though having only marginally lower ratio is also justified. However, the IDP network also has the disadvantage of a larger underutilisation (particularly for outer ring road) and overcapacitated links as compared to the freeway network.

Table 3.6 : Evaluation of Alternative Network

		,		
	IDP Network	Freeway	Network	-
	Scenario I	Scena I	ario II	
Annualised capital cost - Rs. crores (12% interest and amortisation period of 15 years)	47.6	70.5	70.5	
Annualised maintenance costs - Rs. crores	2.94	3.15	3.15	1/1
Annual benefits - Rs. crores	122.44	183.32	189.4	
Benefit/Cost Ratio	2.42	2.49	2.57	

### 3.4.4 Additional Considerations for Evaluation

In addition to travel time which has been used to evaluate the alternate networks, costing of fuel consumption on the networks was also examined. The results of this anlysis are as under (Table 3.7).

The above clearly shows that there is not much difference amongst the different networks as far as cost of fuel consumption is concerned.

Table 3.7 : Daily fuel consumption cost of IDP & Freeway Networks

re	eway Networks	(1	Rs. lacs)
	and control to	Scenario I	Scenario II
IDP Network	Car Bus Truck	40.3 20.3 58.9	42.1 18.9 63.9
	Total	119.5	124.9
Freeway Network	Car Bus Truck	39.6 20.8 60.2	47.0 19.7 65.2
	Total	120.6	132.5

# 3.4.5 Technological Options for Passenger Transport

One of the technological options currently being thought for Delhi is that of introducing a light rail transit system in place of the conventional bus transport. LRT is basically a very high capacity system, mainly meant to serve the needs of The LRT as currently planned very dense traffic corridors. for Delhi consists of two corridors, one of which would run from Anand Vihar to Rajouri Garden and the second from ISBT to Safdarjung. Given the projected inter-urban traffic along different corridors, (less than one lakh except Delhi-Ghaziabad scenario II) and compared to future intra urban traffic, high capacity LRT system does not appear justified. for Delhi-Ghaziabad corridor, the feasibility of However, extending the intra urban system beyond 2001 needs to be examined especially due to the saturation of the railway system.

#### 3.5 Rail Network

The basis for the proposals in the railway sector was based on an evaluation of existing system in terms of the possibilities for improvement as well as to meet the future demand. In the Interim Development Plan proposals for the railway network were made.

The system improvement suggested by the IDP was that of developing a regional rail bypass. This line would pass through Meerut-Hapur-Bulandshahr-Khurja-Palwal-Sohana-Rewari Jhajjar-Rohtak-Panipat. In this proposal about 208 km of new railway lines was to be laid under the that all bypassable rail traffic of Delhi would utilise this regional rail bypass. In addition, IDP also proposed electrification along sections (1) Ghaziabad-Meerut, (2) Delhi-Panipat and (3) Delhi-Rohtak, the improvements of terminals, signals and also suggested measures for improving the utilisation of ring railway for catering to intra urban traffic. Some of these measures are incorporated in the medium to long term measures considered in this exercise important element of the IDP proposals was the proposal for a regional rail bypass, which prima facie does not seen justified at least during the planning horizon (upto the year 2001) of this exercise. It needs to be emphasised however that while looking for a justification for this bypass the NCR traffic alone was considered, whereas this railway line serves primarily the national traffic (NCR share of regional goods traffic in NCR railway system being less than 20% of the total) and hence evaluation would necessarily have to be from a national view point, which goes beyond the scope of such a regional transport exercise. The merit of the ring as such has not been included within the scope of this rail exercise but reference to linkage between inter-urban radia! passenger movement and intra urban Delhi traffic has beer made in a subsequent section.

Against this background proposals for rail system are developed under two alternatives:

- (a) Short-term marginal upgradation of existing network and rolling stock
- (b) Medium to long-term measures through restructuring the railway network serving DUA and other important urbar nodes along existing corridors.

### 3.5.1 Marginal Improvements

To cater to additional passenger traffic in existing network, the railways plan to increase the composition of passenger trains from 12/13 coaches at present to twenty coaches. It is expected to double 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 as 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 corirdors have been examined in detail. Results of the same are presented in Table 3.8.

### 3.5.2 Major Improvements

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 discussed below:

- a) Create additional capacity by rerouting certain through trains like Frontier Mail.
- b) Rationalisation of movement of freight traffic to Punjab/Haryana to avoid their concentration via Delhi at present.
- c) Eliminate existing bottlenecks on short stretches by providing following additional facilities:
  - i) On Palwal-Faridabad-Delhi section existing 3 lines will be converted to 4 electrified lines.
  - ii) Lay a dedicated single MG line from Delhi (Patelnagar) to Rewari. This section will not be electrified and trains will run with diesel traction on Pull-Push system.
  - iii) Providing an additional line on the single line Muradnagar-Meerut cantonment section and electrifying the entire section.
    - iv) Quadrupling of Ghaziabad-Sahibabad section, with electrification.
      - v) Provision of an additional third line (reversible) and a 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 3.8. As can be seen marginal measures have hardly any impact in relieving the pressures on the road system. While the cost of this alternative will be marginal, it cannot be considered any meaningful alternative in the context of basic objective of catering to future traffic in important corridors which is likely to increase in traffic three to four fold under two scenarios.

Table 3.8 : Additional Capacity in Rail System

Corridor	Additional carrying (one-	
	Short term	Long term
Delhi-Faridabad Faridabad-Palwal	4700 4700	29000 29000
Delhi-Gurgaon Gurgaon-Rewari Rewari-Alwar	8800 8800 8800	28000 28000 28000
Delhi-Bahadurgarh Bahadurgarh-Rohtak	6200 6200	
Delhi-Sonepat Sonepat-Panipat	6600 6600	-
Delhi-Ghaziabad Ghaziabad-Hapur Ghaziabad-Bulandshahr Ghaziabad-Modinagar Modinagar-Meerut	13600 12000 13000 5100 5100	56000 - 20000 56000 56000

#### 3.5.4 Cost of Proposed Railway System

The rail network recommended for adoption is one of the radial corridor development as it is estimated that the orbital links would be better served through the road network. The improvement on the radial corridors are:

- 1. having of an additional line electrified Tughlaqabad-Junction cabin-Palwal.
- 2. a) Electrification of Ghaziabad-Muradnagar sectionb) Doubling of Muradnagar-Meerut Cantt. section with electrification.

- 3. Additional electrified line between Ghaziabad-Sahibabad
- 4. Additional line on Delhi Azadpur-Dayabasti
- 5. Additional electrified line between Ghaziabad-Khurja
  - 6. Additional line (third) between Patelnagar and Rewari.

In addition to the above it would be necessary to develop an operating complex at Patelnagar/Brar Square and station facilities at Safdarjung. EMU/DMU rakes and Diesel locomotives would be additionally required. The cost of developing the radial corridors is estimated to be about Rs.218 crores of which Rs.165 crores will be for fixed assets and Rs.53 crores for mobile assets (Table 3.9). The unit rates considered in this exercise have taken into account costs for provision of tracks, stations, loops and signals along the proposed new lines. Electrification costs are provided for seperately.

### 3.6 Interfacing needs of Regional Transport Plan

The regional transport plan has been evolved mainly based on the projected inter-urban traffic forecasts. An important component having a bearing on such a plan is the traffic flows of intra-urban nature. The synthesis required between the two can only be achieved through a proper planning of the interfacing between the two. Interfacing as described here has taken into account the need for it in both the Road and Railway system.

# 3.6.1: Interfacing for road system

The two major components which need to be examined as a part of this exercise are (a) the effects on the circulation pattern, and (b) the need for new terminals. The problem of circulaton is mainly expected to be felt in Delhi than in other centre of NCR, mainly because most of the other towns are served by bypass road (as per proposed network plan) thus mitigating the problem of through traffic using the urban network. The projected daily traffic which would use Delhi's network are given below (Table 3.10):

The ring road for Delhi which is the main road for collection and dispersal of inter-urban traffic will not be in a position to do this task effectively taking into account the two to four fold increase (under two scenarios) in traffic. Some relief however may be anticipated due to the setting up

Table 3.9: Statement showing cost of fixed assets and mobile assets - Proposed Rail Network

A. FIXED ASSETS	AND STATE OF THE PARTY OF		
Sr. Section No.	Inventory Addition	Cost per Unit	Total cost (Rs.Crores)
1. Tughlaqabad-Junction Cabin-Palwal(40 km)	Fourth Line Electrifi- cation	Rs.65 lacs per km	26.00
2. a) GZB-Muradnagar	18 km Ele- ctrificatio	Rs.35 lacs	6.30
b) Muradnagar-Meerut Cantt (Doubling)		Rs.65 lacs	22.10
remains 100%; arrivated of		+Rs.15 lac per km for	5.10
3. GZB-Sahibabad (7 km)	Additional one line electrification cost	OHE 34 km Rs.65 lacs per km	4.55
4. DLI Azadpur- Dayabasti (9 km)	Provision of single line	Rs.50 lacs per km	4.50
5.a) Ghaziabad-Khurja (83 km)	Third Line + OHE	Rs.65 lacs	53.95
b) Patelnagar-Rewari (80 km)	Third Line	Rs.40 lacs per km	32.00
c) EMU Terminal at Patelnagar/Brar- Square	Station facilities	Fixed cost	5.00
6. Safdarjang	Station facilities	Fixed cost	5.00
		TOTAL	164.50
B. MOBILE ASSETS	EMU RAKED	SERVICES	COST
1. Palwal-New Delhi (61 km)	6	12	15.00
2. New Delhi/Delhi/Meerut Cantt. (73 km)	6	6	15.00
3. Ghaziabad-Khurja (83 k 4. a) Patelnagar-Rewari (83 km)	m) 3 7 DMU Rakes	10 14	7.50
b) Traction	7 Diesel	14	8.40
		TOTAL	52,.90

Source: Discussion with Northern Railway.

city. An alternative system which could be another larger concentric ring, but with access control is recommended. While detailing this proposal, road plans prepared by DDA need to be kept in view.

As regards terminal facilities all the important urban nodes (besides Delhi) would need to either drastically expand their existing facilities or go in for suitably located terminals. It is suggested that the development of bus terminals at the following locations which require proper interfacing due to large intra-urban traffic should be taken up also (i) Ghaziabad, (ii) Meerut, (iii) Noida, (iv) Faridabad, (v) Alwar, (vi) Gurgaon, (vii) Rohtak, and (viii) Panipat. In the case of Delhi, the DDA plan for constructing metropolitan passenger and freight terminals is expected to be sufficient to cater to the needs of this centre.

Table 3.10: Projected total daily traffic (PCU) entering and leaving Delhi

	Passenger vehicles	Bus	Goods vehicles	Total
Existing	53890	25370	77320	156580
Projected				
a) IDP Network SC-I SC-II	111440 (106) 163740 (204)	64990 (156) 74870 (195)	219300 (184) 259560 (236)	395730 (152) 498170 (218)
b) Freeway NW SC-I	92270 (71)	42400 (67)	149500 (93)	284170 (81)
SC-II	137010 (154)	60980 (140)	183930 (138)	381970 (144)

Figures in () are per cent increase over existing volume.

### 3.6.2 Rail Interface

The suggestions made for the regional rail system have been viewed from both the existing as well as the future plans for the intra-urban system. The existing situation where only Delhi has some intra urban rail system shows that there is hardly any movement or any service on the intra urban system. The discussions made hereunder is to understand the effects of the recommendations made for the regional network.

The improvement as suggested to the radial corridors involves no erosion of the existing capacity of the Ring Railway to run any additional commuter services. The only traffic that enters a part of this ring is from the Palwal-Faridabad corridor. Since this traffic terminates at New Delhi and does not proceed to Delhi the capacity of the ring remains unaffected as its crucial sector is the section, Okhla-Nizamuddin-New Delhi. The proposed diversion of eight through trains from Central/Western Railways via Safdarjung side of will lighten the load on the Ring. Moreover, it is envisaged that with the policy of increasing the carrying capacity of a train, only a marginal increase in the number of trains may take place.

As regards future goods traffic, the forecast tonnage bound for Delhi would be in the range of 30,000 to 35,000 tonnes. As such Delhi will have the line capacity to handle future traffic but terminal capacity needs to be augmented. This is possible because DDA has earmarked four new sites in Delhi for opening new terminals, which would sufficiently cater to the increase traffic in future.

Thus it can be seen that the regional network proposals as envisaged in this study would in fact lessen the loads on the existing system if status quo had been maintained in the future.

#### CHAPTER IV

# SUGGESTED REGIONAL TRANSPORT NETWORK

#### 4.0 Introduction

Suggested regional rail and road network to cater to the projected passenger and goods traffic for the year 2001, as discussed and evaluated in the preceeding chapters, are presented in this chapter.

### 4.1 Proposed Road Network

On the basis of evaluation of alternative road network considered and also expected role that railway system can play more efficiently in carrying additional passenger traffic (as presented in earlier chapter), the recommended network has been evolved. The road network which has been recommended for adoption in the National Capital Region will consist of the following:

(A) Development of Freeways (4 lane divided initially with full access control and all intersections grade separated).

# Upto 2001

- On parallel alignments to Delhi-Ghaziabad-Modinagar-Meerut and between Sonepat-Panipat.
- On new alignments to connect Faridabad-Noida-Ghaziabad.

# Beyond 2001

- On parallel alignments to Delhi-Gurgaon-Rewari-Alwar/Behror.
- On parallel alignments to the Delhi-Sonepat Road connecting the Sonepat-Panipat Freeway.
- 3. On parallel alignment to the Delhi-Faridabad-Palwal-Hodal connecting the Faridabad-Ghaziabad freeway on the one hand, and creating additional capacity for Delhi bound traffic.

- (B) Upgradation/widening of existing National Highways Upto 2001
  - 1. Development of Delhi-Gurgaon stretch to 6 lanes.
  - 2. Development of Ghaziabad-Hapur stretch to 4 lanes.

  - 3. Development of Gurgaon-Beror to 4 lanes.
    4. Development of Bahadurgarh-Rohtak-NCR Boundary to 4 lanes.
- (C) Development of an inner grid (4 lane divided highways) Upto 2001 (mostly 2 lane)
  - On new alignments to connect Jhajjar-Gurgaon-Faridabad and Murthal-Baghpat.
  - Strengthening and widening of existing alignments on Jhajjar-Rohtak-Sonepat-Murthal; Baghpat-Meerut; and Baghpat-Loni; Meerut-Hapur-Bulandshahr.

### Beyond 2001

Widening 2 lane stretches to 4 lanes. In this phase it is expected that almost the entire inner grid would need augmentation.\* A new link as proposed to connect Sikandrabad to Faridabad via the freeway to utilise the Bridge across Yamuna constructed as a part of the freeway becomes essential.

Development of an outer grid (4 lane divided highways) (D) Upto 2001 (only 2 lane)

> Strengthening and widening of existing alignment on Palwal-Sohana-Rewari-Jhajjar; Rohtak-Gohana-Panipat, Meerut-Hapur-Bulandshahr-Khurja-Palwal.

Beyond 2001 (4 lane divided highway)

Upgrading the grid into 4 lane divided highways.

The total cost estimated to develop this network is Rs. 48 crores (Table 4.1). Phasing of work is presented in Table 4.2. This proposed road network upto year 2001 has to b developed alongwith rail network proposed to cater projected traffic ...

Some of the links like Murthal-Baghpat, Jhajjar-Gurgaon Faridabad may require upgradation even before 2001.

In addition to the above, it would be necessary to develop new bus terminals at important centres (other than Delhi): (1) Ghaziabad, (11) Meerut, (111) Faridabad, (1v) Noida, (v) Alwar, (iv) Gurgaon, (vii) Rohtak, and (viii) Panipat. For Delhi, DDA proposals are recommended, however, costs are excluded as a part of regional transport plan. need for fleet augmentation and management which is important consideration has to be dealt with separately as it would depend to a large extent on routing and scheduling policies of each undertaking. These eight terminals would cost Rs.8 crores. The need for augmentation of passenger operating system is being estimated. Details of the will be mainly in the form of additional fleet requirement. the next report these aspects will be taken account.

Table 4.1 : Cost estimate (suggested network)

		e y	Length	(km)/Nos	. Cost	)
Α.	Freeways		237	. 0	21330.0	
В.	6 Lane highway	y	14	. 0	700.0	
C.	4 Lane Highwa	У	235	. 0	11750.0	
D.	M-2 Highway		643	. 0	8994.5	
E.	Interchanges		6 cloverle 7 trumpet	eaf	2550.0	0
F.	Bridge on Yam	una	1		1200.0	
G.	Other bridges	- Major	-		900.0	
		- Minor	_	1	588.0	*
					48012.5	-

Ta	ble 4	.2 :	Phas	ing of	works	(Road	Netwo	rk)	(Rs.	in 1	44 .acs)
							Upto	1995	1996	-2001	
A	Free	ways									
	i)	Delh	i-Gha	ziabad	-Meeru	t	103	50			
	ii)	Sone	pat-P	anipat					7	380	
	iii)	Fari	dabad	-Noida	-Ghazia	abad	36	00			÷
B,	6 La	ne Hi	ghway	8							
	i)	Delh	i-Gur	gaon			7	00			
C.	4 La	ne Hi	ghway	8							
	1)	Delh	i-Noi	da						400	
	ii)	Fari	dabad	-Palwa	l-Hodal	L	30	00	2		
	iii)	Hans	i-Roh	tak		0		į.	1:	900	
	iv)	Gurg	aon-R	ewari(	Dharuhe	era)			2	150	
	v)	Ghaz	iabad	-Hapur					1	350	
	vi)	Rewa	ri (D	haruhe	ra)-Bah	nror			2	950	œ
D.	M-2 1	Highw	аув	time							
	1i) 1ii)	Jhaj Sahi Bhiw Meer	jar-R bi-So ari-T ut-Ha	ewari hana-Pa ijara-			8	51 84.5 61.0 35.5			
		Khur, Bagh, Jhaj,	pat-M		-Farida	abad		12.0 50.0			
<b>E</b> , .	Inter	rchan	ges				21	50		400	
F.	Yamur	na Br	idge				12	00			12
G <sub>a</sub> ,	Other	r bri	dges	- Major				50 88		250 200	
						-	310	32		16980	

### 4.2 Proposed Rail Network

The rail network recommended for adoption is one of radial corridor development as it is estimated that the orbital links would be better served through the road network. The improvement on the radial corridors are:

- Laying of an additional line electrified Tughlaqbad-Junction cabin-Palwal
- a) Electrification of Ghaziabad -Muradnagar section
  - b) Doubling of Muradnagar-Meerut Cantt. section with electrification
- 3. Additional electrified line betwen Ghaziabad-Sahibabad
- 4. Additional line on Delhi Azadpur Dayabashti
- 5. Additional electrified line between Ghaziabad-Khurja
- 6. Additional line (Third) between Patelnagar and Rewari.

In addition to the above it would be necessary to develop an operating complex at Patelnagar and station facilities at Safdarjung. EMU/DMU rakes and Diesel locomotives would be additionally required. The cost of developing the radial corridors is estimated to be about Rs.218 crores of which Rs.165 crores will be for fixed assets and Rs.53 crores for mobile assets (Table 3.9). In terms of phasing it is recommended that except for Ghaziabad-Khurja section all the other sections should be ready during the VIIIth plan. This means an investment of Rs.156 crores in the remaining portion of the VIIth plan and VIIIth plan. The balance of Rs.62 crores could be undertaken in the IXth plan period.

BHIWANI ONE ADDITIONAL LINE BIJWASAN FL SA NEW RAIL TML .64.1.1. QALWAR DELMI CANTT HISTINAGARY PATELMICAR NEW RAIL TERMINAL CHARAINA BALE SQUARE Than BRIDGE ONE ADDITIONAL MEM DETHI 100, 00104 PRAGATA BAZAR H 30 WITH ELECTRIFICATION 301 TO SHAMLE LINES C) SHIMU DEARAUT babe a ELECTRIFICATION
FROM MEERUT-GED MHT KRA N EXTENSION OF G#47/4840 ONE ADDITIONAL POPULDALE A GRAZMEND Mugaphacan JOMUZ NATAR MODINAGAR MICHOT CITY

PROPOSALS FOR RAIL NETWORK

B. G. Double line

B. G. Single line

- M. G. Single line
Delh avoiding line
Goods avoiding line

(Not to scale)

Operations Research Group

