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Implementation of Transportation Plan In The Ncr Region

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ABSTRACT

The transportation networks in region influences population distribution, shape of cities, access to markets and thus directly impacts the overall socio- economic development. Since transportation has a pivotal role it is imperative to develop an eco-friendly sustainable and convenient multi modal transportation network so as to improve connectivity, safety and reduce traffic pressure and travel time. So, it can be revealing that transportation is also a meaningful criterion to examine the situation of regional unbalance regarding the process of growth of transportation sector.

The 'National Capital Regional Plan 2021', New Delhi aims "to promote growth and balanced development of the National Capital Region" as one by providing efficient and economical rail and road based transportation network along with -integrated land-use patterns to support the balanced regional development. It is also clears the lack of coordination between the various government and non-government agencies which examined that the transportation growth is not occurring as planned manner. The decentralized growth was planned according to the regional plan but the whole development & growth was seen only along the Delhi (i.e. Ghaziabad, Noida, Greater Noida) and Greater Noida is the extension of Noida which was not the part of the regional plan. There is a slow rate of implementation of various planned projects even within the core sub region of NCT – Delhi. The DFC (Dedicated Freight Corridors) was not also the part of the regional plan. There is a less growth in proposed industrial centers like Meerut and Bulandshahr and roads proposed are not as per the proposals of industrial growth leading to fall in economic activities in regional centers. The present paper is an attempt to examine the NCR Plan prepared and how it has been implemented in sub region of Uttar Pradesh.

Keywords :Transportation, Growth, Regional Development,

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1.1 Traditional Theoretical Approaches to Regional Policy

There are numerous approaches to regional development, each providing a 'lens' through which one can examine particular issues. These analytic lenses provide us with a way of assessing policies and programs.

Theoretical approaches are important because they provide explanations as to why and how particular regional development “problems” emerge. This should inform our policy efforts to address the problem. This is important in a policy context because our focus is on “policy learning” – How do small, sub-national peripheral economies respond to the challenge of globalization? And can one learn something, rather than re-invent the wheel? Theories of regional development policy are ways of assessing the real world, generating explanations about current practice. These theoretical frameworks also provide for the opportunity for comparison over time and space, subject to the limitations of comparative methodology¹. It included Central Place Theory which emphasised on central concentration³. On another hand there is Core Periphery Model which is based on the core and periphery equilibrium². Alike this, Growth Pole Theory emphasised on the equal scale of development on all the spatial poles and Spatial Equilibrium Model express the equal development process³. These theories enlightened to understand the regional development in a specific manner.

To examining regional planning, as an unbalanced process both sectorally and spatially, many of the traditional models dealing with spatial variation in levels of development are irrelevant. Most of our interregional growth models are based on concepts drawn from International Trade theory⁴. As a consequence they are dependent on static equilibrium and assume that, given the relatively free mobility of the factors of production, factor movements tend to bring about an equalization of income among regions.

1.2 Need of the present study:

Based on the above description one can analyse the transportation growth as a regional development in the NCR sub- region (U.P).

1. The development process of Transport Sector is according to NCR plan or not.
2. Does development in the region leads to balance development?

1.3 Transportation as a spatial system in NCR Sub-Region (Uttar Pradesh)

NCR Planning Board had prepared a Functional Plan on Transport for National Capital Region with perspective year 2032 which is an Integrated Multimodal Transport Plan (IMTP) for NCR⁵ & ⁶. The Functional Plan was prepared after review of demand and supply of transport infrastructure in NCR. The Functional Plan was approved by the NCR Planning Board in November,

2009. The Plan recommended Integrated Multi-Modal Transportation System for NCR to improve the mobility of both people and goods. It also recommended systematic development of Transport System for fast and efficient movement of traffic, particularly for commuter traffic and to achieve sustainable development of the region. The Plan comprises following components:

Table1 : Major Components of Transportation Plan

1. Regional Rapid Transit System (RRTS)	7. Bus Terminals
2. New Rail Lines	8. Logistic Hubs
3. Regional Mass Rapid Transit System (MRTS)	9. Integrated Freight Complexes
4. Up-gradation of Roads	10. Highway Facilities Centres, and
5. Expressways	11. Airports
6. Bus Transport System	

A comprehensive analysis is carried out to understand the existing as well as possible flow of traffic movement, economic activities within UP Sub-region. The study is also carried out for existing status related to traffic and transportation and the various modality of integrated transport functional planning for NCR (UP Sub-region)⁷.

The NCR plan has important objectives to improve transport system in U.P Sub-region as:

1. To develop convenient intercity transportation network.
2. To provide free and convenient flow of traffic movement within NCR UP.
3. To reduced traffic pressure in major centers of NCR UP.
4. To provide proper connectivity among cities and between cities with rural centers.
5. To avoid new roads as far as possible to save rich agriculture land of this area.
6. To reduced travel time in NCR UP.

For this, the existing and proposed study of the area is required, which is described in the upcoming section.

1.4 Concentrated Development vs Decentralisation of Development

A comprehensive analysis was carried out to understand the existing as well as possible flow of traffic movement within UP Sub region of NCR, the effects of on-going as well as proposed mega projects (that may affect traffic characteristic) in the study part. The study was also carried out for existing framework related to traffic and transportation and the various modality of Integrated Transport Functional Plan for NCR.

1.4.1 Road Network

a) Existing Status

As per the Sub Regional plan (U.P) 2031, the existing road network consists of Expressways, National Highways, State Highways, Major District Roads (MDR), Other District Roads (ODR) and Village Roads. According to the base map of 2012, the total road length in UP Sub-region is 14,464.0 kilometres and the road density is 133.31 km/ 100sq km. At present, out of 3,168 villages, 87.85 % of villages (2783 villages) are connected by metalled roads of different hierarchy. There are two expressways, six NHs and five SHs in UP Sub-region. There are two expressways in the U.P sub-regions which cater the traffic which are moving to Delhi because these areas are very close to the Delhi.

Table 2: Existing Expressways, National Highways (NH) and State Highways (SH)

Sr. No.	Roads	Connectivity	District	Origin	Destination
1.	Noida-Gr. Noida Expressway	Noida-Gr. Noida Expressway	GB Nagar	Noida	Greater Noida
2.	Yamuna Expressway	Noida-Gr. Noida Expressway	GB Nagar	Greater Noida	Agra
3.	NH-24	Ghaziabad-Garhmukteshwar	Ghaziabad	Delhi	Lucknow
4.	NH-58	Ghaziabad-Meerut	Ghaziabad-Meerut	Ghaziabad	Badrinath
6.	NH-91	Ghaziabad-Bulandshahr-Khurja	Ghaziabad, Hapur, Bulandshahr	Ghaziabad	Kanpur
7.	NH-93	Aligarh-Dadri-Moradabad	Bulandshahr	Moradabad	Agra
8.	NH-119	Meerut-Mawana-Bijnor	Meerut	Pauri	Meerut
9.	NH-235	Meerut-Hapur-Bulandshahr	Meerut, Gaziabad, Bulandshahr	Meerut	Bulandshahr
10.	SH-14	Bhaagpat-Meerut-Garhmukteshwar	Bhaagpat-Meerut-Ghaziabad	Garhmukteshwar	Sonipat
11.	SH-18	Bulandshahr-Debai	Bulandshahr	Meerut	Badaun
12.	SH-57	Ghaziabad-Bhaagpat	Ghaziabad-Bhaagpat	Delhi	Saharnpur
13.	SH-65	Bulandshahr-Garhmukteshwar	Bulandshahr	Bulandshahr	Syana-Garh
14.	SH-82	Meerut-Baparsi	Meerut	Meerut	Karnal

Source: National Capital Region Plan (2001-2021)

1. There are six national highways in the U.P sub-regions which caters the maximum traffic of it.
2. In U.P sub region all metro centers, regional centers, sub-regional centers & service centers are connected by metalled road. Very few central & basic villages which are not connected by metaled roads.

3. By-passes and ring roads are available for very few towns which results in mixing of city traffic with through regional traffic.
4. The physical condition of national highways like NH-91 is poor. Due to improper geometric alignment of the roads, in many places water logging is observed. On NH-91, vegetable market, on street parking can be seen commonly.

NCR Plan proposal 2021: The NCR proposals of 2021 includes the up gradation of Old Yamuna Road with upgrade SH and MDR to 60 m wide Green Buffer, Masoori- Bugrasi- MDR to SH lanning new bridge 30-30 m wide green buffer along both sides of ROW, Daluhera- Hapur – 6 lanning BY-PASS, Naraura- Bulandshahr – SH to NH, Baghpat- sonipat – ODR to SH and Baghpat – Meerut- SH to NH. It also includes New Roads such as Noida 47 (BY-PASS Road), Khekada- Delhi (NH-1), Loni- Delhi (NH-1), Baghpat- Delhi(NH-1), Western Expressway and Meerut - Ghaziabad Expressway . the New By-Pass of Pipeline Road (BY-PASS) and Hapur BY-PASS (NH-24 to NH-34) is also a part of this development.

b) controlled area. Although Major Roads will interchanges with partial control. The Kundli- Ghaziabad- Palwal Eastern peripheral Expressway and Ghaziabad- Meerut Expressway has been completed recently in 2019.

As figure no 1 show facts regarding the level of development such as Yamuna expressway connect the Delhi-Noida-greater Noida, MDR and ODR connecting the regional centers ,National highway connecting Ghaziabad-Delhi-Noida is not under the right processing system. There is a poor connectivity between the metro centers and regional center with NCT. There is only Rail network helping the freight movement.



Figure 1: Road Network in U.P Sub-Region

- c) **Development as per the NCR plan:** As per NCR plan the **Eastern Peripheral Expressway** (Kundli-Ghaziabad-Palwal) of 86.5 Kms with 6 lane (expendable up to 8 lane in future) is completed only in 2019. However as per the NCR plan this project needs upmost priority for bypassing traffic away from Delhi and interlinking Regional centres. The fifteen years delay in this project effects on desirable result of the Plan and subsequently balanced regional development.

Apart from this The Ghaziabad – Meerut Expressway – Meerut – Dasna 65 Km is in under progress. There is a development of grid roads within UP Sub-Region between Sonapat- Baghpat- Meerut and Meerut- Hapur- Bulandshahr- Khurja- Palwal.

As figure no 2 shows that there is some existing projects such as **Golden Quadrilateral Yamuna Expressway** connecting the Delhi-Noida-Greater Noida-Agra, State highway and ODR connecting the regional centers are been proposed in revised UP Sub Regional Plan, There is a less growth in proposed industrial centres like Meerut and Bulandshahar. Roads proposed are not as per the proposals of industrial growth leading to fall in economic activities in regional centres.

- d) **Implementation not done as per NCR plan proposals :** The Green Buffer Zone along Expressway (Buffer-100 Metres), National Highway (Buffer-60 Metres) and State Highway (Buffer-30 Metres) is not done as per NCR plan and although, on the Highway Corridor Zone the 500 m corridor on either side of highway has not even started yet.
- e) **Proposals beyond Sub Regional Plan:** The U.P sub-region has many projects on the ground reality but they are not a part of the U.P sub-region plan.
- **Taj Expressway:** - This PPP (Public Private Partnership) project is a 165.5 km access controlled high speed six-lane (expandable to 8 lanes) expressway connecting Delhi with Agra via Mathura. It has reduced the travel time between New Delhi and Agra.
 - **Development (Road Network) other than NCR plan 2012:** There is also another development which is not a part of NCR plan-2012 this includes the Expressways of Noida Greater Noida Expressway, Yamuna Expressway- Greater Noida, Ganga Expressway- Greater Noida- Ballia of 105.5 Km stretch with 110m proposed road high speed 8 lane expressway and Upper Ganga Canal Expressway- (Purkazi- Sanauta Bridge) of 147.8 Km with High speed 8 lane corridor. It also include National Highways as NH 24 - Ghaziabad –Garhmukteshwar, NH 58 – Ghaziabad – Meerut – Daurala , NH 91 – Ghaziabad

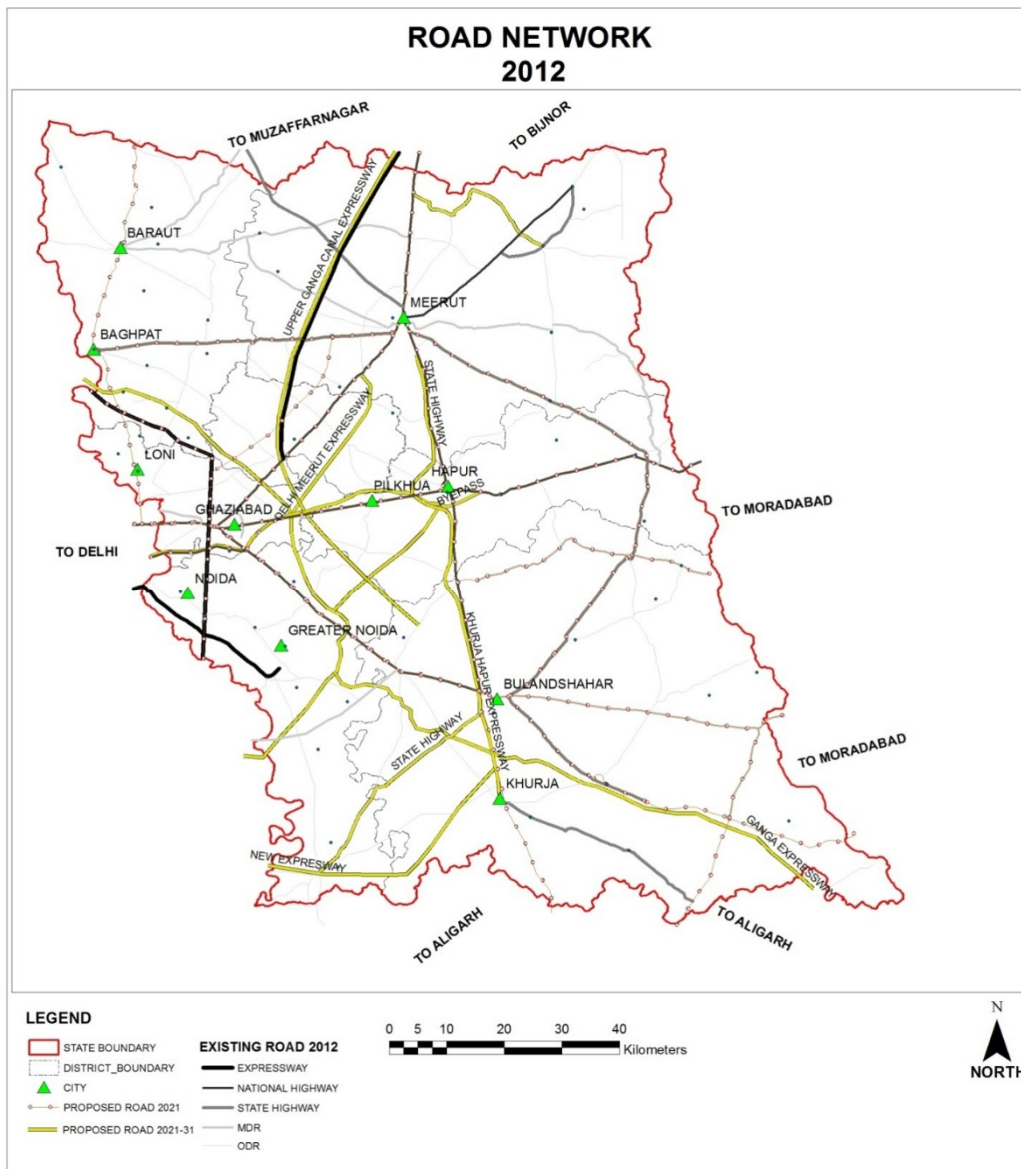


Figure 2: Road Network - 2012

Khurja, NH 93 - Aligarh- Moradabad , NH 119 – Meerut – Bijnor and NH 334 – Meerut – Bulandshahr. The state highway is also a part of this development which includes SH 14 – Baghpat- Garhmukteshwar, SH 18 – Bulandshahr – Debai, SH 57 – Ghaziabad – Baghpat , SH 65 – Bulandshahr – Garhmukteshwar and SH 82 – Meerut – Baparsi.

1.4.2 Rail Network

a) Existing Status

UP Sub-region is served by a network of rail routes connecting important towns. It also acts as a transit network for passenger and freight movement between parts of the country. Major rail routes in the Sub-region are:

- Delhi – Ghaziabad – Khurja – Aligarh (Electrified triple line)

- Delhi – Ghaziabad – Hapur – Moradabad (Double line Electrified)
- Delhi – Ghaziabad – Meerut- Saharanpur (Double line, electrified)
- Delhi – Shahdara – Shamli (Single line, electrification is in progress)
- Meerut- Hapur- Bulandshahr- Khurja (Electrified Single line)

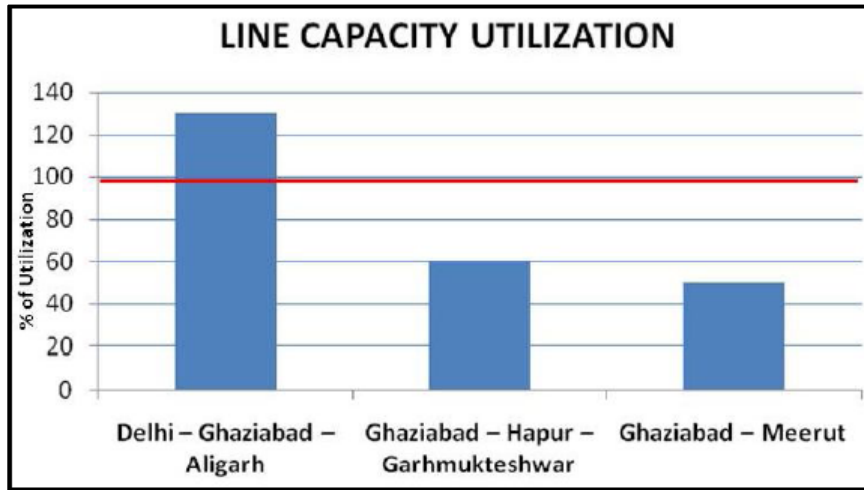


Figure 3: Line capacity utilization of major rail route.

Note: Red line shows the permissible capacity of each Sub-section.

U.P sub-region is served by a network of rail routes connecting important towns. It also acts as a transit network for passenger and freight movement between rests of the country. In U.P sub-region 3 rail routes are there, all of them are in different way

- Ghaziabad-Garhmukteshwar
- Ghaziabad-Meerut-Muzzafarnagar
- Ghaziabad Aligarh

In U.P. sub-region, there are 53 railway stations; the maximum number of which is present in Ghaziabad district (20) followed by Baghpat (12), Meerut (7) and Gautam BudhNagar district (4). The condition of few stations are good otherwise all of them are in very bad condition.no benches are provided for sitting, no sheds have created so that people can stand over there in the summers, even condition of toilets are deteriorated.

Ghaziabad is the most important rail inter -change station as three routes converge here this is many trains coming from U.P, have to stop first in Ghaziabad and then they headed towards Delhi Ghaziabad is uses as a freight point of U.P, Delhi as well as whole NCR as shown infigure no. 4.

The existing line capacity has reached saturation in Delhi Area. Further augmentation can be done in Delhi Area to cater to the current and future demand in the following manner.

- 1) In terms of freight, U.P sub- region has 4 logistic hubs & 2 inland container depots but they are not implemented properly.

- 2) Each district of U.P sub-region has industrial units but they are more concentrated in Ghaziabad, Meerut, Noida these three settlements have maximum industries in it even all of them are having transport Nagar because of D.F.C & DMIC
- 3) Meerut having logistic hub as well as industries because Meerut population is very much as compared to other districts within the U.P sub-region.
- 4) Inward traffic for and beyond UP Sub-region destinations consists of coal for power houses and industries, fertilizers, cement, iron & steel, containers loaded with imported traffic and general goods etc.

Presently, goods traffic is given lower precedence and the scope for handling freight traffic due to congestion at terminals in Delhi area is high.

b) NCR Plan proposal 2021-31: There are NCR plan known as “Functional Plan on Transportation for National Capital Region-2032” which included the Additional parallel lines, Increasing Line capacity, Orbital rail corridor and Regional Rail Transport System such as DMRC projects of metro extension to Ghaziabad, Vaishali Ph-III, Greater Noida and Regional mass Rapid Transit System of Ghaziabad- Meerut, Noida-Greater Noida-Jewar, Ghaziabad-Hapur. The Regional Rapid Transit System is suggested for 4 corridors for the region⁸. Some existing projects which examine the level of development such as Single line rail network was present in 2001, Orbital Rail corridor, Regional rapid transit system and double rail was proposed in 2021 plan to increase the connectivity and fast freight movement as shown in figure 4.

c) NCR plan proposals and their Implementation: According to NCR plan proposals -2021 there will be Green Buffer Zone along rail (Buffer- 30 Meters). The Regional Rapid Transit System will be connecting with NCT-Delhi and suppose to be completed by 2025. There will be either laying of two dedicated tracks or strengthening of existing rail network and Orbital Rail corridor will be connecting GB Nagar, Ghaziabad, Modinagar and Dadri. The Orbital Rail Corridor and RRTS projects were not implemented till yet, Green Buffer was proposed along the rail line which was not implemented and Ministry of Railway has given proposal for DFC and DMIC as shown in figure no. 4.

As figure no 5 shows that laying down of dedicated tracks were not implemented, Orbital rail corridor and RRTS project were not implemented yet and still there is poor freight connectivity between the Delhi, Ghaziabad, Hapur, Meerut, Noida and Bulandshahr, Half the portion of the region is still not yet considered for the rail connectivity yet and DMRC metro project has been implemented which connecting Delhi-Noida-Greater Noida which was not the part of the NCR Sub Regional plan.

d) **Development as per the NCR plan:** As per NCR plan there is only doubling of tracks as parallel tracks is a part of new development.

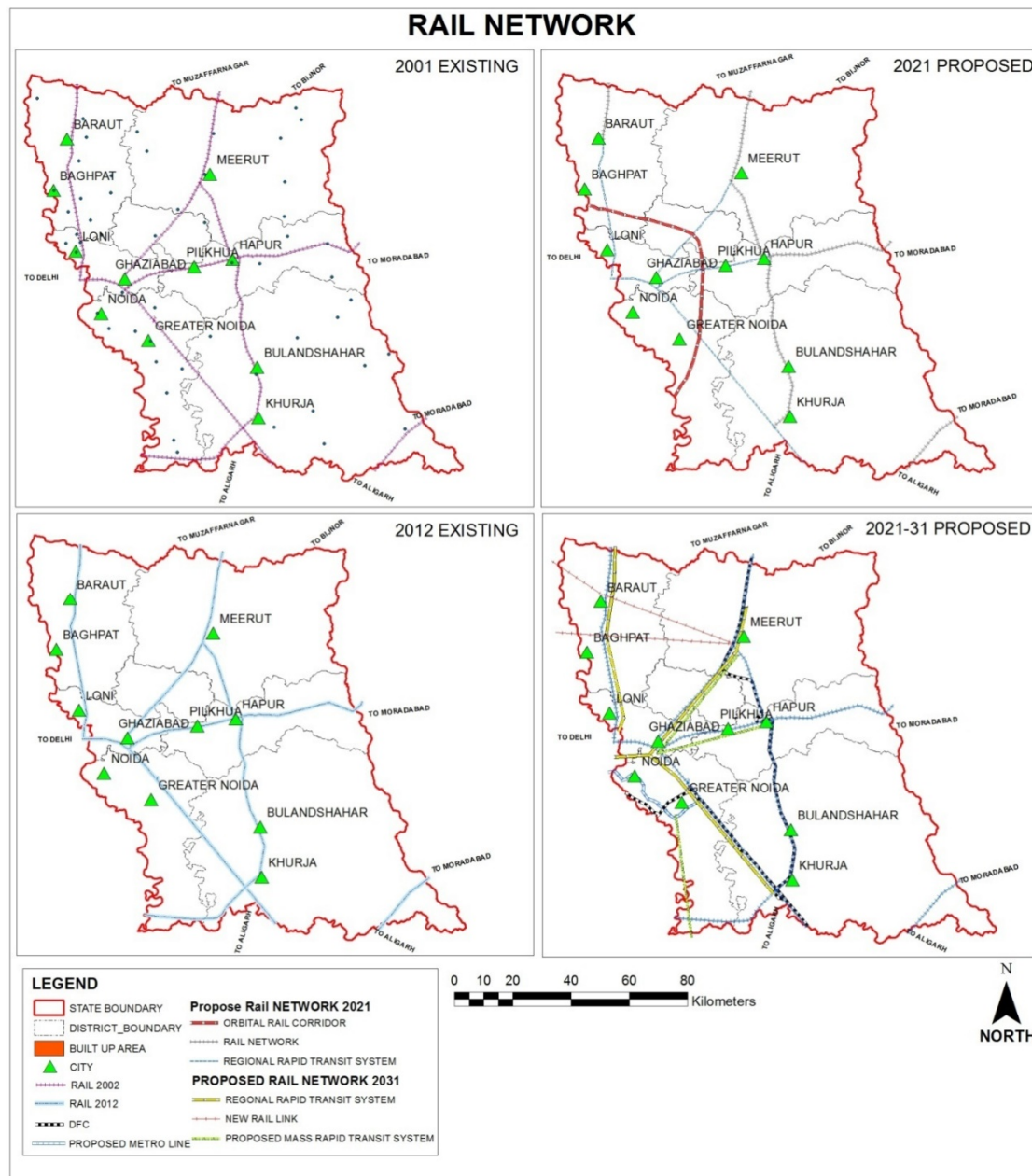


Figure 4: Rail Network in U.P sub region

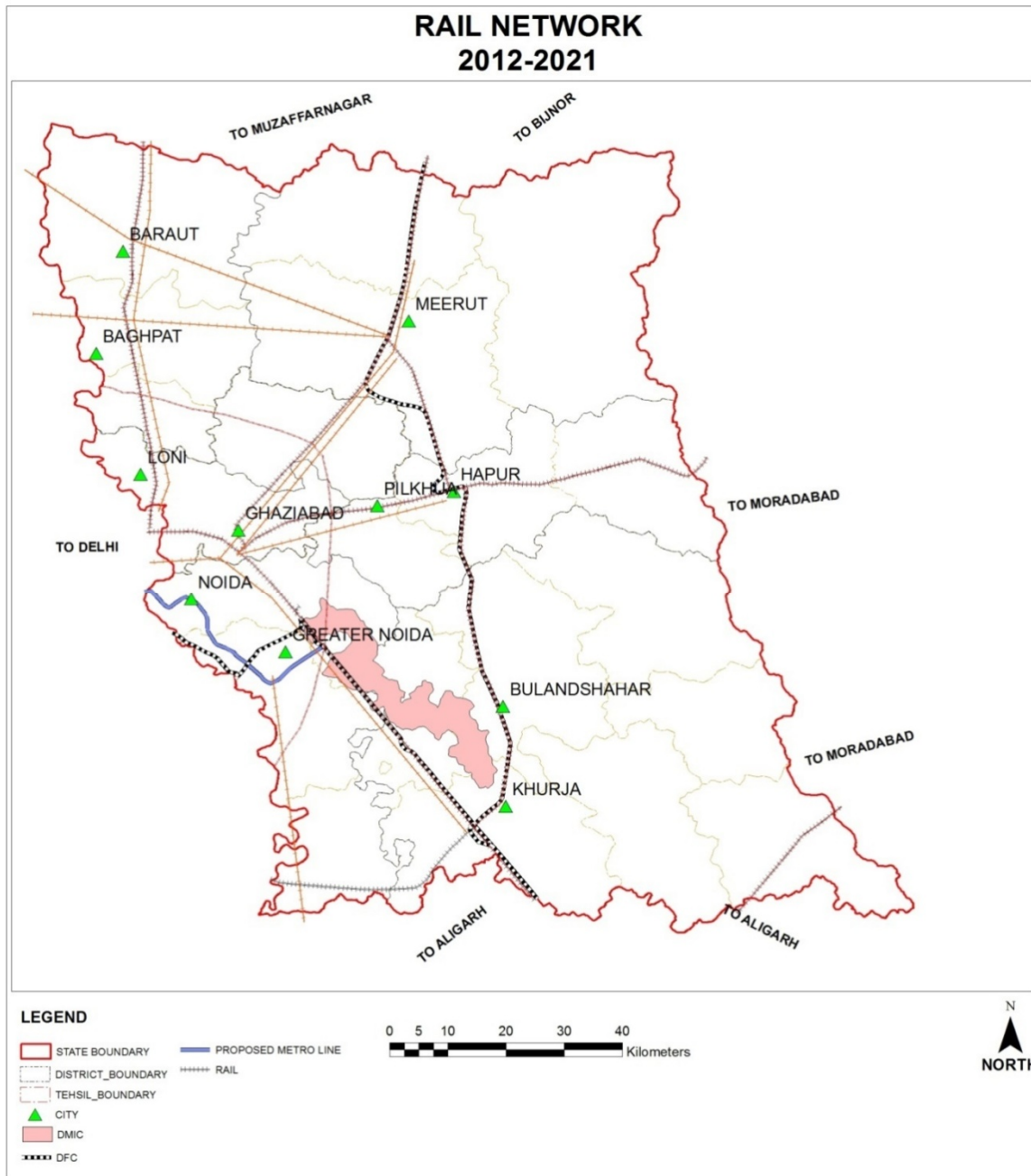


Figure 5: Rail Network 2012-2021

- e) **Implementation not done as per NCR plan proposals:** There is Green Buffer Zone for rail line (Buffer- 30 Meters) is not done as per NCR plan. As figure no 5. Shows there is weaker rail network causing a slow freight movement and slow economic growth despite of such big proposals.
- f) **Proposals beyond Sub Regional Plan:** It includes the following:
- **Dedicated freight corridor:** - The Indian Railways quadrilateral linking the four metropolitan cities of Delhi, Mumbai, Chennai and Howrah, commonly known as the Golden Quadrilateral and its two diagonals (Delhi- Chennai and Mumbai-Howrah), add up to a total route length of

10,122 km carries more than 55% of revenue earning freight traffic of Indian Railways. The existing trunk routes of Howrah-Delhi on the Eastern Corridor and Mumbai-Delhi on the Western Corridor are highly saturated with line capacity utilization varying between 115% & 150%. The surging power needs requiring heavy coal movement, booming infrastructure construction and growing international trade has led to the conception of the Dedicated Freight Corridors along the Eastern and Western Routes.

- **Development (Rail Network) other than NCR plan 2012:** It is also included DMIC (Delhi Mumbai Industrial Corridor) with Feeder Rail Service connecting to eastern and western freight corridors and DMRC metro project of Delhi-Noida-Greater Noida.

1.4.3 Development Scenario in the U.P Sub Region

As figure no 6 reveals that there is Extended CNCR (Central National Capital Region earlier DMA- Delhi Metropolitan Area) zone which is beyond the proposal, proposal for the extension of CNCR according to the growth trends of Ghaziabad, Noida and Greater Noida and Extension of organisable limit and CNCR are having conflicts taking the plans different directions. Some facts show the level of development such as proposal beyond the plan by various agencies, Poor dispersion of these urban settlements, Expansion of organisable limits of the cities and Expansion of CNCR area limits far beyond the limit. The unexpected high growth of Cities like Greater Noida, Loni and Ghaziabad, Central level proposals (DMIC, DFC) causing deviation from the plans changing the perspective of the Sub Regional Plan. This aberration created from the failure in the projections assumed according to the proposed growth centres and Lack of coordination between the authorities while preparing the master plan and the sub regional perspective not taken in account.

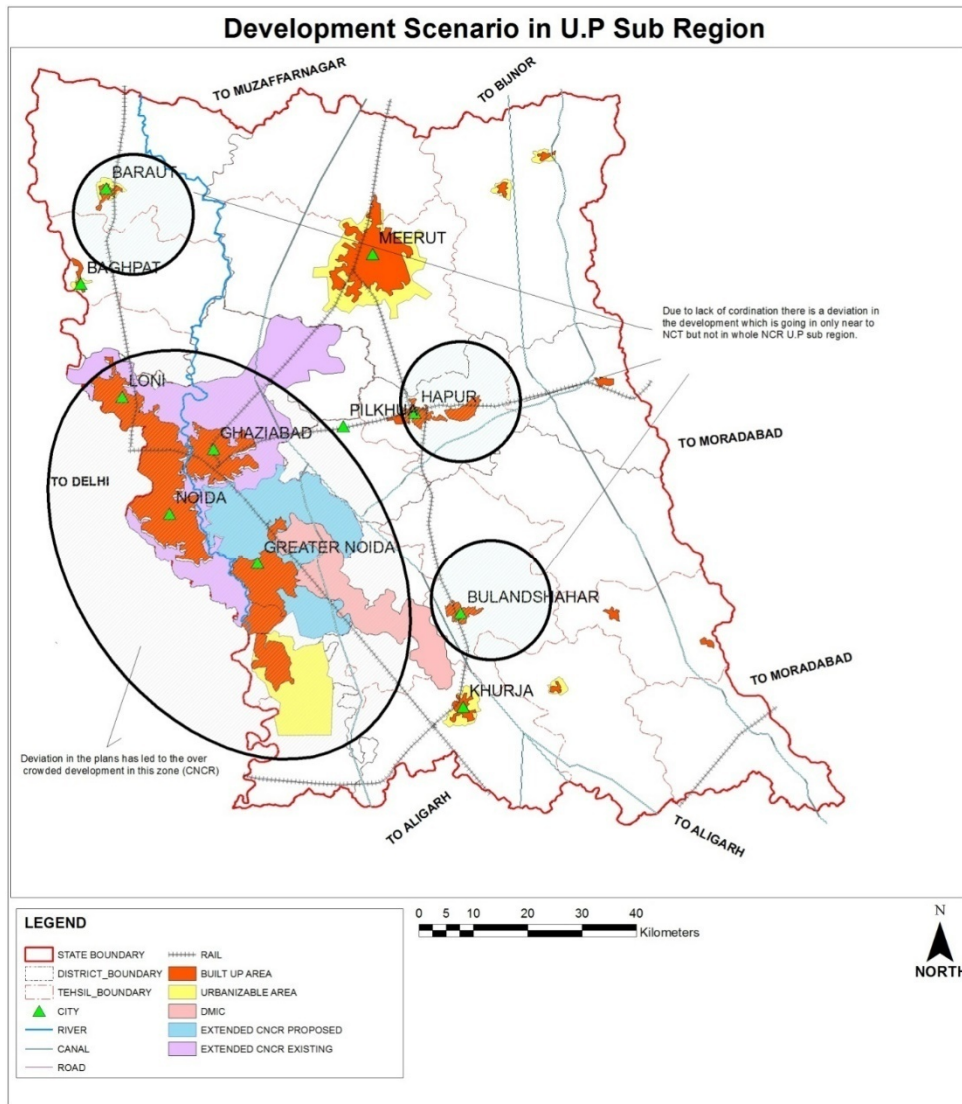


Figure 6: Development Scenario in U.P Sub Region

1.5 Conclusion

The present study focuses on regional disparities in the NCR sub region in U.P and compares the existing as well as future proposals with the level of development. To have a better understanding of the issues involved, the present paper has traced government policies on balanced regional development from the beginning and has also touched on the issue of devolution of resources. This hopefully will enable a better insight into the problem. The present paper is an extensive discussion of government policies, a detailed discussion of transportation situation in the NCR sub region in U.P.

The consensus for a holistic ‘Avoid- Shift- Improve’ transportation paradigm is yet to be fully realised. The road network is inadequate both in quantity and quality. By-passes and ring roads are available for very few towns which results in mixing of city traffic with through regional traffic. Many parts of UP Sub-region are neglected in terms of transport such as quality of connectivity to

Baghpat and Bulandshahr is inadequate. Lateral connectivity is not improved in Transport Functional Plan for NCR 2032 proposal in UP Sub-region. The physical condition of National Highways like NH-91 is poor.

Apart from these “poor implementation of plan” the major transportation proposals by State Government like the Ganga Canal Expressway, Ganga Expressway, Delhi- Meerut expressway, widening of NH-24, Jewar Airport and Meerut Satellite airport have been conceptualised for quite some time and also form a part of the Transportation Functional Plan but the progress in implementation of the proposals is quite slow. More particularly, environmental clearance of Ganga Expressway and Upper Ganga Canal Expressway is still awaited from Government of India. The delays in execution of these infrastructure projects adversely affect the basic planning of Regional Plan/ Sub-regional Plan or Master Plan. Besides the funds required for implementation of such proposals should be released from the Centre expeditiously in order to cater to the rapid urbanisation in Delhi and NCR.

In their planning process, Indian Railways have not concentrated on regional/ local/ metro commuter traffic exclusively. The issues of punctuality, reliability of service, comfort, seamless operation, reduction in waiting time, and physical transfer from one mode to another, and above all affordability of tariff (or economic viability for the railways) are equally vital in determining the socially and individually preferred mode of travel. Rail network in many areas are non-electrified therefore EMU (Electrical Multiple Unit) operation for commuter traffic is not feasible.

Rather, it is an attempt to focus on the issue of balanced regional development which has been an underlying theme of planning in India. The unexpected high growth of Cities like Greater Noida, Loni and Gazibad, Central level proposals (DMIC, DFC) causing deviation from the plans changing the perspective of the Sub Regional Plan. This aberration created from the failure in the projections assumed according to the proposed growth centres and Lack of coordination between the authorities or agencies while preparing the master plan and the sub regional perspective not taken in account. It is an important criterion which detailed out the level of progress of development through government and non-government agencies.

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