

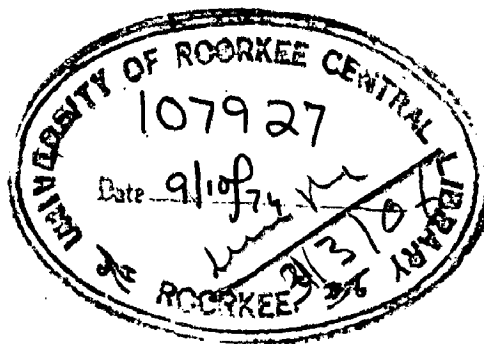
VIABILITY OF THE CONCEPT OF "CENTRAL BUSINESS DISTRICT" IN INDIA

(WITH SPECIAL REFERENCE TO SELECTED TOWNS IN U. P.)

A Dissertation
submitted in partial fulfilment
of the requirements for the award of the degree
of
MASTER OF ARCHITECTURE
in
TOWN & VILLAGE PLANNING

By

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C E R T I F I C A T E

Certified that the dissertation entitled
"VIABILITY OF THE CONCEPT OF C.B.D. IN INDIA" (WITH
SPECIAL REFERENCE TO SELECTED TOWNS IN UTTAR PRADESH),
which is being submitted by Mrs. Suhasini Janeja, in
partial fulfilment for the award of the degree of
Master of Architecture (Town & Village Planning),
Department of Architecture, University of Roorkee,
Roorkee, India, is a record of the student's own work
carried out by her under my supervision and guidance.
The matter embodied in this dissertation has not been
submitted for the award of any other degree or diploma.

This is further to certify that she has worked
for nine months, from 10th January, 1973 to 14th October,
1973 for preparing this dissertation at this University.

ROORKEE:
DATED: OCTOBER 21, 1973.


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Professor and Head

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P R E F A C E

'Market' and 'Marketing' are, perhaps, as old a phenomenon as 'Civilization' itself. Apparently, the early settlers who evoked the initial germs of civilization would have felt the need of exchange of goods and services, thereby, giving rise to the first rudimentary institutions of 'market places' and 'marketing'. With the passage of time, and ever increasing complexity of civilized living, and concentration of population, the scope and objectives of these institutions would have gradually and steadily expanded. Needless to emphasize, that the advancements in science and technology which would have motivated people to converge into ever increasing and constantly expanding communities, later to be known as Urban Centres, would have brought in concomitant variations in the disposition of these institutions of 'market places' and 'marketing'. In effect these institutions would have evolved into their present configurations through a long process of inter-action with social and economic demands and needs of the people inhabiting the ever increasing communities and settlements. Thus, the transformation of these institutions, from the Greek Agora to the Roman Forum; the medieval 'merchantile guild' to a European Market; the civic centres of new towns of Harlow, Hampstead-heath etc. to the complex shopping precincts and super-markets of

v

American cities; in effect a manifestation of the constant evolution of these institutions which would have been warranted because of the ever growing complexities of urban living.

The unlimited expansion of town areas into Metropolis, Megalopolis and Ecunopolis, possessing a variety of urban landuses and their intensities, further brought in the dimension of providing the link between these landuses through different means of movement and communications; which had, at least in the west, warranted the welfare planners to rationalise and systematise the operation and function of the said institutions in a manner so that there is optimization of benefits and reduction in losses to the community at large, such a rational approach, in the west, had given rise to the establishment of a hierarchy of business and commercial centres for varied size of communities. The well-defined central business districts being, generally at the apex of such a hierarchy. Clarity of such centres was not confined merely to their physical configurations but extended to the nature, kind and quantum of functional activities which were supposed to constitute these centres. The co-relation of such areas with the rest of functional use areas of the city and the nature and means of transportation available, the kind of environment desired and the budgeting for realisation of these areas in phased development programmes, it seems, was generally clearly understood and worked out, before

embarking upon any new project for a new settlement or for a program involving development, renewal or redevelopment of any city or town.

The author has an apprehension that there has been in vogue, in our country, a tendency to adopt some of these measures developed in the west without adequate consideration about the viability and usefulness of the same in the conditions obtaining in our urban centres. The net results of such an indiscriminate adoption is, at best, confused mutation and super-imposition of these concepts, in the projects which deal with the development or redevelopment of our shopping, business, and market areas in our existing or developing cities, contravening the requirements of the local population. The content of such adoptions, it is feared, might even act as a deterrent in the fulfilment of the socio-economic requirements of our folks for whom these adoptions are supposed to cater. It would be particularly so, because of the distinct difference of modes of transportation, the inherent mixture of landuses, and the physiology of our existing urban areas which are at a great variance when compared to the dispositions of the urban centres in the west.

The author intends to investigate, through logical inference and empirical reference, the viability and usefulness of the concepts of the 'Central Business Districts' developed in the west and the appropriateness for deployment of the same for rejuvenation of business areas in our urban communities, within the frame of

physical, social and economic restraints obtaining in the urban areas of our country.

Apparently, this is going to involve, in the first instance, a thorough understanding and clear knowledge of the concept of the 'Central Business Districts' itself, which has been developed and adopted in the west (particularly U.S.A.) secondly, it would be incumbent to study the sequential growth and development of our urban business areas and sort out the advantages and shortcomings of their current existence, before embarking upon an assessment as to how far it would be desirable and healthy to ampute the western concept of 'Central Business District', to organise or reorganise our central business areas for their efficient functioning, to suit our local conditions.

In order to keep the whole task, within the manageable limits, the author plans to carry out the observations and analysis, only for a few selected towns in the state of Uttar Pradesh; The author, further, hopes that such a task, when completed, would be a pace setter for undertaking similar work, converging on the broader field of operation and functioning, which could be applicable to urban communities of various kinds in whole of the country.

CHAPTER - I

DEVELOPMENT OF THE CONCEPTS OF 'CENTRAL BUSINESS DISTRICTS'

1.1 INTRODUCTION

'Central Business District' (CBD), which generally conforms with the 'core of a city' or the 'down-town area' as is known in United States, holds a strategic position in the city's economic, social and cultural life.¹ Survival or growth of the city is the consequence of its socio-economic and cultural activities, which are performed predominantly in the core. Thus, 'Central Business District' becomes a nucleus and a nerve centre of all these major activities which reflects the welfare and well-being of the city and its inhabitants, as a whole.

The principle central functions of CBD are trade and commerce, provision of professional services and specialists' skills; light manufacturing and service industries, governmental functions and entertainment and amusement facilities catering for the furtherance of social and cultural pursuits.² The peripheral functions pertain to the provisions of better class residential accommodation, office space for public organisations, providing ware-houses and godowns for storing goods and materials to reservice the CBD and city alike. These functions are performed through the different groupings of activities into specialized areas of CBD in large cities. These activities manifest themselves through

institutions like banking, insurance, trust companies, theatres, civil buildings, hotels, apartments, retail shops, departmental stores, and super markets etc. CBD's functions can be summed up as following:

"All prime downtown space (other than governmental) has been classified according to which of five major types of functions it serves: (1) retail (including some service); (2) financial and commercial; (3) convention and meeting; (4) entertainment; and (5) cultural."³

The concentration of all these activities, imparts a typical character to this area, which is traceable in the form of various factors like - intensive use of land, concentration of building volume, high population density, heavy vehicular and pedestrian traffic, and a high rate of growth of the overall area as such.⁴ When these activities exceed the discrete levels which can be accommodated advantageously within the area, the Central Business District gradually tends to turn into a nightmare, particularly, when there is no possibility of further lateral expansion of the area because of the abounding development around the CBD. It becomes highly susceptible to the hazards of fire and traffic. Servicing and accessibility become difficult if not totally impossible. Ultimately, the degeneration and blight begins to take its toll. Thus, to save it from turning into such a slum, it is necessary to take adequate measures to restore an equitable balance between the mounting congestion of expanding quantum of activities

and the facilities required for their efficient functioning.

The above facts leave no lacuna in assembling the drawn out result that the efficient functioning of, Central Business Districts, basically, depends on the co-relation and co-adjustment (to be carried out from time to time) of the various activities taking place in this area and the measures adopted to perform them, - which ultimately speaks of the concept of Central Business District. In order to, further, confirm this issue, it would be worthwhile to go into the details of the development of the concepts of Central Business District during the period ranging antiquity till the present era. This Chapter, thus, deals with the origin of the concept of Central Business Districts, which has been studied under the western context, bringing out various definitions of Central Business Districts, and after appraising similar areas under Indian context; finally, concludes in carrying out a comparative study of the western concept of Central Business Districts and Indian concept of similar areas.

1.2 CONCEPT OF 'CENTRAL BUSINESS DISTRICT' AS DEVELOPED IN THE WEST

The genesis of Central Business District, in the western history, can be traced back from the Greek era in 5th century BC. The Greek cities possessed, the central areas - known as 'Agora' or the market place which, originally was an open, rectangular or square space provided

for communal meetings, religious or political activities. This area, ultimately, became the centre of all the major urban activities.

"The Agora, or market place, was the centre of business and political life, and about it were lined the shops and market booths. Accessible from the Agora square, but not facing upon it, were assembly hall (ecclesi-asteron), council hall (bouleuterion), and council chamber (prytaneum).

The Agora was usually located in the approximate centre of the town plan, with the major east-west and north-south streets leading to it. It was designed to accommodate all the citizens who would have business in the market place or attend public functions in the adjacent public buildings. The open space enclosed by the Agora occupied about 5 percent of the city area, the dimensions being approximately one-fifth of the width and breadth of the town itself."⁵

The plan of 'Agora' was designed to ensure that the movement of people in the open space is not interfered by the people who have collected for the trade and business in the market place. The streets leading to the Agora, generally terminated here, rather than crossing it; thus the open space served as circulation area for the pedestrians. (Ref. Plate No.1, Fig. No. 1).

During the Roman period, ranging from 500 BC to 500 AD, the market places were known as Forums in the Roman city. It was observed that each new Forum exceeded in the size from the one that preceded it - the Forum of Augustus was greater than the Forum of Julius Ceaser; the Forum of Vespasian matched that of Augustus; and the

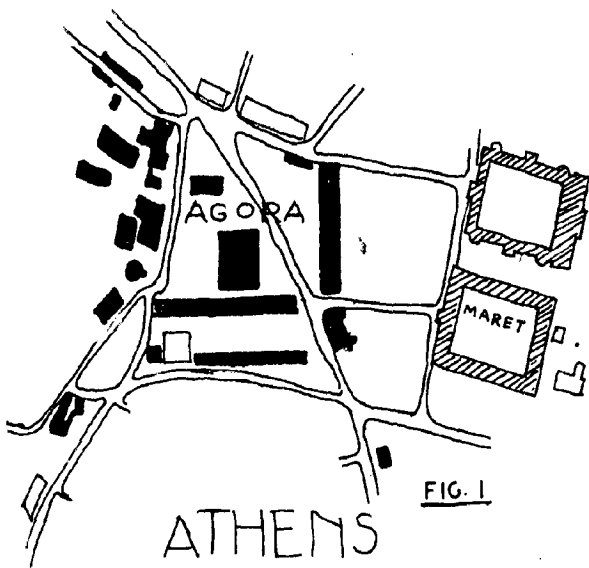


FIG. 1

ATHENS
THE AGORA AND ITS ENVIRONS
- GREEK

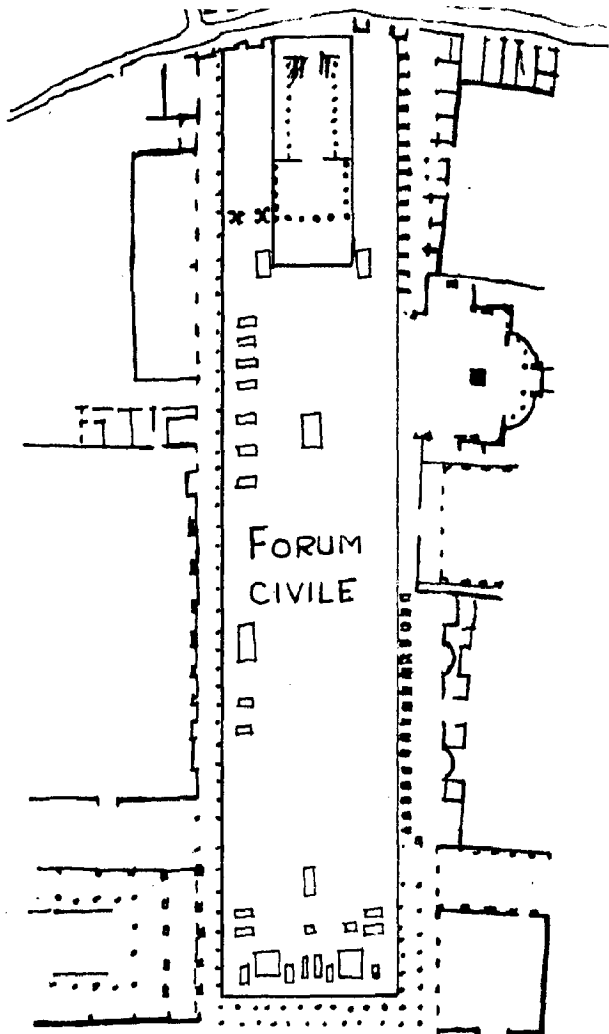


FIG. 2

POMPEII
THE CIVIC CENTER (FORUM) ROME

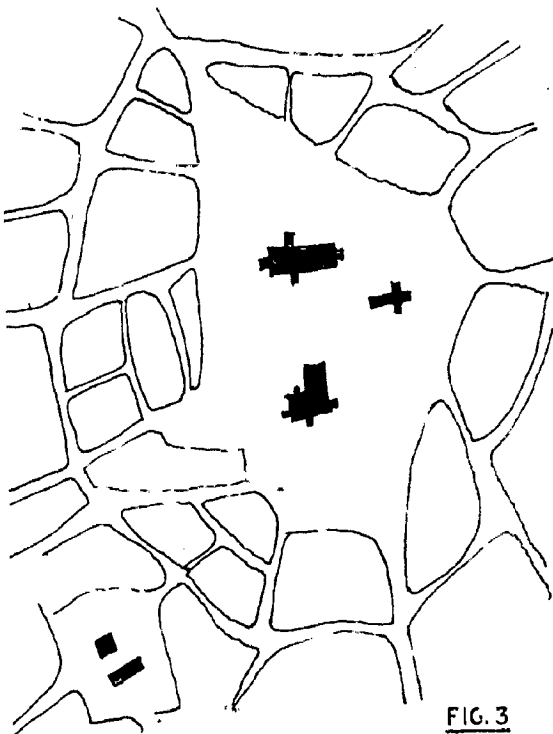


FIG. 3

NOERDLINGEN
MARKT SQUARE · MEDIAVAL

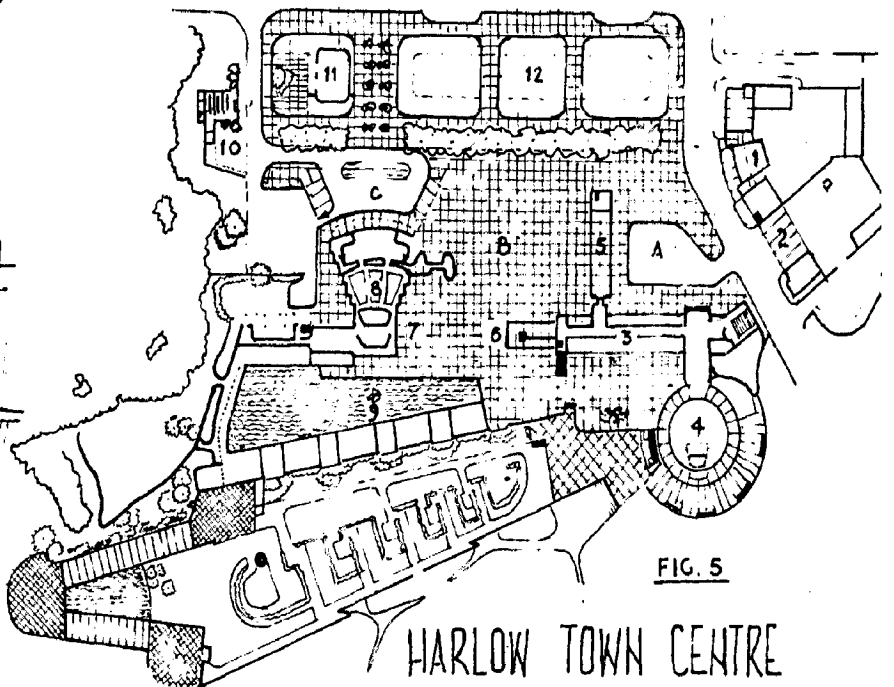


FIG. 5

HARLOW TOWN CENTRE

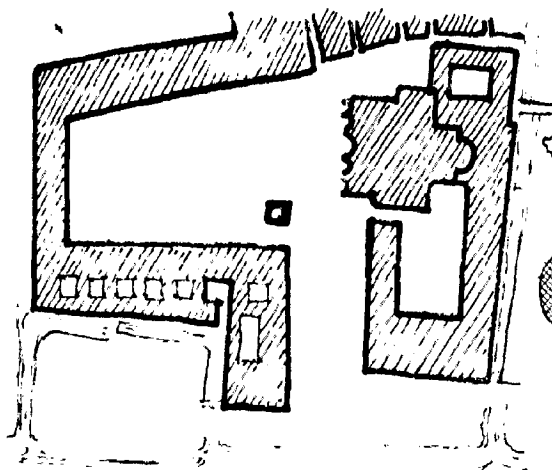


FIG. 4

PIAZZA ST. MARKS
MARKET PLACE · RENAISSANCE

KEY: A, ADMINISTRATION SQUARE; B, CIVIC SQUARE; C, THEATRE SQUARE;
1, POLICE STATION; 2, FIRE STATION; 3, COUNCIL SUITE; 4,
4, CIVIC HALL; 5, MUNICIPALE OFFICES; 6, MUSEUM & ART GALLERY;
7, RESTURANT, 8, THEATRE; 9, REFLECTION POOL; 10, CIVIC CHAPEL;
11, LIBRARY; 12, SHOW ROOM

Forum of Trajan was the most magnificent of all.⁶ To be more precise the early Roman period, although shows, that human scale was followed even in designing Forums but during the later Roman period, monumental scale displayed the hugeness in every sphere. (Ref. Plate! No.1 Fig. 2)

In the 11th century AD mediaeval period brought in a marked revival of trade and commerce. After the decline of Roman empire, barbaric rulers established city-estates, but they parcelled land amongst the land-lords who pledged military support for their kingdom. During the mediaeval period, the land-lords took over as rulers, thus setting in the era of feudal-lords and this new trend gave birth to different order to the society, which is known as feudal system. The economy, being rooted in agriculture, resulted in shooting up the land prices, which was advantageous to the feudal lords, being the owners of the land, too. The citizens were given certain rights and privileges, under this system, which enabled the merchants and craftsmen to form guild halls to strengthen their social and economic position, and in doing so, the wealthy merchant class posed a challenge to the feudal lords.

In the early Mediaeval towns, merchants chose the church plazas as market places and established guilds and town hall, adjacent to the market - plazas. The roads, generally, radiated from market squares or church plazas

to the gates of fortified walls, which provided easy accessibility from open country land to the market centre.⁷ (Ref. plate: No.1 Fig. 3)

During the Renaissance period (15th century AD), the merchants over-powered the feudal lords. The new rulers were interested in intellectual pursuits and they tried to introduce the classic Roman heritage, in that the city structure was well elaborated and decorated, but, the basic form of the city remained unchanged. On the parallel lines, the earlier mediaeval market-squares turned into formal market-plazas by giving it a monumental scale without altering its, earlier, basic functional fulfilment factor.⁸ (Ref. plate: No.1 Fig. 4)

The Industrial revolution in 18th century gave a new dimension to the urban structure which could be realised in large scale production and the changed methods of sale and purchase of goods. The scientific advancements lead to the evolution of automobiles and other types of heavy machinery, which resulted in complete overhauling of the techniques employed for production and the means of communication and transportation. Thus, the innovations in science and technology had a direct impact on the production of various goods by bringing in a tremendous increased output, which ultimately effected all the elements connected with the trade and commerce. The appreciable, increased rate of production, added with the new ways of carrying out exchanges, propounded the need

for obtaining larger space and a suitable disposition of the areas used for trade and commerce. The rapidly-changing, fast developing, era, further puts forth the requirements of - organising specialized services; skilled labour usage; better and sophisticated methods for controlling commercial transactions through organisations and institution like banks and insurance companies etc.; and the connected supplementary infra-structure. The changed set up, caused by the phenomenon of industrialisation, introduced the element of specialization in business and marketing systems, which now required, comparatively bigger floor spaces in an organised manner to fulfil the requirements of the city. In the beginning, these demands were met with, by connecting such areas with larger spaces, lying vacant somewhere in the vicinity of the existing market places. Even, such an arrangement could not cope up with the fast growing demands of industrialised era - firstly, the land, being a fixed natural commodity lacks flexibility, and could not be produced to an extent of meeting its mass requirement, and secondly, the earlier settlements did not cater for the present type of unlimited growth requirements. A further increase in the need of such amenities and provisions called for the renewal of the 'trade and commerce' areas, which brought in the fresh concept of such areas and were called by the name of "Central Business Districts". These transitional effects were, not only, seen on the physical disposition of Central Business Districts but

its impact brought in the additional changes in shooting up the land values, higher intensities of population and buildings, problems of providing safe and easy accessibility to this area from the rest of the areas of the city and its hinterland.⁹ (Ref. Plate: No.1 Fig.5)

Thus, it is reasonable to conclude that "Central Business Districts" occupied a commanding location in a city to control its majority of economic, social and cultural activities, which were subsequently and gradually added with recreational and other institutional activities to impart to it, the present form of its concept. The present concept of Central Business Districts establishes it as a special entity by itself in a city as exemplified by Harlow's new town centre,¹⁰ (Ref. Plate: No. 1) Central Business District in Brevard in Philadelphia,¹¹ and Central Business Districts of Washington, Detroit and Los Angeles.¹²

1.2.1 Definitions of 'Central Business District'

It has been stated earlier that, over a period of time, 'Central Business District' tends to change in its size and character, and consequently in its function. Because of its transitional character, it is difficult to define 'Central Business District' in a precise manner. A definition which would embody, both, its functional elements and character which are constantly in flux. Central Business District, being the focal point and nucleus of the socio-economic and cultural activities, evokes interest of

expertise in a variety of complementary disciplines. Although, the interest, basically, lies in achieving maximum functional efficiency in the case of each one of the fields of expertise, yet, the emphasis to achieve the common goal vary to a great extent. These distinctions, in emphasis, can be observed clearly through the different interpretations brought forward by them; - the sociologists emphasize the social content of the 'Central Business District' and consider it primarily a gathering place for people who congregate in the C.B.D. area for fulfilling their basic gregarious urges for social intercourse; the economists stress the role of C.B.D. as an area meant for commercial transactions of goods and services; and the planners hold their independent argument in emphasizing this area, as the generator of all directive activities of a city, which also, serves as an indicator of the character and culture of the city, through the spatial distribution pattern of those (directive) activities. The following quoted definitions by various authors, further clarifies distinctions pointed out above :-

(a) Definition given by Murphy and Vance (Economists)

"An area whose essential functions appeared to be retailing of goods and services for a profit and performing various functions." It is further added to be - "An area where there is a high concentration of economic activities and high density and the space intensively used for retail trade, offices and services."¹³

- (b) Brevard (another Economist), in his report on "Central Business District" defines it, briefly as -

"A centre of a community's commercial activities".

Brevard, goes further to explain that CBD. i.e. the central commercial core, is in fact a combination of the below mentioned functions, under which the Central Business District serves the -

- (i) shoppers as a retail centre
- (ii) merchants as a way of life
- (iii) whole-sellers as an outlet of bulk production
- (iv) professionals as a place for conducting business transaction of intangible nature
- (v) recreationalist as a focal point for entertainment
- (vi) city authorities as a largest single source of revenue.

- (c) Nelson puts the definition as :-

"Central Business District is basically a group of stores, functionally not different from those of ancient market places or bazars."¹⁴

- (d) Collins and Jones refer it as a trade or catchment area which is defined to be :-

"An area of influence from which a shopping centre could expect to derive 80% to 90% of its total sale value."¹⁵

(e) Geographers define CBD as :-

"An area of a city where retailing of goods and services and performance of various office activities for private profits are completely dominant. These uses are increasingly found in other areas of city but not at the same level of intensity and not occupying the extensive compact area found at centre."

The above definitions reflect that none of them could precisely and comprehensively, enclose all the functions and activities being performed through the Central Business District. To bring it above board, the general characteristics of Central Business Districts can be summed up as below :-

- (i) Economically, it is a place where goods and services of all kinds come into transactions. Also, it is a major place of trade and commerce in a city and compared to the other areas, Central Business District, individually, fetches the maximum revenue.
- (ii) Socially, it is a meeting place, where social interaction takes place, cultural heritage is brought out and depicted, and the recreation activities are performed.
- (iii) Physically, the area is the busiest sight in whole of the city, with intensive mixed landuses, concentration of building bulk and maximum pedestrian and

vehicular traffic. The area possesses comparatively very high population density and generally costliest land values.

1.3 CENTRAL BUSINESS AREAS IN INDIA (A general appraisal)

The origin of market places in the West, in the form of Greek Agora and its various stages of changes to obtain the present concept of CBD (as per para 1.2), establishes the importance of trade and commerce in relation to the growth of a city. It also reveals the sequential development of the concept. But in India, a dark period, from Indian Civilization to vedic period and further from mediaeval to Moghul period, discontinues the trace of markets from ancient Indus civilization to the existing pattern of the markets; still efforts have been made to find out certain linkages through the recorded periods known to us.¹⁶

Dating back to 3000 B.C., the early river valley civilization, the city of Mohenjodaro, essentially a commercial oriented town, of historical importance, contained many colorful strips of bazars throughout the town-fabric.¹⁷ The scale of the street was purely pedestrian, and the orientation of activities' performances was designed on the basis of human scale. Through the dark period, a new city form emerged in vedic period, which differed completely from the existing form of the city. As the Vedic cities did not suffer from any bearings of Mohenjodaro's city - plan as such, there are no evidences of any transitional stage in

between. The bazars of the cities in Vedic period, thus can not be compared with the bazars of Mohenjodaro (Ref. Plate: No.2 Fig. 1)

In 6th to 17th Century A.D. Mansara Prastra mentions about the existence of the cities of Srirangam and Jaipur. Srirangam is an ancient city situated in South on the bank of river Kaveri. It was a religious centre, which attracted pilgrims from all over the country. The city also possessed the educational amenity provision to raise its importance still further. The town had been developing around the existing temple in the area and later the markets were located within the premises of the temple. It gained a special significance, as the temple became a common gathering place for visitors from out-side as well as the citizens themselves.¹⁸ (Ref. Plate: No.2 Fig. 2) The pedestrian scale was still dominating in the planning of their cities, but the locations of towns like Jaipur, and Jaisalmer, being in the desert area, bazars were designed to suit the desert requirements, basically depending on the means of conveyance i.e. Camel. (Ref. Plate: No.3 Fig. 1,2). The towns which used to give shelter to the "Carvan", the bazars of such towns were used as "market" places by the traders.¹⁹ Thus trade started to develop at a very fast rate at the "transportation" nodal points. Jaisalmer is one of the examples of such towns. (Ref. Plate: No. 3 Fig. 2)

Sawai Raja Jaisingh brought definite modifications over pattern of cities like Jaiselmer planned by the mediaeval ancestors. In that, once again the bazars started accommodating the "chariots" and "horse-carts". The changed seemed necessary in the princely estates of this era had a marked increase in its population as well as the size of the city, and consequently bazars also increased in its area of influence. Though the size of bazar increased, yet, there was hardly any change in its appearance or location to the total city form; as compared to the earlier period. However, there was considerable change observed, in the scale of its operation. The need of population in and around the city, dictated a definite disposition of bazars, in its concept, as well as in its integral part of the city plan. Thus, Jaipur shows conscious efforts to integrate Human life with city - activity and time distance with area scale.²⁰

The Moghul period, surviving for nearly two hundred years in India added a new element to the Indian trade and commerce. The Moghuls were full of many fresh ideas and were luxurious in nature. The Moghuls built many new towns, specially the cities as the stable seats of their kingdoms. This trend was impregnated in bazars also.²¹ The example of such trends is presented by Shah-jahanabad, which was reinforced by its elements of Red-fort area, which had beautiful axis connecting Diwan-i-Khas to

Diwan-i-Am and further to Chandani Chowk by means of traditional water channel, with fountains, culminating at Chandani Chowk. Gradually, Chandni Chowk became a confined market area. (Ref. Plate No.4 Fig. 1,2)

Right from the dawn of Indian civilization, Indian bazars tend to relate various important changes in their structure, and to some extent in their appearance. But the considerable changes are not evident in their functions to locations. The retrospective study of Indian Markets give a fair idea about the factors which were involved in originating the new towns and market places. These factors were mostly responsible because of their sociological, religious, political or economic conditions and in certain cases, even geographical situation also played an important part in building new towns. The factors, which are responsible for the location of markets, are further discussed in details, in the following paragraph.

1.3.1 Factors Affecting Location of Bazars in Indian Towns

The extreme physical diversities and vastness of the country, did not allow the rulers in India, to build a sovereign-kingdom like 'Roman Empire', resulting in the formation of smaller kingdoms. The smaller kingdoms, thus formed, had their own typical types of customs, and all other walks of life, which differed from each other to a very great extent. The impact of these diversities is not only observed in the social, political and religious

spheres of these small kingdoms but it, equally, effected the physical aspects of locating the various areas to carry out the specific activities in those spheres. Market places, too, were thus effected by this phenomenon as the towns, possessing these had also undergone a similar procedure.

The overall effects on the location of Indian market areas can be studied under the major heads of demands and supply of goods, accessibility and social & religious factors as given below :-

1.3.1.1 Demand and Supply of Goods

Taking into view, the geographical set up of the whole country and its rivers as the only means of supply routes, it is evident that the country stands divided into two distinct parts - (i) Northern and (ii) Southern part. These two parts of the country remained separate entities, from this angle, for quite a long time in the antiquity, which probably ranges upto Moghul period. The market area locations were guided by the fact that the supply of goods can only be received from the areas which are connected by the rivers. The demand of goods depended mainly on the social status and living standard of the people during various eras. India, since the days of river valley civilization in 3000 B.C., underwent change in different empires and their rulers, which effected the general public in maintaining their social status which ultimately decided their demands. The tastes of the rulers was another

and other religious buildings. Thus, it becomes above board that the factors effecting the locations of market places, were similar to the factors responsible for the development of towns. In fact, the market places which were attracted to be located in the vicinity of the areas having either social, religious or economic significance, further attracted the people to settle closeby to result in the development of various towns. This brings us to the conclusion that the towns grew in a particular location due to some or other basic function, the area performed even before its development. Based on the above derived fact and visualising the present functional behaviour of the existing towns, it can be seen that all the Indian towns can be classified in three types, viz (a) commercial or market towns, (b) Religious towns & (c) Capital towns.

1.4.1 Commercial or Market Towns

The junctions of the major routes become the place for barter and gradually it become a business centre for the surrounding regions and the city grew along the roads diverging from the business centre in a concentric manner. Small scale industries developed closer to the business centre. The earlier market places developed in a definite form of bazars, which agglomerated certain activities like residential, social, political and recreational etc. along with them and ultimately grew into big 'commercial centres'. The examples of these towns are Jaipur, Jaisalmer, Nagpur Bareli etc.²⁵

1.4.2 Religious Towns

All the religious towns have developed along the banks of the sacred rivers. The temple being the focus of town, the markets grew around them with a radial roads pattern. Later on these towns prospered in all fields because of their fertile soil, easy means of communication (being located on river banks) and gradually became business, and even industrial centres for the surrounding regions. The examples are Banaras, Hardwar, Allahabad, Gaya, Mathura, & Shrirangam etc.²⁶

1.4.3. Capital Towns

The Capital towns were originally the seats of court or capitals of the kingdoms of ancient rulers. The markets in capitals are established in hierarchy. The main market or trade were at national, regional and local levels. These markets acquired importance of big centres of trades and industries. The examples are Delhi, Agra, Lucknow etc.²⁷

1.5 IMPACT OF NATURE OF TOWNS ON CENTRAL BUSINESS AREAS

The three distinct types of Indian towns brought out under para 1.4 above, are basically possessing the particular nature due to the original feature which, in the beginning of the town's development, had attracted the market places to grow around it. This feature might have been either temple/religiously significant place, seat of court/administration or a junction on the major route of communication; but this is very evident by now that these

became the focal points for the market places which grew to develop the large area around into a town. The town, after growing up, possessed the same nature because the feature and market areas, too grew along with it. The nature of towns effected the market places to develop into still larger areas with the original growth orientation. Thus religious town effects its central Business Area to equip itself for fulfilling the demands of pilgrims. Also, it is allowed to grow in the 'movement - direction' of the visitors. Similarly the commercial town effects its Central Business area to maintain a hierarchy for the whole-sale and retail supply/purchase of the traders (both outsiders and local). The administrative town allows its Central Business area to - (i) equip itself with all types of requirements of the administrators, (ii) maintain highest hierarchy in the state/country & (iii) develop in planned concentrated pattern growth for the sake of exercising control.

These effects have not been realised by the western Central Business Districts, in similar way, which leads us to think that they may be based on different concepts altogether as compared to the Indian Central Business areas.

1.6 C.B.A. IN INDIA vis-a-vis C.B.D. IN WEST

So far studied "commercial area" of western cities as well as of Indian towns, from the perspective of its origin, function and structure brings out the results which

show a clear distinction between the two. Further, an attempt is made to distinguish these, to bring out the details.

The Central Business District in the West possesses the following typical features :-

- (a) It is observed that the original concept of Agora (or market plazas surrounded by public buildings) is still being adopted in the modern Central Business Districts, with necessary modifications and alterations.
- (b) C.B.D. shows distinct demarcation of its area within the city area.
- (c) C.B.D. is having mixed land-uses, but the use areas are well organized and planned within the delineated area.
- (d) Though the residential areas are also found in the C.B.D., the residences are of the kind of high rental enterprises.
- (e) The functional hierarchy of business centre is observed in the city.
- (f) C.B.D. has separate entity by itself in the city.
- (g) C.B.D. usually is found, almost in the centre of city area.

In contrast with the western C.B.D., the business centres of Indian towns possess, much different features as given below :-

- (a) The business centres have developed around the focal point of religious or historical importance; or they are developed along the established transportation - routes in a linear form, having shops, usually, on both sides of roads.
- (b) The business areas are merged with the other areas of city. They do not have separate entity by themselves. The definite delineation of the business area within the city area is not possible.
- (c) Town lacks functional hierarchy of business areas. In many Indian towns, more than one central business areas are found.
- (d) The business areas in Indian towns have thoroughly mixed land-uses, generally possessing residential, commercial, administrative, Industrial etc. The business area may comprise sometimes with both conforming and non-conforming land-uses.
- (e) In the central business area, where the land value is highest, low-rental residential areas have occupied the land. Whole-sale and retail shops are found to-gather. Commercial offices are located adjacent to the public buildings.

The above differentiation between business areas in India and in the west reveals that nevertheless, the function and structure of business areas is same, they differ in their locational aspect, appearance (i.e. character) and their physical disposition. Hence it would be more appropriate to call business areas of highest hierarchy in India as "Central Business Areas" (C.B.A.) rather than "Central Business Districts" called in the west.

state.

2.6.1 Strategy For Selection of Towns

Commerce and Trade factor in a particular area represents its overall prosperity and flourishing. Thus to study and compare the Central Business Districts of various towns, it would be logical to select, well developed and progressing towns, which may project a wider scope for probing, to deduce results with reasonable accuracy.

Apart from the above factor, the strategy of selection lies in the fact that all the developed towns, in Uttar Pradesh state, are found in the Indo-Gangetic plains. It, therefore, becomes imperative to select the towns like Lucknow, Varanasi, Allahabad and Kanpur etc., which fulfil the requirements of being large progressive towns, as well as they are located on the banks of river Ganges on its tributaries.

2.6.2 Chosen Basis for Selection of Towns for the Study

To sum up the whole selection criteria for choosing the towns for our study, the basic factors taken into consideration, are based on the various limitations and restraints imposed, selecting towns from a homogeneous area, and a particular category of towns classification required to be picked up, etc.etc. (as given in the preceding paragraphs). Apart from these factors, the following basis have also been considered to create further interest in the study:-

The above differentiation between business areas in India and in the west reveals that nevertheless, the function and structure of business areas is same, they differ in their locational aspect, appearance (i.e. character) and their physical disposition. Hence it would be more appropriate to call business areas of highest hierarchy in India as "Central Business Areas" (C.B.A.) rather than "Central Business Districts" called in the west.

CHAPTER - IITHE UNIVERSE**2.1 GENERAL**

The preceding chapter gave a general picture of the development of the concepts of Central Business District in the West, and attempts to compare its salient features with the various elements of Indian Business areas; finally it concludes in bringing out that it would be worthwhile checking the Central Business District concept's viability in Indian context for its adoption in the development or redevelopment of our cities and towns. This task may include - the detailed study of Indian cities with respect to their Central Business Areas, the socio-economic and cultural status of the inhabitants of those cities, the internal structure of Central Business areas and their hierarchy on the city level; it may further be required to check the suitability of adopting a western Central Business District in an Indian city, and if found unsuitable, to check the same with certain assumed modifications (using various permutations and combinations) etc. The vastness of the work, stated above, renders it rather impossible to achieve the desired goal, single handedly and with the limited time available for carrying out the detailed study. Thus, it would be logical and desirable to narrow down the field of work, by forming practical and achievable objectives and restricting the scope of study to manageable limits. Although, it would be most proper to

carry out the total study to result into certain concrete suggestions for adopting them straight-away for planning of business areas in our cities, yet, the actual study is required to be confined to workable areas, due to the following limitations and restraints.

2.2 LIMITATIONS

India possesses a variety of people, differing to a great extent in their socio-economic, cultural and religious behaviours. It would, thus, not be possible to study the cities and their business areas at the total country level; but the most desirable way out would be, to pick up a particular part of the country having certain common features, to carry out the comparative study. Thus a limitation is imposed in selecting a particular region, possessing homogeneous nature to a fair extent, to enable comparison of the business areas characteristics of different cities. The state of Uttar Pradesh which, individually, forms the major portion of India, has been selected for studying its cities with respect to their Central Business Areas.

Also, as it is not possible to carry out any primary surveys, at any level, to get the first hand informations regarding the present state of Business Areas in Indian cities, the study is limited to the availability of the secondary data, which is collected from various published and unpublished documents of the various organisations, already engaged in carrying out team work in these

fields. This limitation is further, effecting the study in the sense that the final results might be little biased because the information collected from the available sources would certainly be having different intentions and objectives, than the ones which have been set-forth for the purpose of this study.

2.3 THE MAIN RESTRAINTS

The major restraints in carrying out the comprehensive study on checking the viability of the Western concept of Central Business Districts in Indian context are as follows :-

- (a) Approach towards Drafting Master Plans - Planners responsible for drafting Master Plans for different towns in Uttar Pradesh vary to a considerable extent; which makes it, almost, impossible to compare and deduce correlation matrices for comparative analysis pertaining to area, population, and functional adequacy of any integral part of the city's structure.
- (b) Variations due to the Time Lag of Conducting Primary Surveys - The surveys conducted for preparation of Master Plans have been carried out at different periods for different cities, which sometimes show a time gap of more than a decade. During this fast progressing era, it may make a lot of difference in acquiring the final

results. This built-in inaccuracy in the comparison plan is liable to tilt the obvious trends to certain extent.

(c) **Lack of Information Regarding Hierarchy in Business Areas -** So far, no study has been carried out to analyse the cause and effect relationship of hierarchy of Business Areas in our cities, in comparison to similar studies undertaken in the West. It is the suspicion of the author that, perhaps, no such hierarchy may be existing in the Business Areas of our cities. Nevertheless, this is not a fair cause for not undertaking systematic analytical studies of the same. This is particularly essential and desirable when we know that we have a weakness to impose the concept of hierarchical institutional system of Central Business Districts and sub-Business Districts in the West. It is fair to assume that undertaking of such an analytical study would be of immense interest to both, planners and the planning profession, alike, even though the study may be a modest beginning in this direction.

(d) **Internal Structure of Central Business Areas -** The internal structure for any Central Business Area has not been worked out yet, to enable us to use this information for carrying out our study. Most of the Master Plans available do not

have enough information, particularly on the desired scale, where, for example, one can identify use percentages and use intensities etc. The visual survey, carried out by the author, depicts that in general, Indian cities, except the metropolitan cities contain the commercial offices, mostly attached with other public or semi-public buildings rather than amongst the trade and commerce centres. Indirectly this means that the tool had not so far been subservient to relate each other. Thereby, it becomes a tricky problem to isolate between the figures of commercial land-uses in including commercial offices, somewhere, and excluding commercial offices in other situations. The data base seems to be ambiguous on several such points.

- (e) **Non-Availability of Master Plans -** Most of the Master Plans of medium and large sized towns, in Uttar Pradesh, are still in the process of preparation and though some of them have reached the drafting stage, yet they are not published to be made available for any further analysis by those scholars who are interested in the kind of work envisaged.
- (f) **Lack of Ready Reference Statistical Data -** Voluminous census reports occupy quite a huge space, and so far there has not been any system, evolved, for

stacking of census reports to be made available for ready references. This fact, makes it almost impossible, to collect the census data for the earlier decades, particularly on matters relevant to the presently desired work.

2.4 OBJECTIVES OF THE STUDY

Keeping in view, the above limitations and restraints, the objectives of the study enumerated below :-

To evolve a pragmatic methodology to study the Central Business Areas in the selected Uttar Pradesh towns, to arrive at possible futuristic trends. Efforts have been made to analyse the situation with the interest to notice at first, if any hierarchy exists in the set up and secondly the importance of Central Business Areas is compared with the other functional areas of the city with the scale of area and population matrix.

2.5 THE SCOPE OF THE STUDY

It would not be possible to study all the Uttar Pradesh towns, for the purposes of this report, and thus only a selected number of towns have been studied, for which, initially, the required information is available and in addition, they fulfil the subsequent tier of causes, laid down in the paras 2.6, 2.7 & 2.8. For the purposes of this report, the scope of study is limited to :-

- (a) Identification of Central Business Areas in the selected U.P. towns.
- (b) Make an effort to correlate population and area base with the functioning of Central Business areas.
- (c) To ascertain the growth possibilities of Central Business District areas in U.P. towns, which are largely dependent on available comparable figures.
- (d) To formulate a methodology to study the adaptation of the concept of Central Business District in our towns using U.P.'s case as an analogy. This will be done within the limitations imposed due to the inadequacy of available data.

2.6 RATIONALE FOR SELECTION OF TOWNS

There has been traditional controversy, between the authors, over the classification of cities. The different methods adopted by them are, on the basis of, (i) area units, (ii) intensity of development, (iii) the employment magnitudes, and (iv) the demographic base. Though, the location factor of a town or a city remains constant, yet, the climatic constraints, economic factors, various means of transportation and communication employed, and the type of regional linkages provided, may vary to form an unlimited number of permutations and combinations; which renders it difficult to classify them in a precise and comprehensive manner. To avoid any sort of ambiguity, it is, thought, advisable to select the class I cities of Uttar Pradesh State, which will cover the majority of the general conditions prevailing all over the cities of this

state.

2.6.1 Strategy For Selection of Towns

Commerce and Trade factor in a particular area represents its overall prosperity and flourishing. Thus to study and compare the Central Business Districts of various towns, it would be logical to select, well developed and progressing towns, which may project a wider scope for probing, to deduce results with reasonable accuracy.

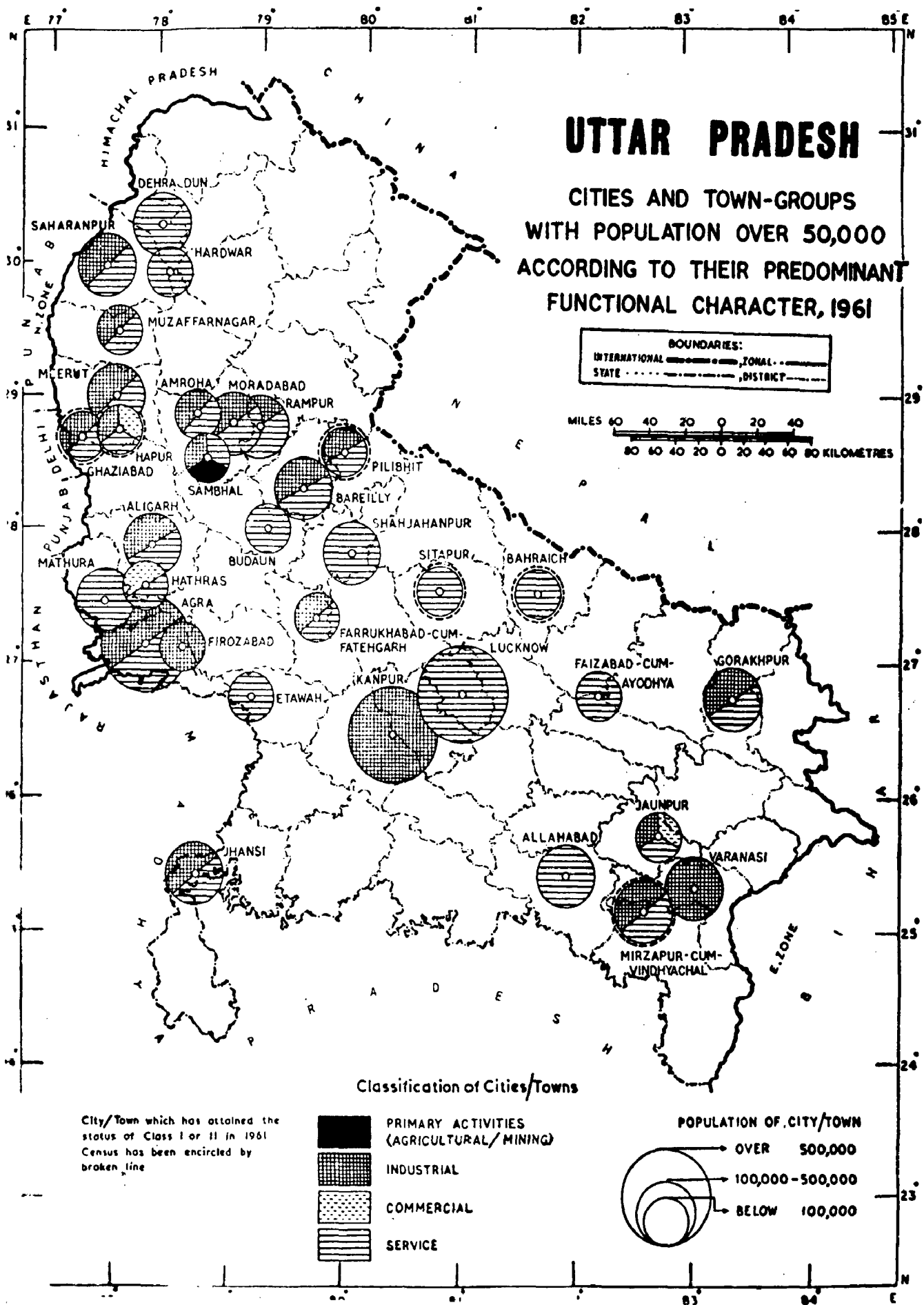
Apart from the above factor, the strategy of selection lies in the fact that all the developed towns, in Uttar Pradesh state, are found in the Indo-Gangetic plains. It, therefore, becomes imperative to select the towns like Lucknow, Varanasi, Allahabad and Kanpur etc., which fulfil the requirements of being large progressive towns, as well as they are located on the banks of river Ganges on its tributaries.

2.6.2 Chosen Basis for Selection of Towns for the Study

To sum up the whole selection criteria for choosing the towns for our study, the basic factors taken into consideration, are based on the various limitations and restraints imposed, selecting towns from a homogeneous area, and a particular category of towns classification required to be picked up, etc.etc. (as given in the preceding paragraphs). Apart from these factors, the following basis have also been considered to create further interest in the study:-

- (a) The availability of dependable documentary work in the precise frame work of Master Plans of the towns chosen for study.
- (b) As the cities having population range above four lakhs, are normally found to crave a kind of justification in their commercial network, it would be desirable to carry out detailed study on such cities. Thus the important cities having four to five lakh population were picked up for this study.
- (c) The function of cities beyond 4 to 5 lakhs population is also the point of interest to the planners when it is related to its commercial outfit. Therefore one administrative town (Lucknow), one industrial town (Kanpur), one commercial town (Allahabad) and one religious town (Varanasi) have been chosen for the study.
- (d) The terrain on which the cities are located is also an important factor while evaluating the specific part of organic city structure. If a city is located in hills, whatever may be the population or locational advantage, the CBD areas in such cities shall differ in quality and quantity when compared with any other city or town located either in plains or valleys. Therefore choosing the towns, strategically, the locational aspect has been taken into account so that all the selected towns may have similar locational advantages or disadvantages

to start with. This point is further magnified with the adequate transportation network provisions, and by ensuring that almost all the chosen cities have been growing in the same transportation age.



CHAPTER - III

GENERAL DESCRIPTION AND FACTUAL DATA OF THE SELECTED TOWNS FOR THE STUDY

P A R T - I

GENERAL DESCRIPTION OF THE TOWNS

3.1 INTRODUCTION

Uttar Pradesh is a land locked state situated in the middle of the northern part of the country, which justifies its ancient name "Madhya Pradesh". The State ranks first, in bearing maximum population of the country, individually. It's urban population has increased by 76% within 60 years. This urban population is unevenly distributed all over the state. The degree of urbanization increases from East to West, in general, and the existence of a few well marked belts of urban concentration is noteworthy.²⁸ There are total of 164 towns, out of which 12 towns are from Class I, 14 from Class II, 35 from Class III, 55 from Class IV and 48 from Class V.²⁹ (Ref. Plate No. 5A) Sensus report shows that western part of the state is, comparatively more organized. The unique feature is that, though this part is urbanized to considerable extent, yet the general economy of this area is agricultural, as in other parts. Most of the towns and cities in the region are multi-functional. There are interesting variations in the morphology of towns due to size and functional variations.³⁰

The state economy is dominated by agriculture and it is famous for cottage and small scale industries. Handicrafts have traditional international market.³¹ Kanpur has become the largest industrial town in the state. Kanpur, Lucknow, Allahabad, Bareilly, Meerut are the prominent Class I towns. Out of these four towns the first four towns i.e. Kanpur, Lucknow, Allahabad, and Varanasi have been selected for the case studies. (Ref. Chapter III).

3.2 CASE STUDY I - ALLAHABAD

3.2.1 Historical Background

Allahabad, as it stands to-day, occupies the site of ancient city of "Prayag" which has trace from Vedic time. Allahabad is a religious centre of Hindus situated at Triveni, whose great influx of pilgrimage is attracted from all over the country. The "Sangam" of three rivers, Ganges, Yamuna, and Saraswati (which is now dried) in a unique fashion, and the state of Hindu religion, were involved in the origin of Prayag (Allahabad)³².

In 1557 Akbar resettled the city as imperial city in the place of Jaunpur. The city was provided with flood controlling means to avoid havoecs. The city started growing beyond the Fort of Akabar, mostly where-ever the high grounds existed in the city. In 18th century, city's growth slowed down to a great extent. Later, the British rulers contributed in the continuous development and growth of the town. In 1883, the city became the capital of North-West provinces of India.

Growth of City - In 1818 Area of city was about 10.6 sq. miles, in 1863 Area became 20 sq.miles and in 1870 the same was increased to 22.4 sq.miles.

Towards the close of 19th century, the city came to possess almost the present outline, after the emergence of civil station and new cantonment and abolition of south cantonment. Allahabad, presently has become one of the major educational centres of U.P.³³

3.2.2 Regional Co-Ordinations

Allahabad occupies strategic position in northern India, in the centre of Ganga-plain. Allahabad region is surrounded by two geographical regions; on its north side is fertile plain region, and on south is forest clad of hilly track.

Allahabad being religious town of importance in the whole country, has been linked with all big cities of the country like Bombay, Madras, Calcutta, Delhi etc. The city has been connected to the capitals of this provinces by G.T. roads and broad guage rail line. Bridges exist over rivers, Ganges and Yamuna, to connect cities of Kanpur and Mirzapur. The rail link with Calcutta is being established by constructing a bridge over river Yamuna.³⁴

3.2.3 Locational Co-Relations

Population of Allahabad has registered an increase of 27% in 1951 and 65% in 1961 over the population of 1941

having reached 430730 in 1961. The future development of population, estimated for 1991, is 12.97 lakhs. The three rivers have restricted the growth of town except towards west upto Barurauli, Naini, Jhansi & Phaphamau across rivers Ganga and Yamuna. The process of the replacement of large cultivated land by built up area commenced in the last quarter of 19th century and continued till present century.³⁵

The development of business industry, particularly printing press, and provision of public utility and services accelerated the growth of the urban area. Improvement trust, established in 1921, executed a number of road widening, parks and housing schemes. New colonies developed with the siting of air-port at Bamrauli. Thus, Allahabad became centre of transport, too.

3.2.4 General Characteristic of the Town

3.2.4.1 Physical Characteristics

The post-independence period is mainly characterised by the following new developments :-

- (a) addition of new residential areas
- (b) ribbon development of G.T.road
- (c) incorporation of new areas and birth of city corporation; consequently, increase in the overall built up area.

In the beginning of 19th century, Allahabad was a small town, which is now represented by Katra-colonelganj

and Daraganj, separated by agricultural belt. The present civil lines became the centrifugal tendency of urban growth. Thus, the available space towards northern and being utilized for developing new townships; while centripetal forces were active in modifying the city's control parts, where city's centralized services like business, transport, administration, education, were being performed. These activities were developing vertically as well as horizontally. The present municipal market (Subzi mandi and chowk) were built in 1873, which is, presently, known as Laloggi in the heart of chowk.³⁶

3.2.4.2 Socio-Cultural and Economical Characteristics

Allahabad district includes (i) Allahabad municipal Corporation area, (ii) Subderganj & (iii) Allahabad cantonment, which form the Allahabad towngroup, and the areas of Man Aima and Phulpur.

Population figures show, that the population continued to grow in upward direction from 1965, at the rate of about 65%. An appreciable amount of progress, in the 'means of communication', and in general conditions of the city in industrial and commercial sectors, were responsible for the growth of population. The following table shows that the growth of population of city since 1921. Growth of population was characterised by-first, slow growth, then by steep rise and again by marked slowing down rate. The main reasons of population growth of the city were (i) urbanization, (ii) educational facilities in Allahabad, being

educational and cultural centre of the U.P. State,
 (iii) Development of industries and commerce due to world
 war, & (iv) Migration after partition.

PERCENTAGE POPULATION VARIATION³⁷

Census year	Population	%age of variation
1901	172032	-
1911	171697	0.2
1921	157220	8.4
1931	183914	17.6
1941	260630	41.7
1951	332295	27.5
1961	430730	29.6

Age distribution of the city's population, according to census 1961 shows, that majority of young and middle-aged groups of 15 to 34 years constitutes the existing labour force of the city. Such a state as above forces to envisage rapid natural increase in the population of the city. Civil condition indicates the housing problem and social conditions of the community enable one to study the housing problems present and future and also the question of the types of houses suitable for single or family members.

Allahabad was a city of great learning in ancient times. According to census of 1961 48% of population of city was literate. The progress of literary has been

fairly good since 1911, as per table given below:

PERCENTAGE OF LITERACY³⁸

Sensus Years	%age of literacy out of total population
1911	13
1921	20
1931	25
1941	41
1951	42
1961	48

following
The/table shows the distribution of working force in broad sectors of economy in the city, of Allahabad.

PERCENTAGE DISTRIBUTION OF WORKING FORCE IN BROAD SECTORS OF ECONOMY IN ALLAHABAD CITY³⁹

Sectors	P E R C E N T A G E I N		
	1921	1951	1961
1- Primary	9.36	4.0	3.72
2- Secondary	14.6	23.26	24.87
3- Tertiary	16.0	72.7	71.7
4- Trade&Commerce	14.8	18.3	16.8
5- Transport & communication	7.32	10.89	17.77
6- Other services	53.90	43.53	42.36

Compared with 1961 position it will be seen that in 1991 there will be considerable increase in the number of workers employed in house-hold and manufacturing industries. The increase envisaged in ratio of employment of this sector is from 21% (1961) to 30% (1991). This shows the industrial bias making it an industrial city.

3.3 CASE STUDY II - KANPUR CITY

3.3.1 Historical Background

Origin of Kanpur is traced back from the period of Mahabharata. The original town Karanpur came to be known as Kanpur. In 18th century Kanpur started getting momentum in trade and commerce activities. The advantageous location along the bank of Ganga and net work of important road connections, together with favourable circumstances created under the administration of the British, attracted trade from all directions, and merchants started pouring into the city. The British established Army camp in this city, which initiated few industries, meeting the needs of the Army. Grant Trunk road, Kanpur-Kaipi road, and Ganges canal increased the trade and commerce in town. Thus the city grew and gained industrial potentialities after 1857, and ever-since that period the industrial activity of Kanpur was being increased by leaps and bounds, and to-day, Kanpur is one of the biggest industrial cities of the country.⁴⁰

3.3.2 Regional Co-Ordinations

Emergence of Kanpur is due to the locational advantage. The city happens to be situated in the pivotal place, commanding the vast agricultural lands which has got tremendous potentialities to sustain many flourishing agro-based industries.

The total region possesses an indentifiable socio-economic and geographical conditions and is self supporting to a fair extent.⁴¹

3.3.3 Locational Co-Relations

The main city is enclosed by cantonment on three sides, and city's expansion is possible only in one direction i.e. in triangular space enclosed by Ganga canal in the east. The railway line crosses through the heart of the city.

3.3.4 General Characteristics of the Town

3.3.4.1 Physical Characteristics

The city, proper, is crowded and some of the old built-up areas have been developed into virtual slums. The Mall is an old market, serving the city as well as the cantonments. Kanpur has become important centre of advanced education including technical studies.

3.3.4.2 Socio-Cultural & Economic Characteristics

The population trend of the city of Kanpur illustrates, that during the period 1901 to 1911, there was decline by 12% due to influenza which increased by 22% in 1921 by natural growth. After 1921 there was constant

growth of population due to industrialization of cities. The increase by 1941, has doubled the figure due to influx of refugees, and the growth of population continued to increase till 1961.

POPULATION GROWTH OF TOWN⁴²

Years	Population	%age variation
1901	202797	-
1911	178557	11.2
1921	216436	21.0
1931	243755	12.6
1941	487324	23.7
1951	705383	30.4
1961	971062	48.0

In Kanpur secondary sector is very well marked upto 1961. The development of industries have reached to its saturation point.

TYPES OF INDUSTRIES BY EMPLOYMENT SIZE⁴³

Industrial Category	Total Employment	Percentage
(1)	(2)	(3)
Food except beverage	3312	4.37
Textiles	52812	69.6
Wood & wood works	166	0.22
Printing and Publishing	621	0.82

(1)	(2)	(3)
Leathers and leather products	6988	9.21
Chemicals & Chemical products	1649	2.17
Metal and metal mfg.	5299	6.99
Electrical machinery	1470	1.94
Transport equipments	499	0.64
Miscellaneous	859	0.75
TOTAL	75842	100.00

3.4 CASE STUDY III - VARANASI

3.4.1 Historical Background

Banaras had been famous for its religious importance since antiquity. For thousands of years, it has been recognised as the centre of learning Hindu culture and cultivation. The reference of cities, found from Puranas, Vedas etc., reflects that the origin of the city of Varanasi dates back to at least 700 B.C. Its name has been derived from the two water-streams, existing in its location, named Varuna and Assi. Varanasi was the site of settlement of earliest Aryans race which was known as a 'Kashies', who later on established a powerful kingdom. Varanasi, had also been, a seat of Hindu philosophy during the ancient times. It has a commanding location on the bank of the Ganges which promoted its important centres of

trade with Nepal and other parts of India. In 12th century A.D., Varanasi fell to Muslim rulers and continued to be ruled by them till the 18th century, when the British overpowered this whole country.⁴⁴

The introduction of railways, during the British period, provided a fresh impetus to the growth of Varanasi which helped the city to develop at a very fast rate to become a major urban centre in eastern Uttar Pradesh. After independence, Varanasi also developed with speed in an unplanned and haphazard way, due to the rapid industrialisation. It resulted into a large scale increase in the local population which created enormous problems for urban living.

3.4.2. Regional Co-Ordinations

The city is connected to important parts of India by regional trunk routes, through all available means of transportation like air, rail and roadways etc. The city has connection with major cities like Delhi, Calcutta, and Agra etc.; which tends to increase the number of passengers pouring in the city; and this would demand more terminal facilities and expansion from time to time. Before regular rail and road transportation was developed, most of the transportation was carried out by waterways (in the river Ganges). The region is ideally suited for the industrial development in the eastern part of the U.P., by the virtue of its location at the hub of an excellent network of rail and road transportation. Varanasi, being, ancient city of

religious and cultural importance attracts great number of influx from all directions of the country. The specialised, products of cottage industries like silk and saris have spread trade and commerce, all over the country.⁴⁵

3.4.3 Locational Co-Relations

The total regulated area in Varanasi is 48 sq. miles along the left bank of river Ganges. The whole area includes Dam nagar, and Mughalsarai. The east area is defined by Mirzapur and Mughalsarai. River Ganges provides linkage, between Mughalsarai, Saranath, Shripur, Loheta, Banaras Hindu University and railway station, through the waterways.

Most of the population is concentrated on high and firm 'Kahkar Ridge' which rises immediately against the left crescent shaped banks of the Ganges river. Towards the north-west, the central area extends itself across the railway network and Varuna river through the four road bridges, in a linear development, along the civil lines and Jaunpura road for a distance of more than 5 Km. upto Shivpur. Saranath complex, the Banaras Hindu University and Diesel Locomotive Works are more or less detached from the main city, and are located towards north, south and west of the central area respectively.⁴⁶

3.4.4 General Characteristics of the Town

3.4.4.1 Physical Characteristics

Varanasi a sacred city and it occupies first place

for its religious and cultural importance. The city is situated at the 'Kankar - infested' high level of the Ganga crescent, which is not very well planned site for expansion of the city. Three cultural Nuclei of Kedareshwar (South), Visheshwar (Centre); and Onkareshwar (north) are separated from each other by Godawari and Mandallini, Vernalable rivers; known as the Ganges of south and the Ganges of north. Thus the city exerted a potent force for national integration through the imperceptible process of cultural assimilation.⁴⁷

3.4.4.2 Social-Cultural and Economic Characteristics

In 1965, the total urban population was 6.8 lakh out of which, 5.73 lakh persons lived in Varanasi city. The urban population of Varanasi district is comprised of Varanasi Corporation, Ramnagar, M.B., Mughal Sarai M.B., Mughal Sarai railway colony, apart of rural settlements.⁴⁸

One of the many planning problems connected with Varanasi is the uneven distribution of population densities. A large portion of this population and commercial business enterprises in Varanasi is concentrated within a central part of development, varying in depth from 1/2 to 3 Km. along the high left bank of the river ganges.

Varanasi town shows a population growth from 1901 to 1961 by 125%. These figures show that the population of the city has been increasing at a considerable rate.⁴⁹

This tendency is a result of the growth of industrial activities in the city. The growth of population is creating quantitative and qualitative shortage of housing accommodation. The average size of house hold in Varanasi is five. This house-hold size is more or less uniform in all the wards. About 10.8 persons or 2.15 household live in the average built up house. Considering the fact that a number of built up houses in the central area are multiple units dwellings the rate of occupancy per house, is not too high. But these dwelling units fall much below the desired standards.⁵⁰

The participation of workers in Varanasi was 32% of the total population in year 1961. This rate of participation is quite in conformity with the participation rate prevailing in those cities which have achieved a higher level of economy.

The following table shows the anticipated participation rate in Varanasi (lakhs).⁵¹

Year	Population in in lakh	Worker		Non-worker	
		No. (lakh)	%age	No. (Lakh)	%age
1931	2.08	0.79	37.8	1.29	62
1951	3.56	1.21	34.0	2.35	66
1961	4.9	1.57	22.6	3.33	68
1971	7.01	2.11	31.0	4.9	69
1973	8.84	2.66	30.6	6.18	70
1981	10.45				
1991	14.92				

These figures show the higher level of industrial economy in the city.

3.5 CASE STUDY IV - LUCKNOW

3.5.1 Historical Background

Lucknow is the noblest monument of human art and culture which has unique character in this area. But historically, no account can be given of Lucknow's origin. The tradition is made dominant in the origin of the city. Traditionally, the city is known as Lukshmanpur, named, probably, after Lord Rama's younger brother. Systematic history of Lucknow is available since the Moghals ruled the area (1031 AD). The building programme of Lucknow was initiated by Shaikhs. They built a fort, 'Qila Lakhana', (by a Hindu Architect) and, thus, the city obtained the present name, Lucknow. In 1338 to 1341 AD city started to prosper and grow in its size. Akabar developed the building programme of the city. Several mohallas were developed to the south of the Chowk. The development of Lucknow continued to be unhampered during the reign of Jahangir. It had been a famous manufacturing centre, developed into roaring trade and commerce centre. In 1770 Kaleidoscopic change took place on the political horizon. After Aurangzeb, the development of the city almost came to a full stop.

During the period from 1776 - 1793, extensive addition was done to city, round the chowk. During 1827-1837 Lucknow was designed for a defence capital. Number of

Military posts were established near Gomati river. All roads pierced through the city in radial form. In 1930 planned development of the city got real impetus, when government offices were transferred to Lucknow from Allaha-
bad. After partition due to the influx of refugees, popu-
lation increased tremendously and the city took a haphazard
form due to unplanned growth.⁵²

3.5.2 Regional Co-Ordinations

Lucknow city is well linked by rail, road, and airways connections to the rest of big towns of India. It is 606 miles from Calcutta, 305 miles from Delhi, 198 miles from Varanasi, & 49 miles from Kanpur. Lucknow, mostly has been linked with railways. Road transport, comparatively, is not well developed. Still enormous number of visitors come to Lucknow. It is estimated that 90,000 persons per day come to Lucknow, for different types of business. The major purpose to visit the city is for seeking employment and the business professions claims the second importance. Lucknow being a regional centre, the people from which region pour into the city and the regular, in bound, traffic takes approximately two hours to travel to the heart of the city from the farthest points in the region.⁵³

3.5.3 Locational Co-Relations

Lucknow is a capital of Uttar Pradesh and is situated nearly in the centre of the whole district. Main urban area of Lucknow is situated on the southern bank of river

Gomati. It is bounded in the north by district Sitapur, on the east by Barabanki, on the south by Rae-Bareilly, and on the north-west and south-west by Hardoi and Unnao respectively. Except in a part, in the south and south west, the boundaries of district can hardly be called natural, which appears to have been fixed arbitrarily for administrative convenience. The river Sai on the south and south-west forms the natural boundary for a short distance only.⁵⁴

3.5.4 General Characteristics of the Town

3.5.4.1 Physical Characteristics

The earlier settlements occupied the higher grounds stretching south of the Gomati river, due to the danger of floods. The city always suffered from floods. Cantonment has occupied large area of the town with three barriers. The first business district grew in the centre of the early built up area and chowk is the earliest developed business quarter in Lucknow. As the land, further south, was occupied by large depressions, the built up area extended first to the south-west and then towards Aminabad Market which is another important business area. With the construction of Bund road along the river, on eastern loop, the vast tract of land was made safe from floods, where civil lines and administrative zones were planned. This is highly modernised business street with all commercial and entertainment activities. Lucknow is predominantly an administrative and cultural centre.⁵⁵

3.5.4.2 Socio-Cultural & Economic Characteristics

Through the ages it has been a city, where the rays of different culture, castes, and creeds fell into forces. But after 1950, city posed the problems of rapid growth of city, in social and economical life of people. City became awafully crowded and densities were as high as 350 per/hectare, in chowk area. The population increased from 3 lakhs in 1931 to 6.65 lakhs in 1961.⁵⁶

The housing conditions present a gloomy picture of the city. The living space is 100 sft/8 to 9 members. The following table shows the trend of growth of population.⁵⁷

Years	Population	Variation	%age variation
1901	256239	-	-
1911	252114	- 4125	- 1.61
1921	240566	- 11548	- 4.58
1931	274659	+ 34093	+14.17
1941	387177	+112518	+40.97
1951	496861	+109684	+28.33
1961	655673	+158812	+21.96

The average house-hold size of town groups is 4.66 in Lucknow (M.C.). Aminabad and Ashrfabad wards experienced largest house-hold size of 5.60 to 5.61 in contrast to a minimum of 4.04 in Hazaratganj ward. 28% of wards

have 5 to 5.6 members in a house-hold whereas 72% wards show the average house-hold size below 5 persons. In the city death rate is 11.15%, birth rate is 31.43% natural rate of growth is 20.0%, and overall rate of population increase 31.96%.⁵⁸

Lucknow is neither industrial nor agricultural centre, yet, it occupies unique place in the economy of the state.

The economy of Lucknow is based on the traditional industries, and mainly it has been an administrative and commercial centre of the state. The percentage of workers engaged in primary sector is as low as 0.76% in 1961. The following table shows the occupational structure of Lucknow.⁵⁹

Industrial Category of workers	Total Workers	Percentage
1. Cultivators, Agricultural labours, Forestry, plantation etc.	355	2.65
2. House-hold manufacturing industries	1952	14.56
3. Construction	1041	
4. Trade and Commerce	4036	7.76
5. Transport and storage communication	1393	30.17
6. Others services	4632	34.54

PART - II

FACTUAL DATA

The statistical data of the concerned towns, selected for the case studies, has been collected from various sources (the sources being Sensus reports district handbooks and Town and Country Planning Department of U.P.). The list of the total collected information has been stated in Appendix 'A'. This part of the Chapter brings out the relevant portion of the total information, in the form of various tables and comparative details of the towns, under study.

TABLE - 1

POPULATION - GROWTH

Town	Area	1901	1911	1921	1931	1941	1951	1961
Kanpur	114.54	202797	178557	216436	243755	487324	705383	971062
Lucknow	52.29	256239	262114	240566	274659	387177	496861	655673
Agra	34.29	188022	185449	185532	229764	284149	375665	508680
Varanasi	32.66	215223	205420	200022	207656	266002	355777	489864
Allahabad	31.42	172932	171697	157220	183914	260630	332295	430730
Meerut	21.58	118539	116631	122609	136709	169290	233183	283997
Bareilly	15.41	133167	129462	129459	144031	192688	208083	272828
Moradabad	4.5	75682	81118	82671	110562	142414	161854	191828
Saharanpur	9.75	66254	62850	62261	78655	105622	148436	185213
Gorakhpur	12.30	64148	56892	57985	75644	95127	132434	180255

SOURCE - SENSUS REPORT - 1961

TABLE - 2
AREA HOUSES AND POPULATION (Urban)

Towns	Area Sq. miles	No. of occupied residential houses	Population	Population/sq. mile
Moradabad	3.80	22148	1,80000	47395
Rampur	7.80	18225	1,35407	17360
Bareilly	15.41	36337	2,72828	17705
Saharanpur	9.71	30261	1,85213	18996
Meerut T.G.	21.58	46873	2,83997	13160
Agra T.G.	34.29	59790	5,08680	14835
Kanpur T.G.	114.54	1,62462	2,71062	8478
Allahabad	31.45	67415	4,30730	13696
Lucknow T.G.	82.29	1,28659	6,55673	12539
Varanasi B.G.	34.66	51316	4,89664	14999

SOURCE - SENSUS REPORT - 1961

TABLE - 3

'KAVAL' CITIES DENSITY/Sq.mile

(SOURCE-MASTER PLAN-LUCKNOW, T & C.P. Deptt. U.P.)

Dist. Urban	Density/sq.mile	Kaval cities	Density/sq.mile
Kanpur	8504	K	8478
Agra	15961	A	14835
Varanasi	12281	V	14999
Allahabad	12891	A	13696
Lucknow	12127	L	12539

TABLE - 4VARIATION IN POPULATION DURING 60 YEARS

Towns	Total workers	Workers in trade & Commerce
Moradabad	51037	11481
Rampur	39219	7167
Bareilly	77963	14390
Saharanpur	52391	11725
Meerut	82210	15790
Agra	1,38505	27444
Kanpur	2,90277	57085
Allahabad	1,31180	21738
Lucknow	2,04239	35244
Varanasi	1,62101	31573

SOURCE - SENSUS REPORT - 1961

TABLE - 5

WORKERS ENGAGED IN TRADE AND COMMERCE

Group	Total Population	Total Workers	Number of worker in trade	Percentage to total population	Percentage to total worker
Kanpur	971062	316581	57085	5.83	18.03
Lucknow	655673	204239	35244	5.37	17.26
Varanasi	489864	156578	30624	6.25	19.56
Agra	508680	138505	27444	5.40	19.81
Allahabad	430730	131180	21738	5.05	16.57
Moradabad	191828	51037	11481	5.9	1
Bareilly	272828	77953	14390	5.0	18.1
Saharanpur	185213	52391	11725	6.0	23.1
Meerut	283997	89210	15790	5.6	18.0
Average Range				5-6%	16-18%

SOURCE - SENSUS REPORT - 1961

TABLE - 2

LAND USES OF TOWNS

Towns	Popula- tion	Total Area	Residen- tial area	Commer- cial	Indus- trial	Parks/ Play Open	Public faci- lities	Govt.	Circula- tion	Defence	Open Land
Kanpur (Existing) 1965		21,327	6958 (32)	406.7 (1.9)	1407 (6.6)	259.8 (1.3)	1443 (6.7)	366.7 (1.8)	1907 (8.9)	2226 (10.5)	6352 (29)
Proposed		41,471	16000 (38)	1470 (3.5)	4880 (11.8)	6510 (15.7)	5100 (12.9)	749 (1.8)	4536 (10.9)	2226 (5.4)	
Allahabad Existing		15,476.22	3709	174.16	531.64	153.25	1068	293.63	1228.5		7608
Proposed		38,517	14217	1340	4656	2510	4722	4379	429.8		10562
Ghaziabad 1963	70438	12,357	472.5	20.5	177	22.0	85.5	228.75	189		1545
Gorakhpur Proposed		20,261	7608	213.74	2300	1098.8	802	145	789.8	1481.8	
Lucknow Existing	19881	3851	240	429.5	520.4	1518.8	656.8	1772.7			788.8
Proposed		43502	17551	832	3740.4	4025.98	2225.6	268.9	7141.85		
Varanasi Existing		2,728	1643	89.30	62	175.6	142.85	11.9	284.7		167
Proposed		2,728	1660	115	50	265	197	22	362		57

SOURCE: MASTER PLANS OF ALL CITIES

TABLE - 8 A**PERCENTAGE DISTRIBUTION OF SHOPS IN COMMERCIAL ZONE ALLAHABAD**

Name of Zone	Retail Shops	Whole-sale Shops	Other shops	Total
CBD (Chowk, Khuldabad, Muthiganj, Kydganj, Bansmandi, Johnstonganj Gangaghat etc.)	65.08	8.50	252	67.10
Sub CBD (Civil Lines Katra, Colonelganj, Darganj)	11.17	0.58	0.40	12.45
Local market	17.67	1.70	1.18	20.45
TOTAL	83.82	11.08	8.10	100

TABLE - 8 B**PERCENTAGE DISTRIBUTION OF SHOPS ACCORDING TO THE ORIGIN OF COMMODITIES IMPORTED TO ALLAHABAD**

Type of Commodity	Total
Food grain - products	20.64
Soft goods	47.93
Hard goods	19.25
Mined goods	6.02
Building materials	2.00
Petrol and fuel	4.16

SOURCE - MASTER PLAN - ALLAHABAD

TABLE - 9

**PERCENTAGE DISTRIBUTION OF BUSINESS UNITS IN BROAD CATEGORIES
OF CITY BY TYPE OF SHOPS - 65**

Type of business units	Total	Percentage distribution			
		CBD	Sub CBD	Local	Total
Food	4210	35	33	27	100%
Soft goods	2351	78	9.5	12.5	100%
Hard goods	1650	61.2	10.3	28.5	100%
General	380	68	11.2	20.8	100%
Service Shop	2250	69.6	18.1	12.3	100%
Service use repairs	410	49.7	23.3	22.0	100%
Service yard	440	48.5	27.2	24.3	100%
Whole-sale	385	72.4	2.7	24.9	100%
		73.1	10.4	16.5	

SOURCE - MASTER PLAN OF VARANASI

TABLE - 10

ANTICIPATED DISTRICT OF WORKERS IN MAJOR COMMERCIAL CENTRE
AS PROPOSED IN ALLAHABAD M.P.

Type of Business	No. of location	Land 1991 significant in acres	Ranges of employment density workers/acre	Anticipated employment	%age of total
General business and Commerce	2	300	200 - 250	60000	31.7
Whole-sale	4	176	20 - 400	17600	8.5
City Central	1	156	175 - 225	30000	10.6
Sub-city centre	1	100	175 - 225	20000	10.6
District Centre	11	378	150 - 200	58500	20.8
Warehousing	1	113	20 - 200	5100	2.7
Mineral siding	-	70	-	-	-
		1287		1,91,200	100

SOURCE - MASTER PLAN OF ALLAHABAD

TABLE - 11**ANTICIPATED EMPLOYMENT IN COMMERCIAL AREA (VARANASI)**

District	Land requirement	Density workers/ac	%age to total
CBD & Sub CBD	207	200 - 300	28.1
Distt. Centre	400	200 - 300	40.2
Sub-District Centre	211	150 - 200	17.6
N.H. Centre	180	100 - 150	9.4
Warehousing Storage	368	25 - 30	4.7

FAR. Spatial Distribution of Business Commerce Centres

Banaras - The main business areas of city, broadly classified in 3 category.

- I. CBD Chowk, Landvalue highest - multistoried buildings.
- II. Sub-CBD - Middle zone near CBD - Planned pattern (Medival Political)
- III. Local Markets Fringe of city.

SOURCE - MASTER PLAN OF VARANASI

TABLE - 12 (Ref. Appendix 'H')

DISTRIBUTION OF SAMPLED BUSINESS UNITS IN RANGES FLOOR-AREA
TO EMPLOYMENT SIZE

Employment Category	Upto 100	100-200	201-300	301-500	500-700	700-1000	Total business units	Average area of business units sq ft
1 to 5	19.7	35	20	15.7	11	3	127	333
6 to 10	4	20	1	4	12	4	25	772
11 to 15	-	-	-	-	33	33	3	833
16 and above	-	-	-	-	-	-	4	1500

SOURCE - MASTER PLAN OF LUCKNOW

TABLE - 13DISTRIBUTION OF BUSINESS UNITS BY TYPES OF BUSINESS

Types of Business	Lucknow ²		Allahabad ¹		Banaras ³	
	No. of Unit	%	No. of units	%	No. of units	%
Retail	3302	-	3341	83%	8591	-
Whole-sale	52	-	229	5%	384	-
(Retail-wholesale)			210	5.8%		
Entertainment	8	5.3%				
Commercial Establishments			3984	5.10	3000	

NOTE

1. Ref. Table - 8
2. Ref. Appendix - 'B', 'C', 'D'
3. Ref. Table - 9

TABLE - 14

ANTICIPATED DISTRIBUTION OF WORKERS IN MAJOR COMMERCIAL CENTRES

Types of Business	A L L A H A B A D ¹		B A N A R A S ²	
	Land require- ment acres	Density of Workers	Land require- ment Acres	Density of workers
General business and commerce	300	200 - 250	350	250 - 350
Whole-Sale	176	20 - 400	87	100 - 300
City Central	156	175 - 225	150	100 - 150
Sub-city Central	100	175 - 225	75	200 - 300
District Centre	378	150 - 200	300	150 - 250
Ware-housing & Storage	183	20 - 200	250	25 - 30
		60,000		98,200
		17,600		8,600
		30,000		18,800
		20,000		15,600
		58,500		52,600
		5,100		6,200

NOTE:

1. Ref. Table - 10
2. Ref. Table - 11

TABLE - 15**DISTRIBUTION OF BUSINESS UNITS BY EMPLOYMENT SIZE**

Employment Categories	Lucknow ¹		Allahabad ²	
	Total busi- ness units	Av. floor area of business unit	Total busi- ness units	Av. floor area of business unit
0 to 1		6		61.42
2 to 5	127	333		32.00
6 to 9	25	772		4.07
10 to 19	3	833		2.33
20 to above	4	1500		18.1

NOTE

1. Ref. Table - 12
2. Ref. Master Plan Allahabad

TABLE - 16**DISTRIBUTION OF LAND USE UNDER COMMERCIAL AREA**

Land use Classification	Allahabad¹ (Area in Acres)	Banaras² (Area in Acres)
Central Business & Commerce	300	207
Whole-sale	336	65
City Centre	150	67
Sub-city Centre	100	211
District Centre	378	400
Ware-housing, storage	183	356

NOTE

1. Refer - Table - 10

2. Refer - Table - 11

VARANSI

PHYSICAL BARRIERS

LEGEND



DIRECTION OF GROWTH

RESTRICTIONS TO THE GROWTH



AREA EFFECTED BY FLOOD



EDUCATION RESERVED AREA



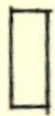
INDUSTRIES & RAILWAYS



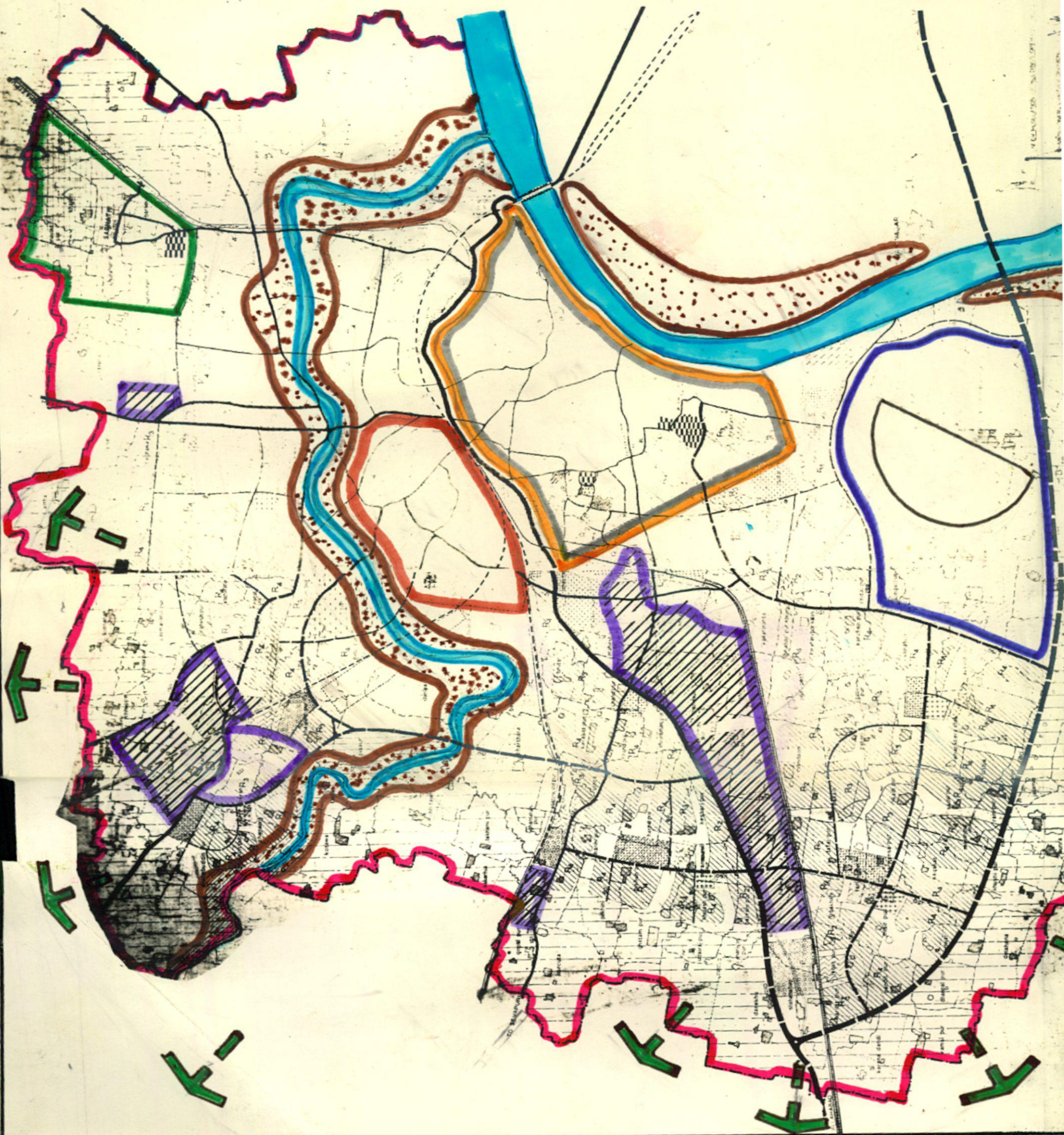
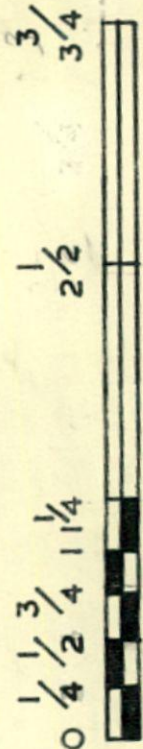
REGIONAL PART (RESERVED FOREST)



THICKLY BUILT UP AREA



CANTONMENT



ALLAHABAD

PHYSICAL BARRIERS & GROWTH POTENTIAL

LEGEND



DIRECTION OF GROWTH

RESTRICTIONS TO GROWTH



AREA EFFECTED BY FLOOD



CANTONMENT



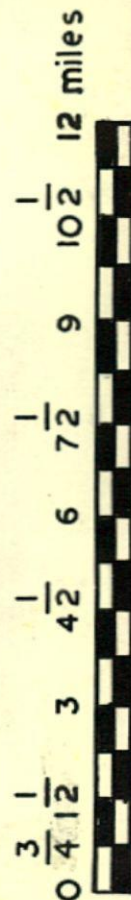
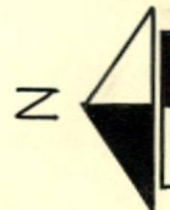
UNCERTAIN RIVER COURSE



THICKLY BUILTUP AREA



INDUSTRIES



KANPUR

PHYSICAL BARRIERS

LEGEND



DIRECTION OF GROWTH

RESTRICTIONS

CANTONMENT



RAILWAY COLONIES



RIVERS



INDUSTRIES



THICKLY BUILTUP AREA



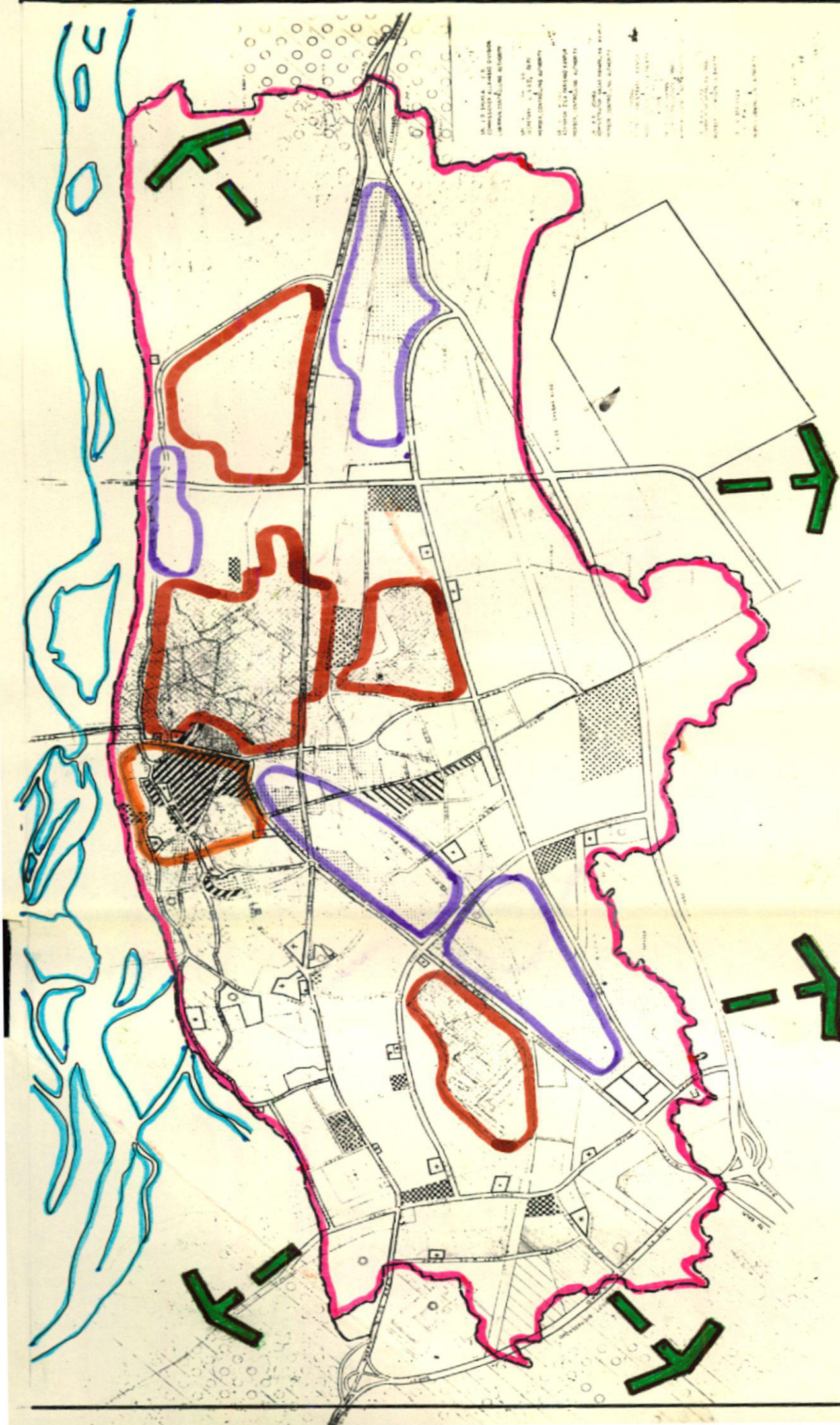
N



5 miles

furlongs

0 5 10 20 30 40 50 60



LUCKNOW

PHYSICAL BARRIERS

LEGEND

DIRECTION OF GROWTH

RESTRICTIONS

CANTONMENT

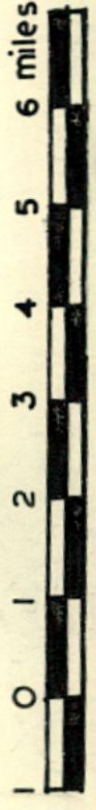
RIVER

CANAL

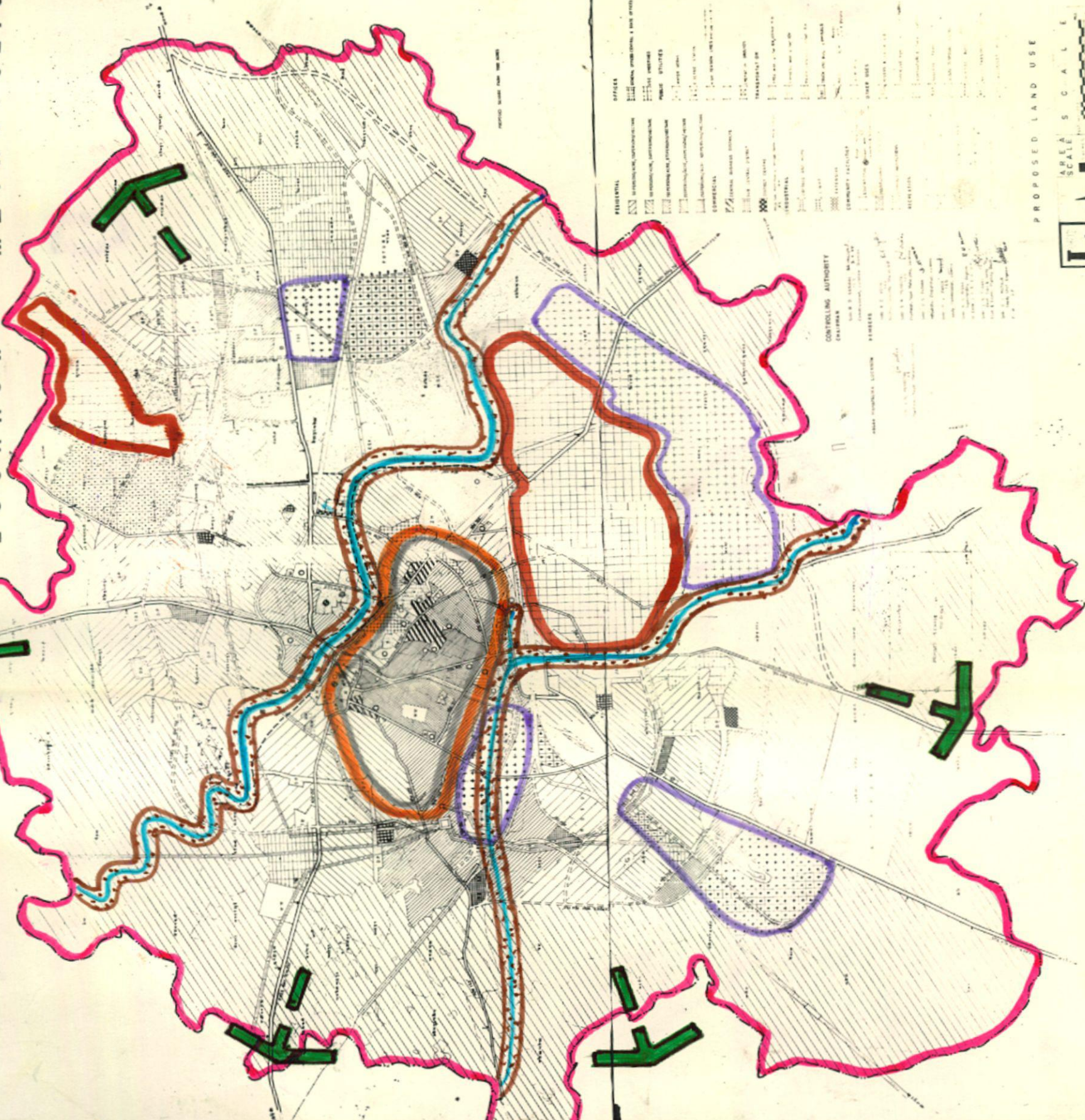
INDUSTRIES

THICKLY BUILTUP AREA

FLOODABLE AREA



लखनऊ मेट्रोपॉलिस LUCKNOW METROPOLIS



FEDERAL		STATE		LOCAL	
RESIDENTIAL	COMMERCIAL	INDUSTRIAL	THICKLY BUILTUP AREA	FLOODABLE AREA	PHYSICAL BARRIERS
RESTRICTIONS	CANTONMENT	RIVER	CANAL	INDUSTRIES	DIRECTION OF GROWTH

PROPOSED LAND USE

SCALE 5 C A L E

CONTROLLING AUTHORITY
CHIEF ENGINEER

CHAPTER - IV

ANALYTICAL STUDIES

The preceding Chapter, has brought out an informative prop to figure out, certain common features amongst the selected towns, of Allahabad, Kanpur, Lucknow, and Varanasi at inter-city and intra-city levels. This chapter deals initially with the comparison of towns, based on their common features, obtained from the collected data, in respect of their locational, demographic, and economic structure, and of the enumerating the various problems encountered in the Central Business Areas of the individual towns, finally lays down, the proposals, already, brought forward in the Master Plan.

4.1 COMPARISON OF COMMERCIAL AREAS OF THE SELECTED TOWNS

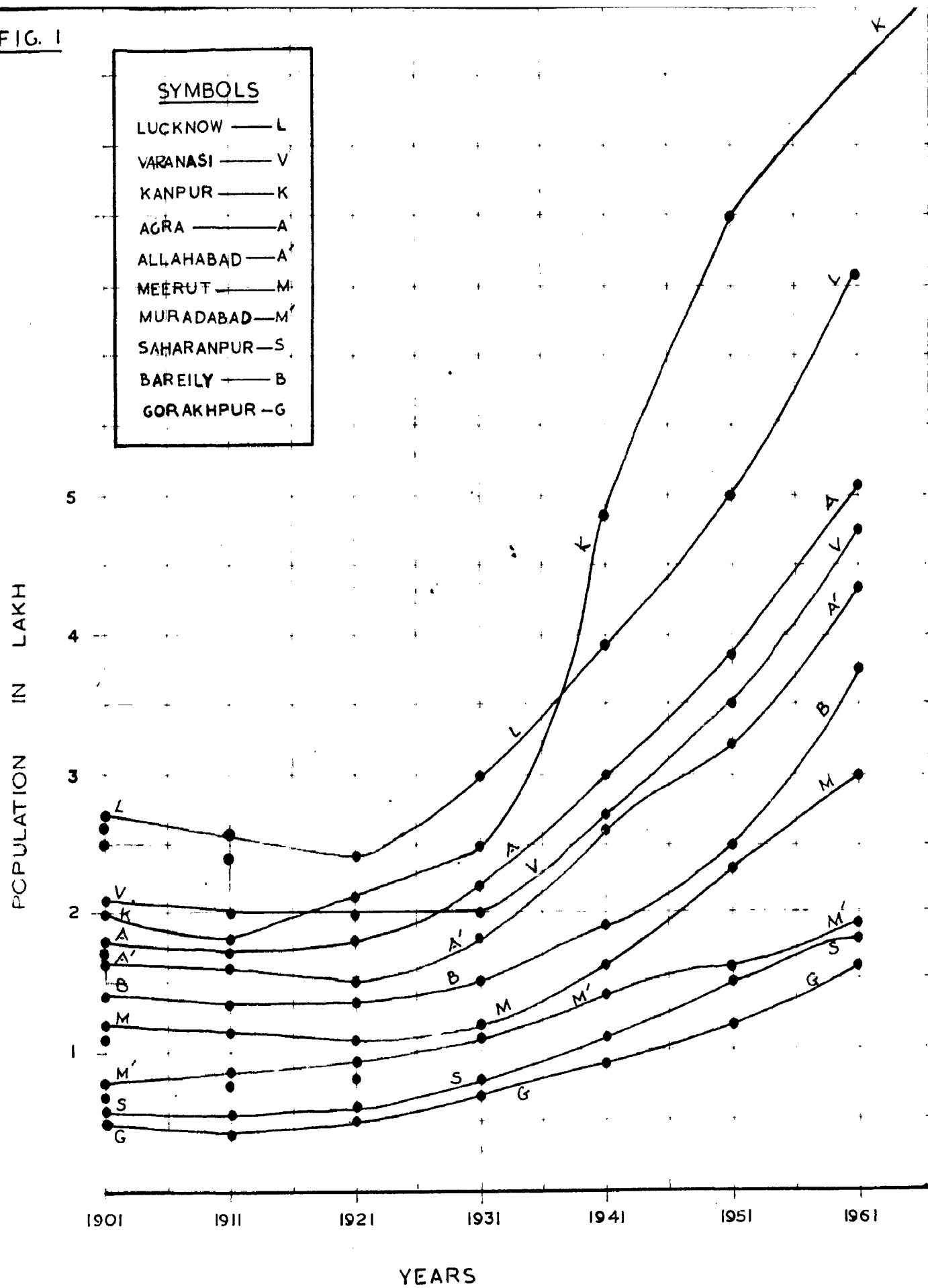
The comparison has been carried out, both at inter-city and intracity levels. The inter-city comparison gives a general picture of the majority of the towns in Uttar Pradesh and specifically draws out concrete facts regarding the selected towns for case study. The intracity comparison gives the details of the location, accessibility, composition of Central Business Areas, and its peripheral land-use pattern of individual towns supported by the analysis work.

4.1.1 Inter-city Comparison

History points out that all the towns have origin in the pre-British period. The present form of the city is a result of their "gradual expansion". The organic growth

FIG. I

SYMBOLS	
LUCKNOW	L
VARANASI	V
KANPUR	K
AGRA	A
ALLAHABAD	A'
MEERUT	M
MURADABAD	M'
SAHARANPUR	S
BAREILY	B
GORAKHPUR	G



POPULATION GROWTH OF TOWNS IN 60 YEARS

of these cities is evident from the development pattern adopted by them as shown in the "Physical-barriers plan" for the growth of these towns. (Ref. Plate Nos. 6,7,8,9).

4.1.1.1 Location

- (a) Almost all the towns are located along the bank of the river, Ganges (except Lucknow, which is located on the bank of a tributary of river Ganges i.e. Gomati). Due to this common geographical condition the areas, of the cities along the river banks get flooded during the monsoon periods.
- (b) The towns situated on the south bank of the river the north side has become a permanent barrier for all these towns (Ref. Plate Nos. 6,7,8,9).

4.1.1.2 Linkages

In general the cities taken up for case-studies, are connected on regional basis through almost all the means of transportation and communication, being used in India, air ways, railways, and roadways. To generalize the distances involved in all four towns, their Central Business Areas situated at (i) 2 to 6 miles from the bus terminals, truck terminals and railway stations (ii) 4 to 7 miles from the airports, and (iii) 6 to 11 miles from the farthest junction on highways. (Ref. Plate No.10,11,12,13).

4.1.1.3 Demographic Structure

- (a) Fig. No.1 shows, that except "Kanpur" all towns have steady growth of population. The decennial growth

LOCATION OF C.B.A. IN ALLAHABAD

(WITH REFERENCE TO THE DISTANCE ISOPETHS AND TERMINAL DISTANCES.)

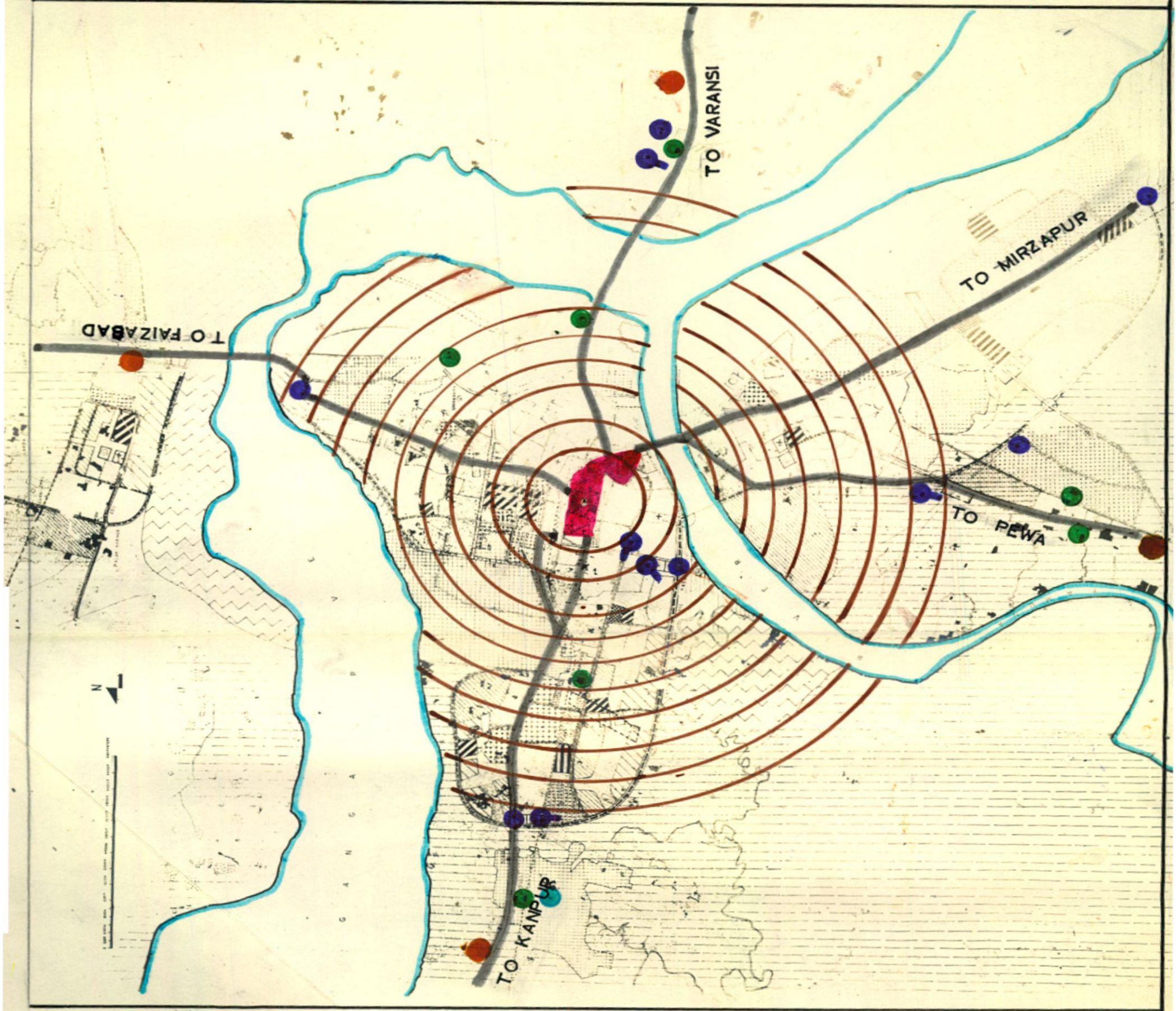
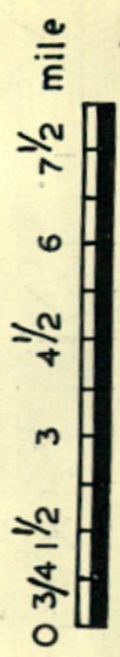
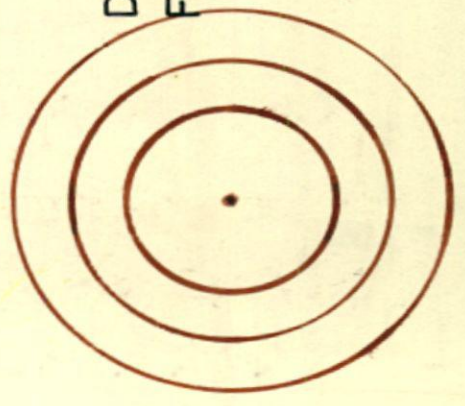
LEGEND

- LOCATION OF C.B.A.
- BUS TERMINALS
- TRUCK TERMINAL
- RAILWAY STATION
- AIR PORT
- MAIN JUNCTIONS ON THE PERIPHERY OF CITY

NOTE - DISTANCES FROM TERMINALS

TERMINALS	MAX. DISTANCES FROM C. B. A.	
	MAX. DIST. IN MILES	MIN. DIST. IN MILES
BUS STATION	6	0.5
TRUCK TERMINAL	6	2
RAILWAY STATION	7.5	2
AIR PORT	6.5	-
MAIN JUNCTIONS	7	7







DISTANCE ISOPETH AT 0.5 mile INTERVAL FROM C. B. D. (REFER GRAPH NO. 2)



LOCATION OF C.B.A. IN KANPUR

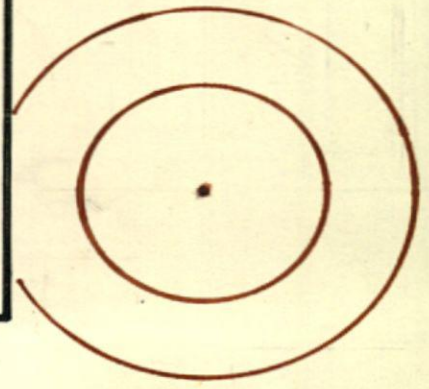
(WITH REFERENCE TO DISTANCE ISOPETHS & TERMINAL DISTANCES)

LEGEND

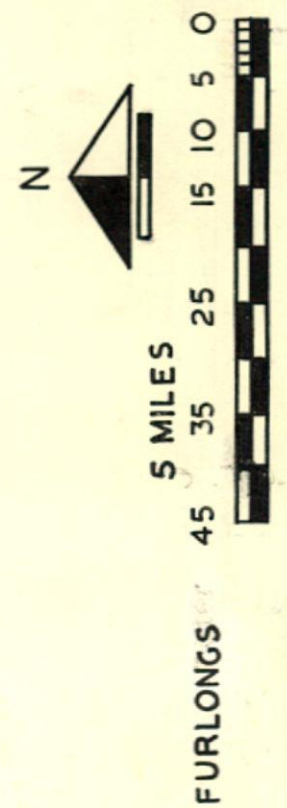
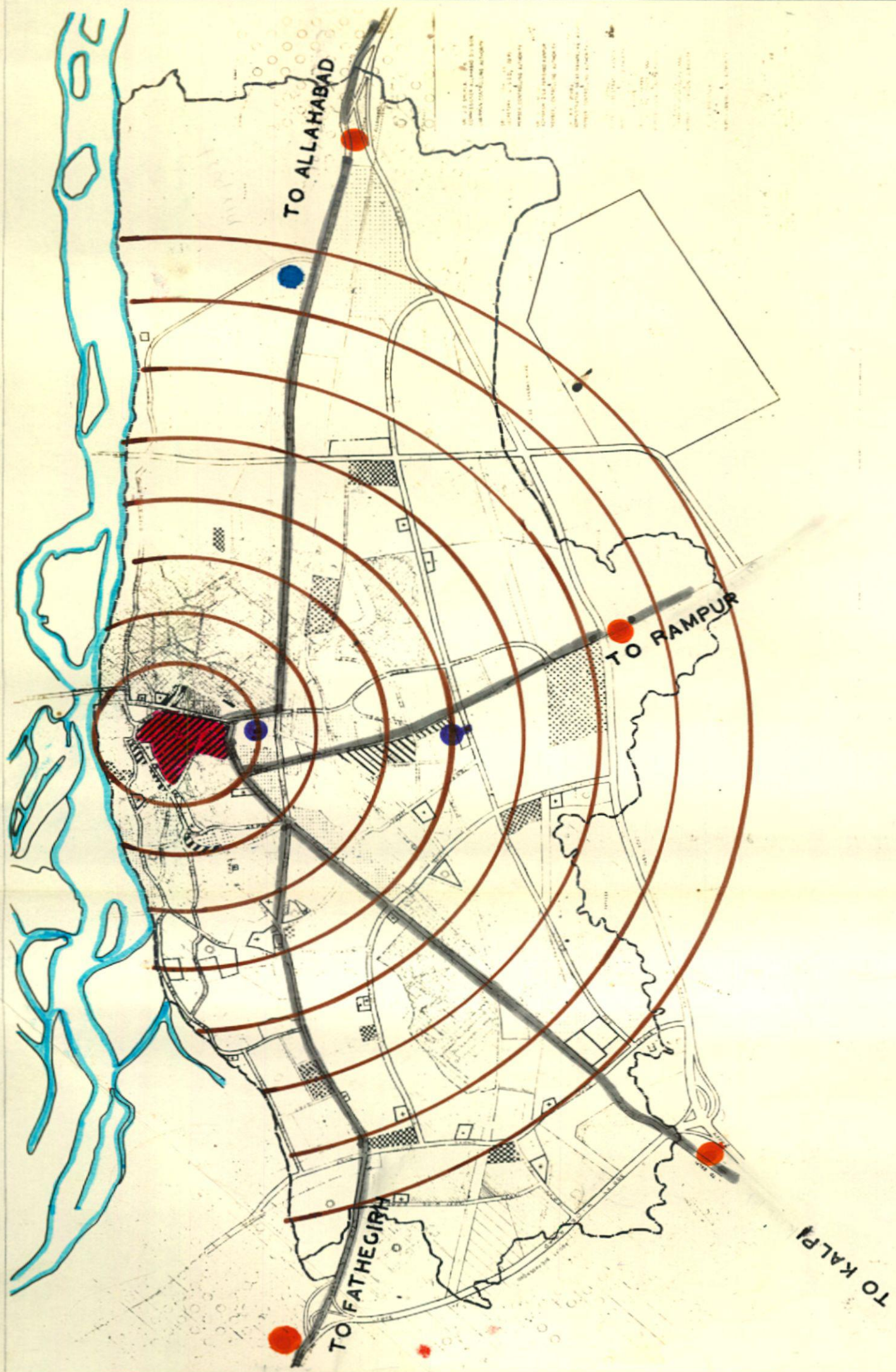
-  LOCATION OF C.B.A.
-  BUS TERMINALS
-  TRUCK TERMINALS
-  RAILWAY STATION
-  AIR PORT
-  MAIN JUNCTIONS ON THE PERIPHERY OF CITY

NOTE—DISTANCES FROM TERMINALS

TERMINALS	C. B. A.	
	max. dist. in miles	min. dist. in miles
BUS TERMINALS	4.5	4.5
TRUCK TERMINALS	4.5	4.5
RAILWAY STATION	3.5	3.5
AIR PORT	—	—
MAIN JUNCTIONS	9.5	8.5



DISTANCE ISOPETH AT 0.5 MILE INTERVAL FROM C.B.A. (REFER GRAPH NO. 3)



LOCATION OF C.B.A. IN VARANASI

(WITH REFERENCE TO DISTANCE ISOPETHS & TERMINAL DISTANCES)

LEGEND

- LOCATION OF C.B.A.
- BUS TERMINALS
- TRUCK TERMINALS
- RAILWAY STATION
- WATER TERMINALS
- MAIN JUNCTIONS ON THE PERIPHERY OF CITY

NOTE - DISTANCES FROM TERMINALS

TERMINALS	MAX. DISTANCES FROM C. B. A.	
	maxi. dist. in miles	min. dist. in miles
BUS TERMINALS	5.5	3
TRUCK TERMINALS	5.5	3
RAILWAY STATION	5.5	5.5
WATER TERMINALS	4	
MAIN JUNCTIONS	9	6

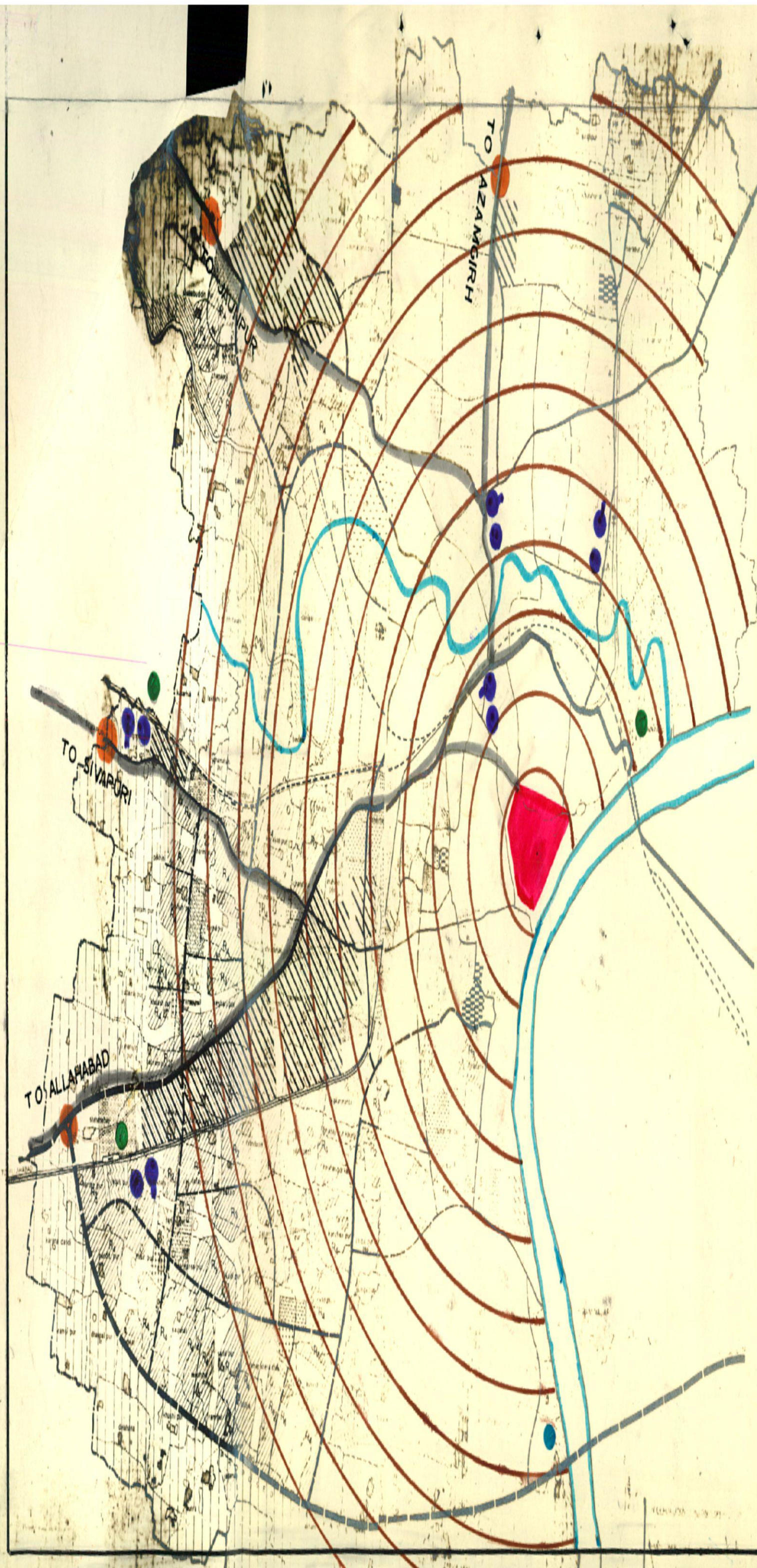
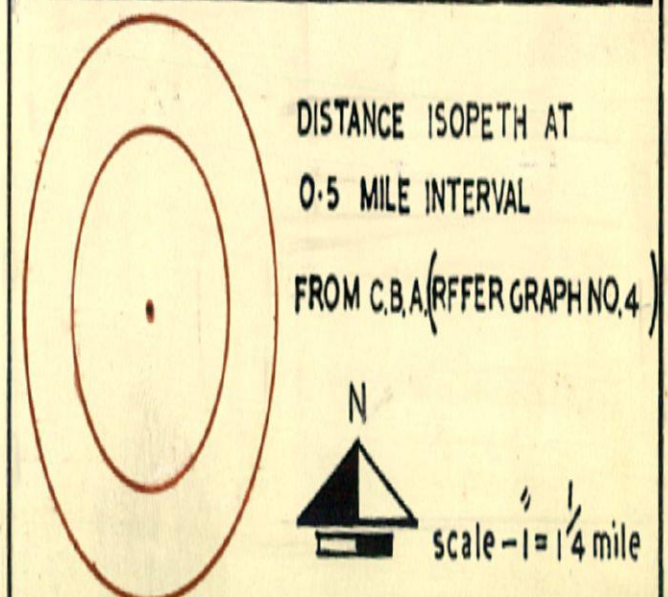
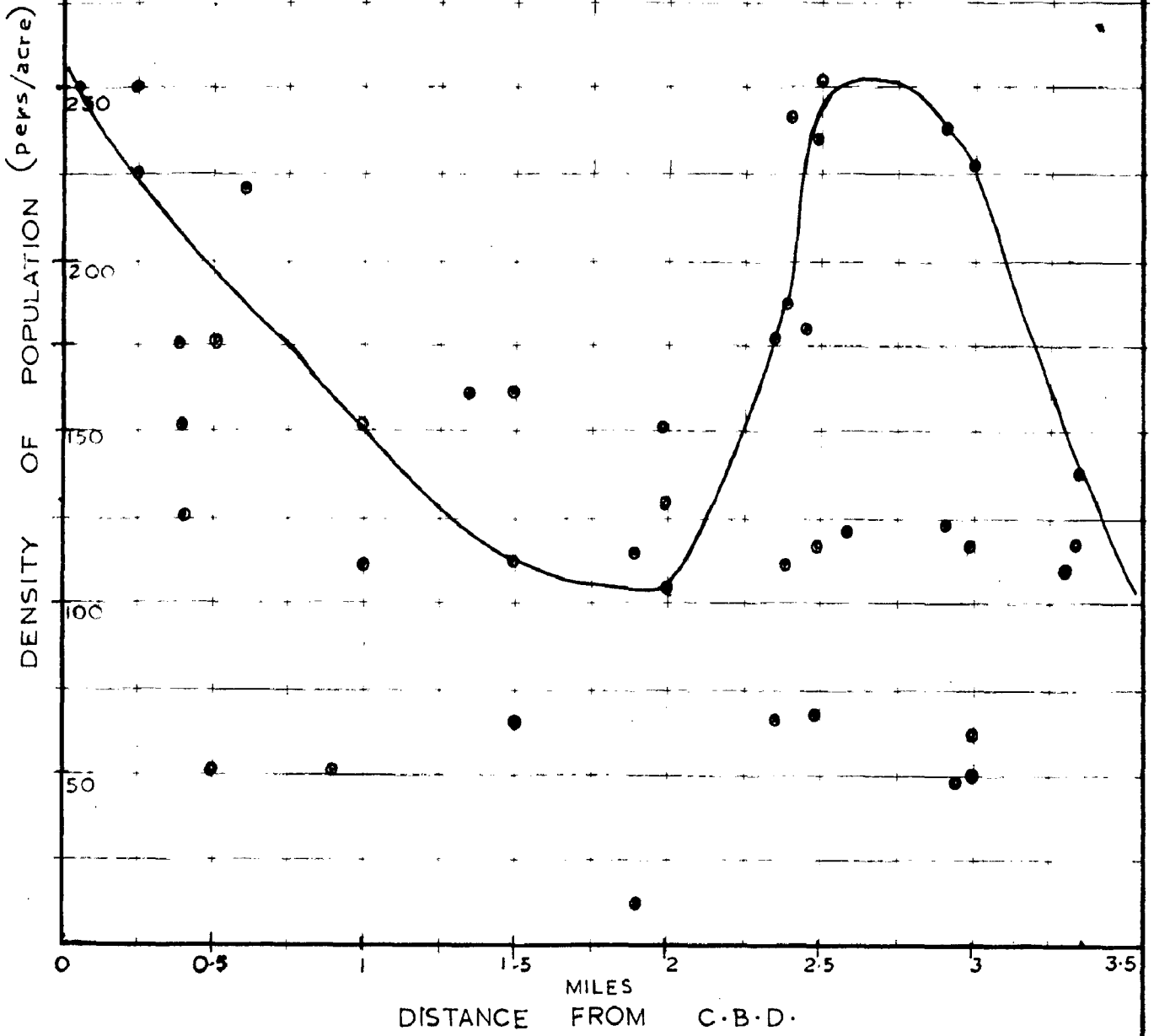


FIG. 2



ALLAHABAD

OBSERVATIONS :-

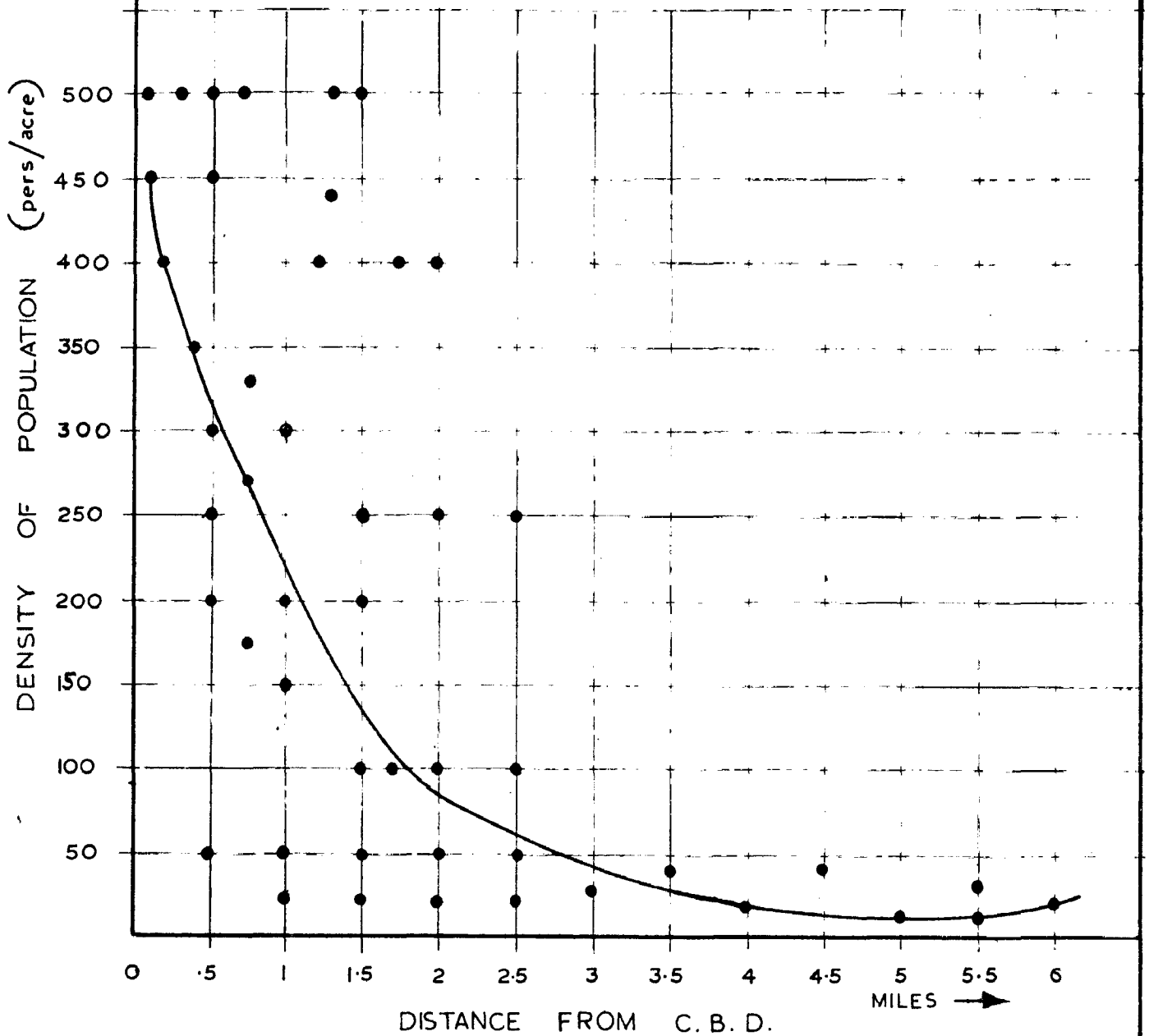
- (i) POSSIBILITY OF ANOTHER NUCLEUS
- (ii) 50 PERS/ACRE-DENSITY ESTABLISHED AT PERIPHERY

rate, in general, has been going up violently since 1931. Due to concentrated input of industrial development, the population of "Kanpur" has boomed extra-ordinarily between 1931 to 1961 as compared to growth rate of the other three towns, Lucknow, Allahabad, and Varanasi (Ref. Table No.1). Further, the house-hold structure of major nine towns, clarifies the demographic structure of U.P. State. (Ref. Table No.2,3).

- (b) Figures, 2,3,4, and 5 show graphically the population pattern of four towns of Allahabad, Kanpur, Varanasi and Lucknow respectively. Assuming C.B.D./A. as a geometric centre if we take isopeths of 1/2 mile on the ground, from C.B.D./A., a marked variation can be observed in the manner of dispersion of densities in the towns. (Ref. Plate No.10,11, 12 and 13).

Allahabad (Ref. Fig.2) town having a population of around four lakh show that upto the distance of 2 miles from C.B.D., the density falls down from 200 persons/acre (near the C.B.D.) to 50 persons per acre (at the far end), while on a second peak is noted around the distance of 2.5 to 3 miles. This shows that due to the additions of colonies at the periphery, it may be possible that the town may go for decentralization in its Central Business Areas or it may go far more than one Central Business Area.

FIG. 3

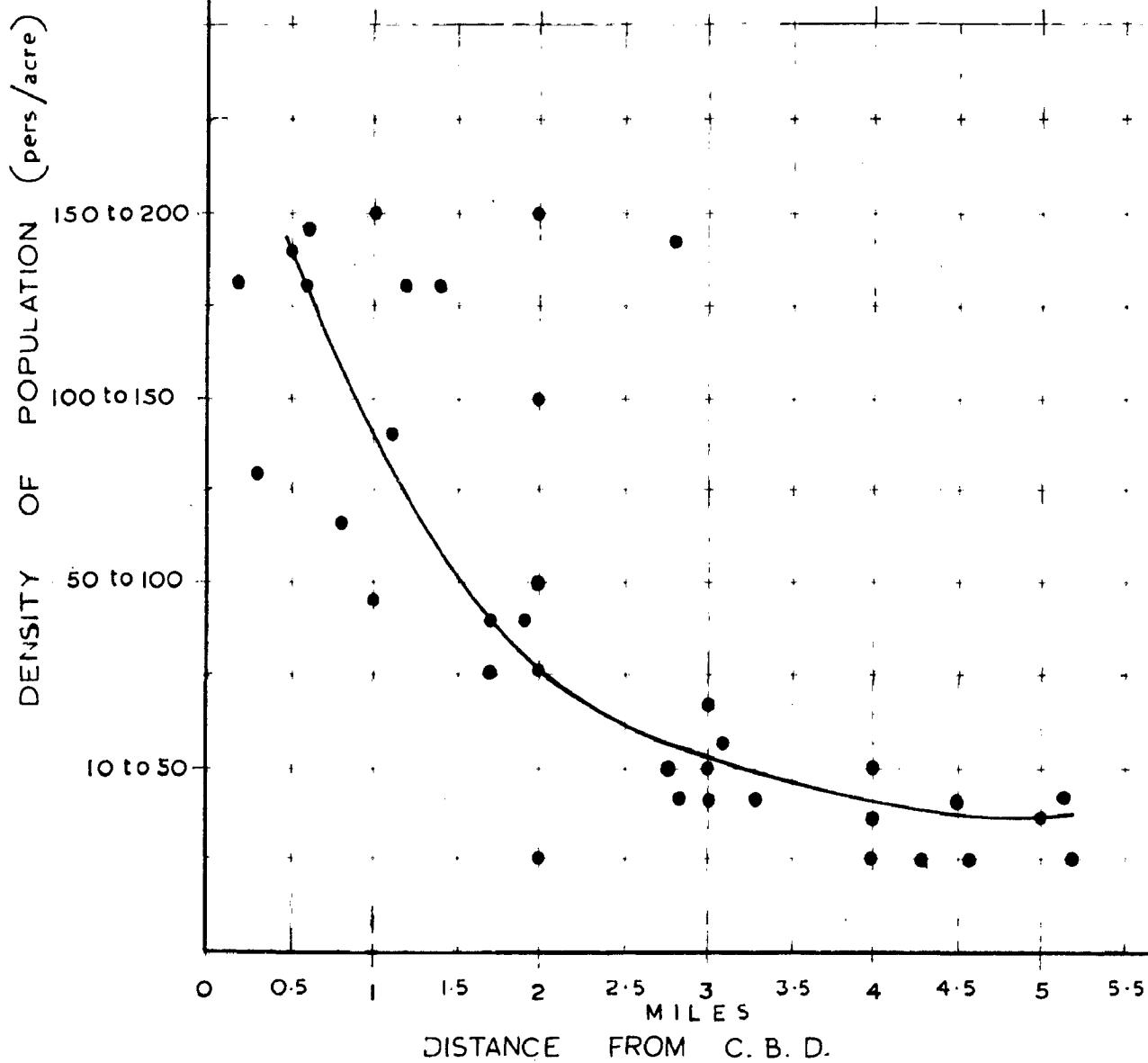


KANPUR

OBSERVATIONS:-

- (i) CONCENTRIC GROWTH OF TOWN
- (ii) DENSITY STILL UNSETTLED AT PERIPHERY

FIG. 4

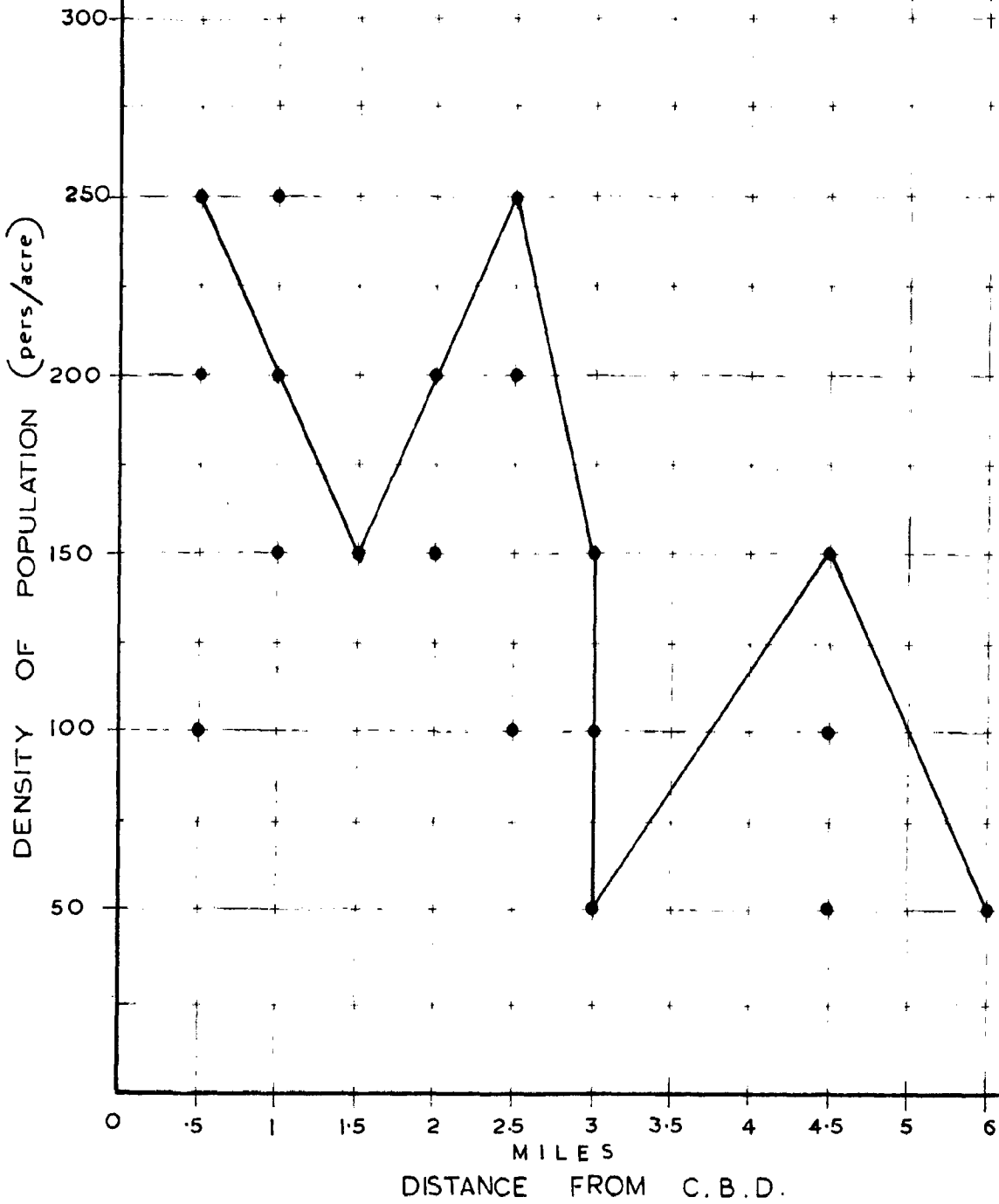


VARANASI

OBSERVATIONS :-

- (i) CONCENTRIC GROWTH
- (ii) MINM. DENSITY 25 PERSON/ACRE SETTLED AT PERIPHERY

FIG. 5



LUCKNOW

OBSERVATIONS :-

- (i) MULTI-NUCLEI GROWTH
- (ii) DEN. 50 PERSONS/ACRE-SETTLED AT PERIPHERY

Varanasi town (Fig. 4) having a population more than 5 lakh and Kanpur town (Ref. Fig. 3) having population of 10 lakh (approx) show that they have attained a set pattern of population density decreases, almost at a constant rate, down to 50 persons per acre or even less on the peripheries of the towns.

Lucknow town (Ref. Fig.5) having a population of 6 lakh shows a totally different trend. Not only the density goes down in order of priority of type of population, but in addition a unique feature can be noted that a town, reaching a certain degree of maturity on its periphery, unlike that of Kanpur, and Varanasi, is also getting a proper consolidation in terms of population.

4.1.1.4 Economic Aspect

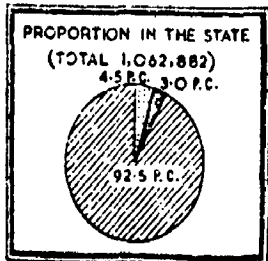
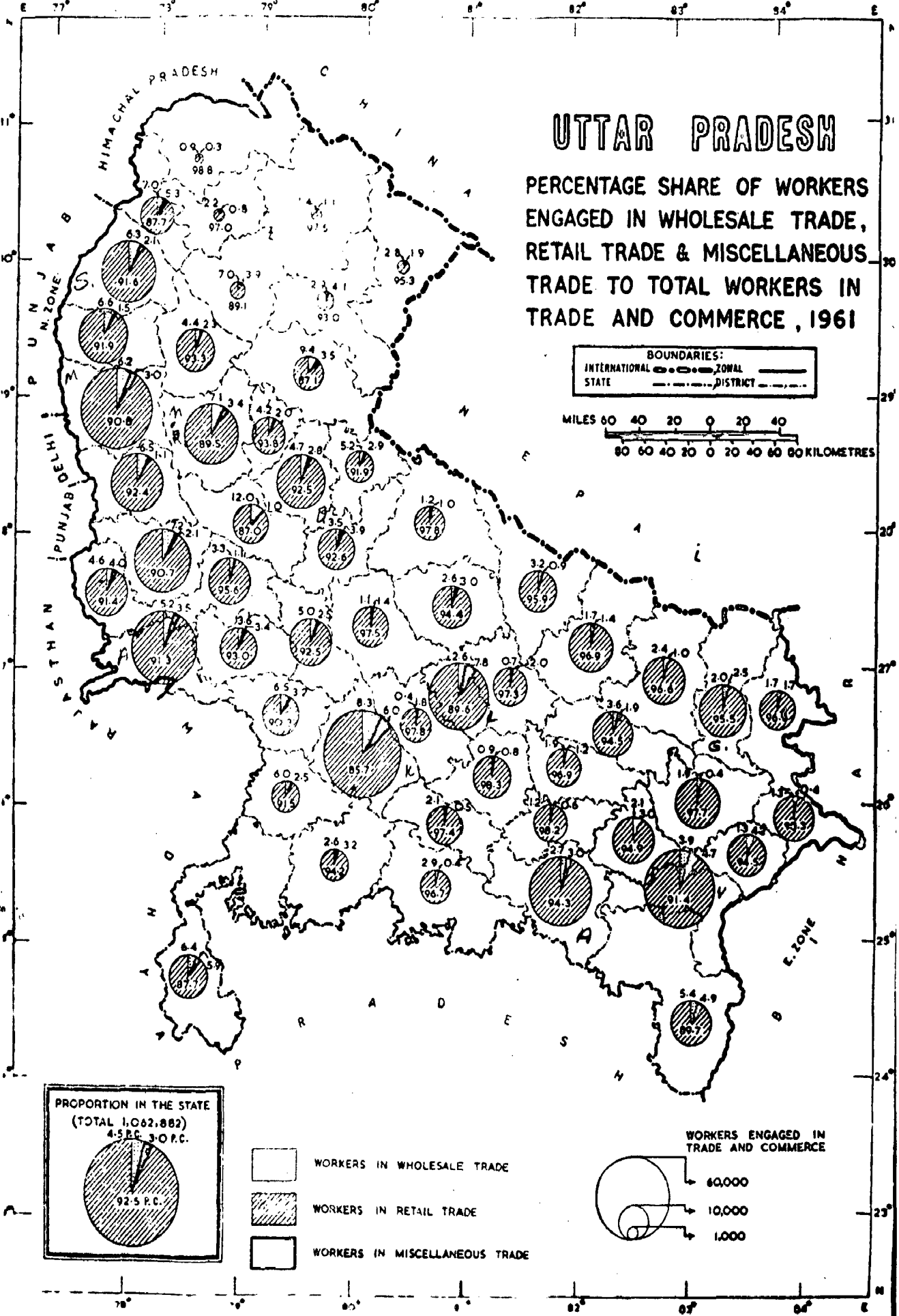
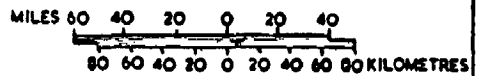
Considering the case of nine of the major towns of Uttar Pradesh (Ref. Table 4 and 5) it can be seen that the individual town ratios of the percentage of total workers employed in trade and commerce, to the total population, ranges between 5% to 6%; and percentage of workers in trade and commerce to the total workers in the town ranges from 16% to 18%. These figures depict that, though, there is considerable difference in the population of these nine towns, which ranges from, the rounded figures of, 2 lakh to 10 lakh, there is hardly any difference in the percentage of workers employed for trade and commerce in the individual cases.

Table 6 show that Bareilly has highest percentage

UTTAR PRADESH

PERCENTAGE SHARE OF WORKERS ENGAGED IN WHOLESALE TRADE, RETAIL TRADE & MISCELLANEOUS TRADE TO TOTAL WORKERS IN TRADE AND COMMERCE, 1961

BOUNDARIES:
 INTERNATIONAL STATE ——— ZONAL ——— DISTRICT - - - - -



WORKERS IN WHOLESALE TRADE
 WORKERS IN RETAIL TRADE
 WORKERS IN MISCELLANEOUS TRADE

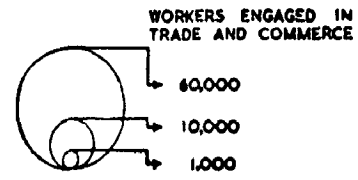


FIG-6

RELATIONSHIP
POPULATION — INDUSTRIAL AREA
IN TOWNS

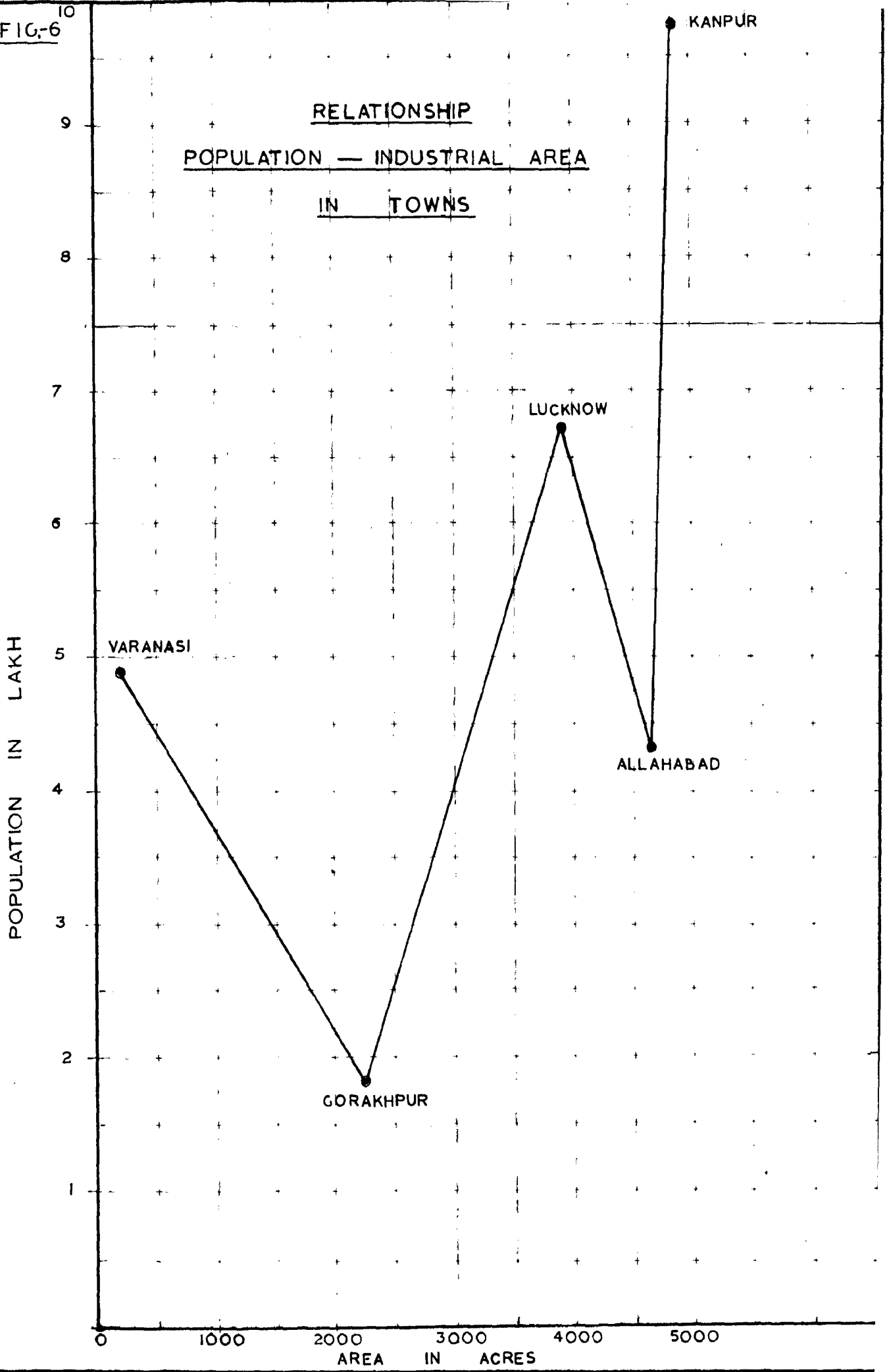


FIG. 7^D

RELATIONSHIP
POPULATION — COMMERCIAL AREA
IN TOWNS

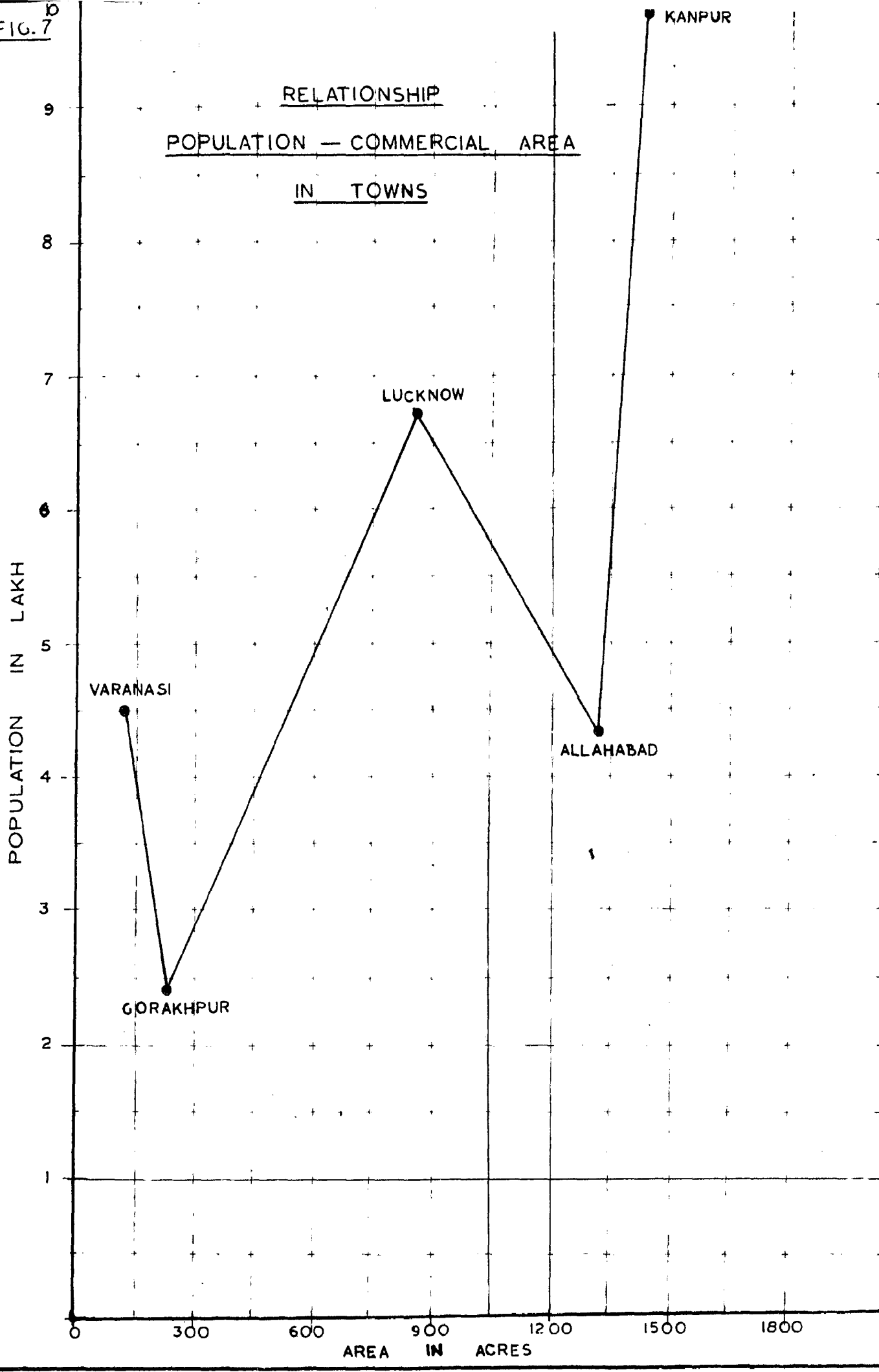


FIG. 8

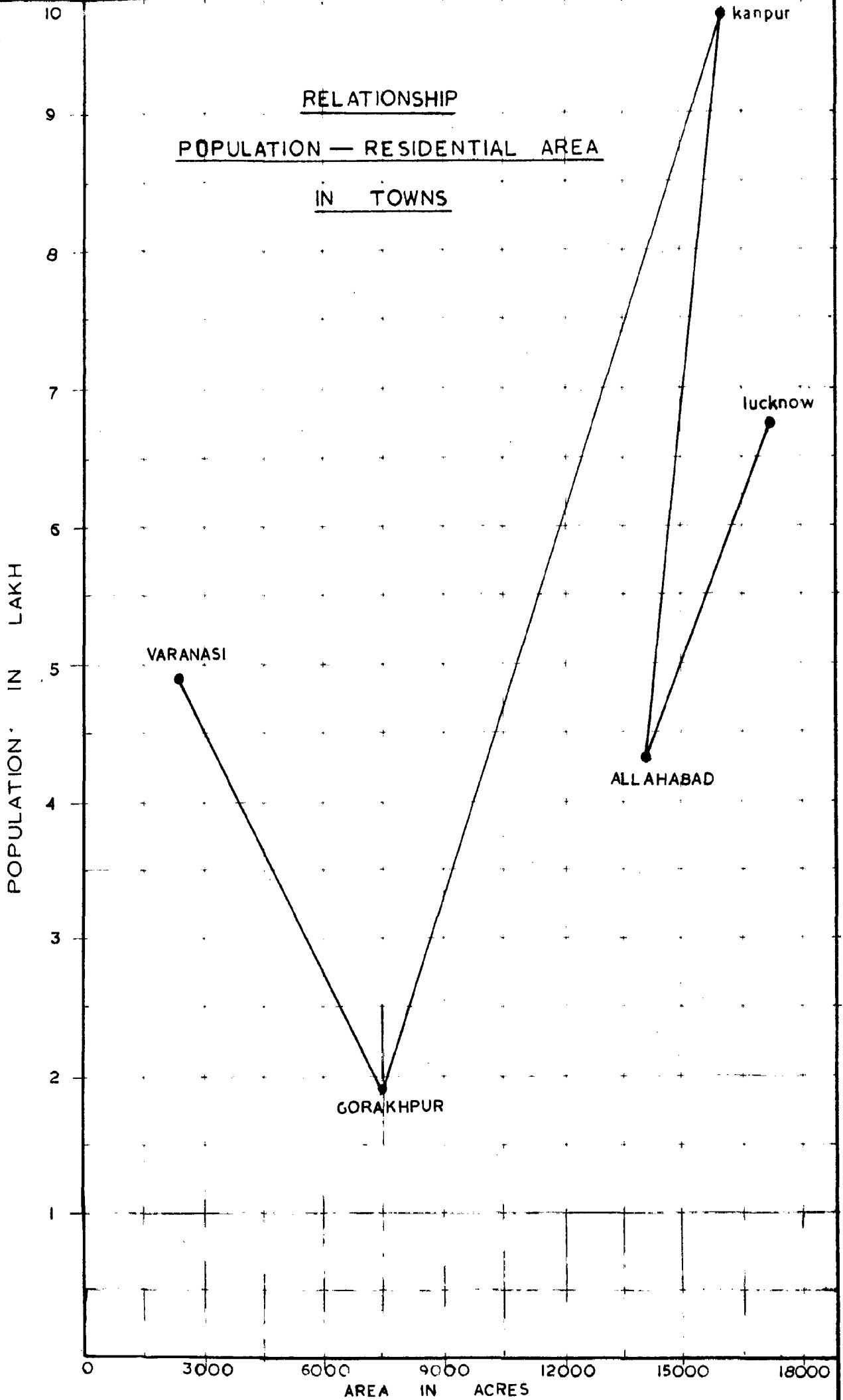


FIG. 9

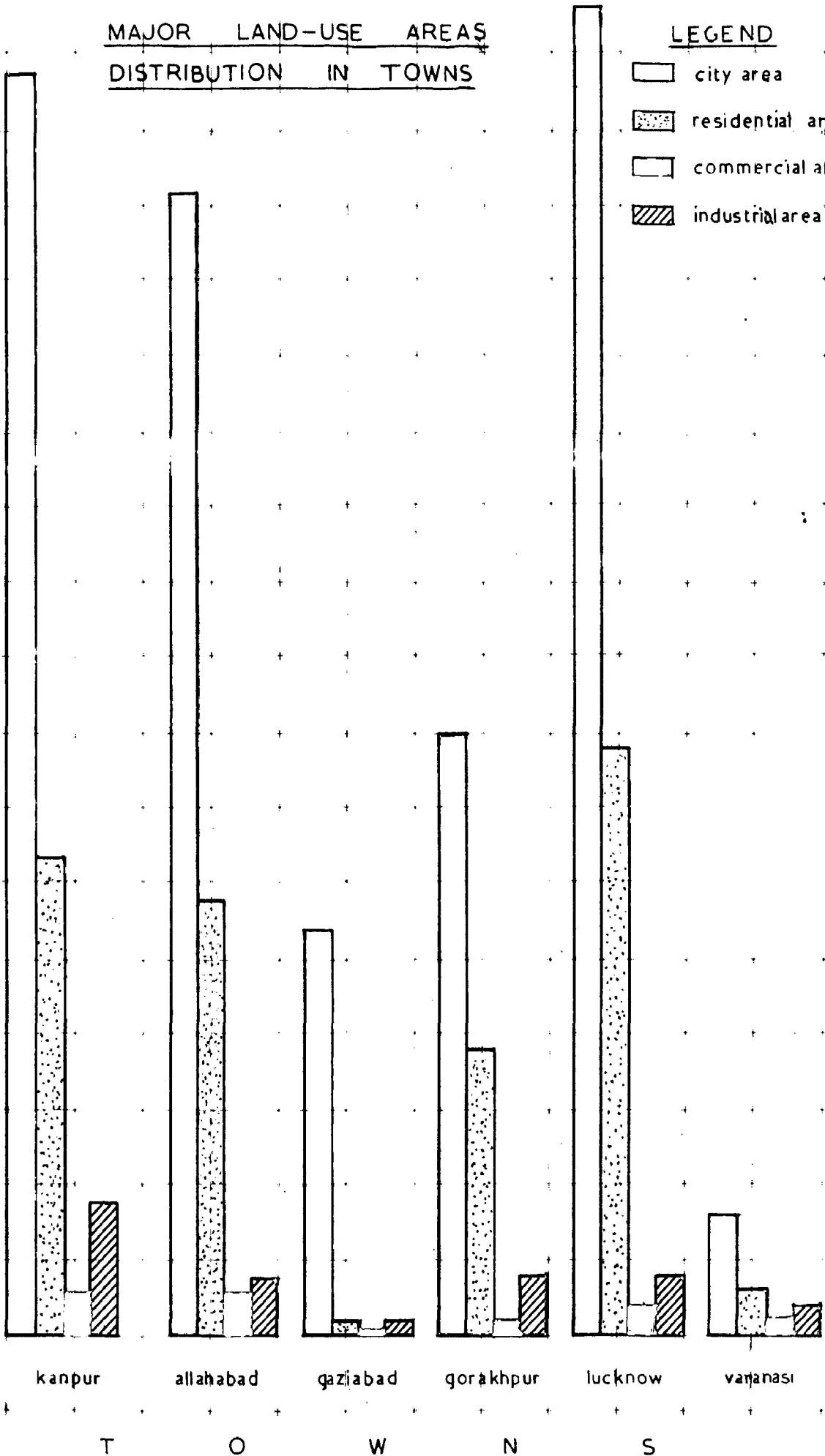
MAJOR LAND-USE AREAS
DISTRIBUTION IN TOWNS

LEGEND

- city area
- residential area
- commercial area
- industrial area

AREA IN ACRES

40000
35000
30000
25000
20000
15000
10000
5000
0



of workers in whole-sale trade and commerce, while Kanpur shows the lowest figures amongst the nine big towns in the state. Similarly the table gives interesting figures of workers in retail trade. Again, among the nine big towns, Kanpur and Moradabad have highest retail percentage while Lucknow and Allahabad have lowest one. In the miscellaneous trade the highest percentage of workers is found in Lucknow and lowest in Saharanpur (Ref. Plate 5B).

The figures 6, 7 and 8 (derived from Table 7) indicate graphically, the comparative population sizes and the land-use provision in various towns, in respect of their industrial, commercial, and residential areas respectively; where as figure 9 shows, diagrammatically the break down of major land-use areas, out of the total area of the towns. These comparative studies tend to reveal that the areal units of these land-uses, specifically the commercial land uses, on the face value may not depend on the size of town, both in population and area, but possibly, be guided more by the intensity of development and internal structure of the Central Business Area.

4.1.2. Intra-City Comparison

The detail study of the relevant land uses of all the four towns taken up for study, has been brought out in the following paragraphs, under the headings of location, accessibility, and composition of Central Business Areas.

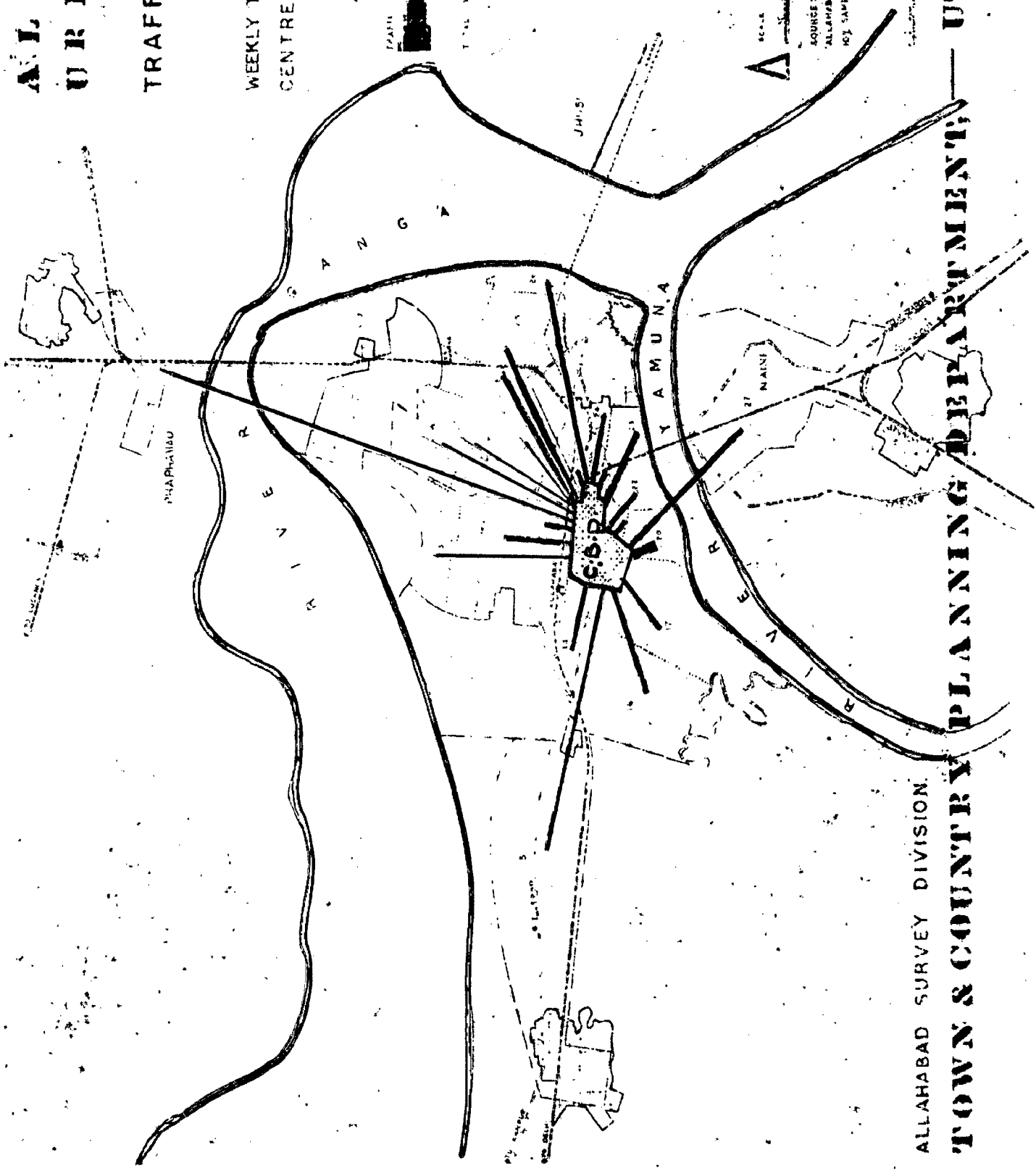
ALLAHABAD URBAN AREA

TRAFFIC STUDIES

WEEKLY TRIPS TO COMMERCIAL
CENTRE (CHOWK) (WARD WISE)



1:10,000 SCALE
TOTAL WEEKLY TRIPS BY ALL VEHICLES



SCALE

SOURCE: ORIGIN & DESTINATION SURVEY CONDUCTED BY
ALLAHABAD SURVEY DIVISION 1954
10% SAMPLE BY HOME INTERVIEW METHOD

100

ALLAHABAD SURVEY DIVISION.
TOWN & COUNTRY PLANNING DEPARTMENT, UTTAR PRADESH.

PLATE NO 14

4.1.2.1 Location

All four towns bear a historic importance due to their origin and being the strategic places for the various rulers for the past. The activity of trade and commerce was established alongwith their initial growth, in the antiquity. This can be said for sure, due to the fact that these towns, which grew along a bank of a river, had their markets along established close to the river bank around some civic element like temple, or central chowk, and the commercial activities started around these civic centres. In the religious town like Varanasi, the west bank of the river has beautiful facade of temples. Behind the curtain of these temples, the commercial activities play with full swing. Similar type of picture is seen in Allahabad. In Kanpur also, commercial areas are established close to the river banks and are encircled by industries and cantonment. In Lucknow, the commercial areas are located almost at a geometrical centre of the town. Here all major roads merge from all directions, connecting the other major towns like Delhi, Kanpur & Allahabad etc. (Ref. Plates 10,11,12 & 13).

4.1.2.2 Accessibility

Plates 10,11,12 and 13 show that the commercial areas in all these towns are within the accessible range of 4 to 5 miles from their respective peripheries. Though, the accessibility in terms of distance is within the convenient range, yet, the time period increases because of the heavy volume of mixed traffic. The traffic study of Allahabad, (Ref. Plate 14) as shown in Plate No.10 shows the evident

congestion in its commercial area.

Traffic survey carried out in Lucknow brings out the following facts :-

90,000 persons per day visit the city for different types of business. Average daily movement to city by bus is 30,000 to 35,000 persons and by railway is 25,000 to 30,000 persons. Daily goods traffic is 44,513 quintals.⁶⁰

Another time consuming factor, which effects the accessibility to commercial areas, is the high density within the commercial areas. In Banaras, the overall density of C.B.D. area is the highest as 900 persons per hectare, while in Allahabad it is 250 persons per acre, where as in Kanpur it is 300 persons per acre, and in Lucknow, comparatively, it is as low as 150 persons/acre.

4.1.2.3 Composition of Central Business Area

Though, the comparable data of the composition of the commercial areas is not available, still the Tables Nos. 13, 14, 15 and 16 show the general trend of the distribution of business units and distribution of land in commercial areas. The table No.13 dealing with distribution of business units by types of business, shows the four types of major activities like retail, whole-sale, commercial establishments and entertainment; but these activities are thoroughly mixed in the commercial areas. In Allahabad retail and whole-sale activities are carried on in one common area. The table

ALLAHABAD URBAN AREA

BUSINESS & COMMERCE

PLAN SHOWING THE EXISTING LOCATION
OF COMMERCIAL ESTABLISHMENTS

LEGEND
□ RETAIL SHOP
■ WHOLESALE SHOP

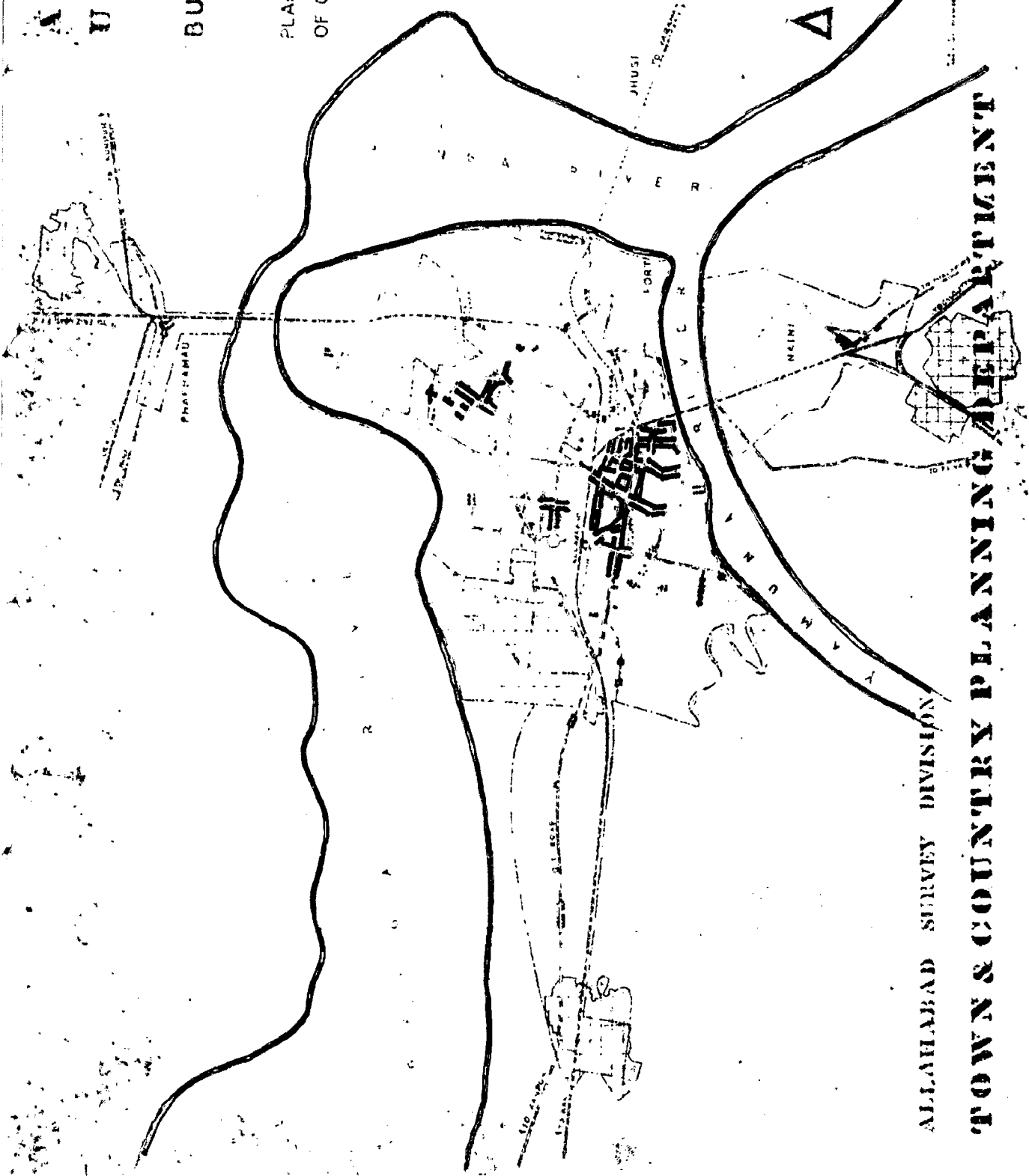


FIELD SURVEY CONDUCTED BY ALLAHABAD SURVEY
DIVISION 1964

2

TOWN & COUNTRY PLANNING DEPARTMENT UTTAR PRADESH

PLATE NO.15



No.8 shows that there is no definite organization of activities as well as of spaces, over which the activities are performed. In spite of the unorganized activities in the commercial areas, the table 14 indicates the positive trend of progress in these areas.

The landuses in commercial area are the admixture of all major landuses. e.g. in Kanpur even the railway yards have occupied the space in the commercial areas.

In all the towns, one character of the commercial area seems evident that the commercial area does not have self identity by itself. The map, showing the study of commercial areas of Allahabad, shows that the commercial area is a network of narrow streets, flanked by the thick strip of commercial activities and the pockets in between the network are filled up by residential or small scale industries (Ref. Plate 15). In Banaras, the cottage industries are adjacent to the retail shopping centres. The Plate No.16 showing the existing land values in the town of Kanpur, indicates that the land value is highest in the commercial area, and decreases towards the farthest end from commercial areas. The figure 9 graphically, indicates that the rate of growth of commercial area does not depend upon the size of the total area of the town. The area sizes of Kanpur, Allahabad and Lucknow towns are almost equal, but the commercial area of Lucknow is approximately double than that of the commercial area of Kanpur, and that of Allahabad is three times more than the Kanpur's. The similar kind of

results are observed in the proportions of the total area of Kanpur, Allahabad and Lucknow towns, to their respective residential and industrial areas.

The Plates No.10,11,12 and 13 showing the distribution pattern of residential densities from C.B.D., gives interesting results for the individual towns. In the case of Allahabad, high density is observed at two points. The first tier of high density is observed within the nearest isopaths of 1/2 mile and second tier is observed within the isopaths at 2 to 3 miles from C.B.D. This result indicates that the other/^{isopaths}~~counter~~ commercial area or an area dedicated to any other potential activity for forming a complex, might be developing at the other point, which in future may take the position as a new central commercial area or supplement the existing one.

In the case of Kanpur, though, the residential density is decreasing with the increase in distance from the Central Business Area, yet, it becomes stable with the minimum density of about 50 persons/acre, which prevails in the areas close to the periphery of the town.

The city of Lucknow shows the multinucleus development of the city; while in Varanasi, though, the present trend shows a uni-nucleus growth, yet, the likelihood of a new commercial complex at about 3 miles from the existing central business area cannot be completely overruled, due to the presence of high density residential growth potential in

this area, which is evident from the existing indications.

4.2 PROBLEMS IN CENTRAL BUSINESS AREAS' OF THE TOWNS

After analysing the factual present state of the overall towns and carrying out a detailed study of the commercial areas, of the following observations, in case of each individual town, on the problems of Central Business Areas have been brought out, in the subsequent paragraphs.

4.2.1. Allahabad Town

The existing physical barriers in the site of Allahabad urban area has blocked the expansion of the city. The city has been bounded by three rivers Ganga, Yamuna and Saraswati (though Saraswati is now dried). In addition to it the settlement close to the river banks, are generally affected, adversely, during the periods when the rivers are in spate.

All major transportation routes including railway lines pass through the centre of the city which disturbs its normal working. Especially, railway line is dividing the city, with, longitudinally and latitudinally.

Business areas are thickly concentrated on south side of the railway station. Main business and commercial area is established in 'Chowk' area. 67% of the total shops (i.e. 4000) are accommodated in this area. The total commercial area comprises of 194 acres which accommodates 4000 shops, 16 banks, 13 Cinemas and 122 hotels and restaurants.⁶¹

The basic characteristics of C.B.D. in Allahabad are (i) C.B.D. is in the proximity of public transport terminal; and post and telegraph services (ii) Off-street parking space is available and (iii) Low rented areas, of depreciated property, are obtainable. Mostly retail and whole-sale shops are along the main roads - G.T., Zero road, Subhashchandra Marg, Jawahar Loknath Lane, Hewati road, Leader road, Attarsinneya road, Laxminarayan road, and in the localities of Muthiganj, Hydganj, Meerganj etc. Out of 67% of commercial area in chowk area 55% is retail business, 8.5% wholesale, 3.5% others (i.e. restaurants, companies, hotels) etc.⁶² Okate B1, 14 shows the concentration of traffic from all directions of town. The area is thickly built up, where residential density is as high as 270 persons/acre. The area is too congested due to narrow lanes and irregular roads, having hardly sufficient community facilities, and with lack of open space. Similarly, drainage is lacking. In short the present conditions of the Central Business Area is in chaotic state. The C.B.D. area of the city is broadly facing the following problems :-

- (i) As the city has physical barriers for its expansion, the area of C.B.D. has remained, almost, unchanged, due to which the intensity has unduely increased.
- (ii) Area has been already over built and there is no possibility of expansion in the area.
- (iii) As all the main transport routes are directing the traffic into the area, the traffic volume has become beyond control, to be accommodated for the existing

- (iv) Railway stations and terminals, are close to the C.B.D., which are facing the parking problems, due to non-availability of space for these purposes.
- (v) The bottlenecks around C.B.D., and congestion of traffic, both together, have made the accessibility to this area, almost impossible, specially from the peripheral areas of the town.

The above problems of C.B.D. areas, have resulted in the obvious decline of the overall business and commercial activity of the town.

4.2.2 Kanpur Town

Kanpur, primarily an industrial and commercial town in the Gangetic belt of Uttar Pradesh, is the only metropolis in the state of U.P. Due to the geographical conditions and earlier establishments of cantonment area, Kanpur city has been limited for its further expansion. City has grown in linear fashion as one side of the city is completely restricted by river banks. The cantonment areas, being, scattered on three different places and directions in the city, have restricted the growth of the city on three sides. The Grand Trunk road has divided the city almost in two equal parts. The other highways from Delhi, Jhansi, Hamirpur etc. pass through the heart of the city, its rapid, haphazard, and unplanned growth has created intricate situation in the city. The industries are established within the dense residential areas. In spite of all these restrictions in the growth of Kanpur town, it has tremendous potentialities for further increase in industries

as well as commerce.

The whole area comprising collecterganj, Nayaganj, Birhana road, Generalganj, Subzimandi and Parade area can be termed as C.B.D. of Kanpur. The whole-sale Markets of grains are located in Collectorganj, Khanna Market in Nayaganj, Vegetable market in Subzimandi, Cloth market in Generalganj, building materials market in Halsy road, Hide and skin market in Parade area.⁶³

The existing density of commercial area has been worked out to be 148 persons/acre. The markets in the absence of godowns and warehouses cause all types of congestion and, insanitary conditions. Market areas have been used for multipurpose viz. residential cum commercial, and retail with whole-sale C.B.D. is surrounded by railway yards and open lands. Transport agencies have added the congestion into the area. Loading and unloading operations are carried out on roads itself. Truck parking and bus parking encroach the roads.

C.B.D. of Kanpur city is facing enormous problems. The C.B.D. area is encircled with the highly dense residential areas and the contonment areas, which have limited the possibility of expansion of the area. Similarly, expansion of the city also has been restricted by the physical barriers and unplanned relation between different uses.

The bus terminals and railway stations are very close to C.B.D. Though, an easy accessibility has been

railway line runs through the town, the development of the city is possible in almost all directions except the direction, blocked by the river Ganges. Even with the available assets for future growth, the city of Varanasi faces a number of problems, e.g. a large percentage (27%) of the total workers are engaged in the traditional cottage industries, but there is hardly any organized space for the workers as well as for the exchangers of the raw materials with the finished products. In the past few years, the city has increased its industrial status, and it is expected that the industrial establishments will further increase because of the cheap labour and power availability and convenient transportation facilities available, in all over the surrounding areas.

Varanasi, primarily, has developed as a religious city. The city has maintained its religious and cultural character. Still it attracts high influx of pilgrims and tourists. In addition to it, Varanasi is a centre of education.

Most of the business and commerce, and small scale and cottage industries, of Varanasi, are concentrated within the heart of the city. There is very little space for loading and unloading of commodities and for parking of public as well as private vehicles, throughout the central commercial complex which extends from Bishweshar Ganj upto Godaulia through Maidagin and chowk. A number of

small industrial concerns are scattered all over the central area. These activities have increased the problems by creating congestion of vehicular traffic and enormous noises. The industries like tobacco, zarda, leather works and chemicals are right in the heart of business area, which are difficult to shift from these areas.

Similar to other cities, business, commercial, & industrial activities are concentrated along the narrow roads of the central city, which generates large volume of traffic. The traffic becomes, further, enormous due to the mixing of this generated volume of traffic with the through regional traffic crossing this area.

The density of workers in this area is approximately 350 person/acre. The one fifth of total workers of Varanasi are working in this area.⁶⁶ It has become the important centre of regional trade, where export and import activities are carried out on large scale.

Survey of business establishments, by Varanasi Survey division, shows the distribution pattern of total business units in the city, as follows:⁶⁷

Category	Type of business	Number
Commodity Handling	Shops	12076 (23.8%)
Non-commodity handling	Commercial entertainment	496 (3.8%)
Recreation & Entertainment	i. Restaurants	186 (1.4%)
	ii. Places of entertainment	125 (1.0%)

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The whole area comprising collecterganj, Nayaganj, Birhana road, Generalganj, Subzimandi and Parade area can be termed as C.B.D. of Kanpur. The whole-sale Markets of grains are located in Collectorganj, Khanna Market in Nayaganj, Vegetable market in Subzimandi, Cloth market in Generalganj, building materials market in Halsy road, Hide and skin market in Parade area.⁶³

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The bus terminals and railway stations are very close to C.B.D. Though, an easy accessibility has been

provided between terminal points and C.B.D. area, yet, it is time consuming due to the congestion created by agglomeration of the heavy fast and slow-moving traffic.

The mode of conveyance, is another faster which creates problems for the town as well as its C.B.D., it being, moving conveyance as Rickshaws, horse driven Khar-Kharas etc. According to the latest data, 10269 Rickshaws, Thelas 15764 and 2.87 lakhs cycles, use the same roads which are used by fast-moving traffic.⁶⁴ Godowns and warehouses right in the market area, create congestion and insanitary conditions. Hide and Skin factories cause abnoxious atmosphere in the city area. Industries, which are located near the C.B.D. area, pollute the environment of C.B.D. area.⁶⁵ There is no restrictions on the use of land and hardly any control over intensity of the use of land, which results in bringing up both, conforming and non-conforming uses, and adding in further generation of traffic to increase congestion on the roads.

4.2.3 Varanasi Town

CENTRAL LIBRARY UNIVERSITY OF ROORKEE
ROORKEE

Varanasi, has been grown in a concentric way around the bank of the river, Ganges. Another tributary of the Ganges, known as Vensia, has divided the city into two parts. The area along the river banks is affected by the floods which are caused when the river is in spate. Similar to the other Indian towns, all major traffic routes radiate towards the centre of the town. Even, though, the

small industrial concerns are scattered all over the central area. These activities have increased the problems by creating congestion of vehicular traffic and enormous noises. The industries like tobacco, zarda, leather works and chemicals are right in the heart of business area, which are difficult to shift from these areas.

Similar to other cities, business, commercial, & industrial activities are concentrated along the narrow roads of the central city, which generates large volume of traffic. The traffic becomes, further, enormous due to the mixing of this generated volume of traffic with the through regional traffic crossing this area.

The density of workers in this area is approximately 350 person/acre. The one fifth of total workers of Varanasi are working in this area.⁶⁶ It has become the important centre of regional trade, where export and import activities are carried out on large scale.

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There is a concentration of whole-sale and retail shopping areas in the main business area. The C.B.D. of Varanasi has 85% of city's whole-sale business units and 74% of the total retail shops. Most of the establishments are approached by narrow lanes and mixed landuse with residential areas. The existing roads are incapable to cater for the generated volume of traffic in this area.

The most important shopping ribbon of the city extends from Godmalia to Chowk Maidagin. All banks, insurance companies, professional institutes are located on these shopping streets. 78% of shops, on this road, deal with the retail goods, and about 40% of shops cover floor area of below 400 sq.ft., individually.

Very little space for off-street parking is available. The only areas left for car parking are chowk area, police station area, which can accomodate maximum 20 cars, in total.

The whole-sale market is located in Bishweshwarganj. The area is always congested by trucks and slow moving traffic.

The assets and drawbacks of the Central Business Area of the city, have been brought out as follows :-

- (a) The location of the C.B.D. is ideal in relation to the existing central market area in chowk and the future extension and development of Varanasi.

- (b) The area is heavily crowded to absorb the future expansion of business units and traffic volume.
- (c) The area faces an acute problem of congestion in traffic, due to an admixture of slow and fast moving vehicles.
- (d) Though, the terminals are within one mile to five miles range, yet, the accessibility to the business area is time consuming and hazardous in nature.
- (e) Future expansion of the city is possible towards its North & West directions; and the fact that present C.B.D. location is likely to change, renders it in-advisable to redevelop this area.

4.2.4 Lucknow Town

Lucknow is basically an administrative town, being capital of Uttar Pradesh. Lucknow city is, geographically, situated between two districts of Lucknow and Faizabad. Lucknow, being, divided into two portions by river Gomati, has four bridges over the river to connect them. This city has great potentialities to develop into a large business centre. The export and import activity is quite on large scale. The town can be expanded towards, Barabanki, Mohalaganj, Sandila, Bahhila, and Talab. These areas have good facilities for transport and communication. They can be developed as centres for storage of commodities.

Lucknow, being an ancient town, had been ruled by various rulers, predominantly, by Muslims. Presently it is the state capital, and has got direct impact all over

Uttar Pradesh. Due to the cottage industries and educational institutions, its zone of influence has gone much beyond its metropolitan zone.

In Lucknow, business area is found almost in geometrical centre of the city area. The whole commercial area covers 240 acres. Almost all important roads and highways, connecting other cities pass through this area. The town shows typical concentric growth around C.B.D. Similar to the other towns, in this area also, population density is highest (250 persons per acre). The Central Business District is within two miles distance from the bus terminus and the railway station. The physical condition of the area is deteriorating. Roads are used for dual purposes; firstly, for movement of traffic, and secondly, as a place for bartering for hawkers etc. The roads are too narrow to accommodate the volume of traffic as well as the bartering activity.

There are a total of 3862 shops and commercial establishments in the city. The dominant market is in food graining and clothing business. The major market is in retail shops as compared to the whole-sale market. 37% of the total shops and commercial units are located in Ganeshganj ward. Next is Hazarat ganj in which 14.27% of the total shops are located. Ahyaganj ward holds third position, having 14% of commercial units. Chowk is the oldest and a renowned business area of the city. 'Chicken' works is flourishing the commercial activity of this area. Business of spices is another important activity of the city.⁶⁸

There are 258 hotels and restaurants in all; and almost all these entertainment units are in the areas of Ganeshganj, Hazarat-ganj, chowk and Wazirganj.

The general condition discussed above presents the following major problems in the commercial areas :-

- (a) Geographical position of the city has become the obstruction in the efficiency of the commercial activities of the town. Location of the C.B.D., being almost in the geometrical centre of the city, the traffic flow from all directions pours in, which creates congestion of traffic on its roads.
- (b) Town has developed beyond the river, too, and the linkage provided through bridges, create bottlenecks for the traffic, which further increases congestion in C.B.D. area.
- (c) The C.B.D. area being encircled by the dense residential areas, there is no possibility of its expansion to cater for any future growth.
- (d) Around the C.B.D., all cross junctions are the bottlenecks for the traffic movement.
- (e) Bus terminals and railway station being close to C.B.D., all heavy traffic has to cross the commercial areas.
- (f) Parking system is inefficient.
- (g) Roads are encroached by the hawkers, who restrict the movement of traffic.

- (h) Though, the C.B.D. Area has remained constant, yet, the intensity of its landuses have increased considerably, which has resulted in its inefficient functioning.

4.3 PROBLEMS FOR CENTRAL BUSINESS AREAS AS GIVEN IN MASTER PLANS OF THE TOWNS

4.3.1 Proposals for C.B.D. Allahabad Town

A hierarchy of commercial areas has been proposed for the shopping requirements of the city, as follows:-

I. General Business and Commercial District

This area includes the main shopping centre in chowk, katra and colonelganj. However these areas cannot function as a city centre due to the limits for its further expansion. The existing whole-sale market in Muthiganj is proposed to be redeveloped in planned manner with proper provision of parking, loading and unloading facilities. This market can provide all needs of all planning districts besides the requirements of regional market centre.

II. City Centre

The city centre include all superior public, semi-public amenities like big commercial offices, supermarkets, local shoppings, and recreational facilities etc. Plan provides for 150 acres of land.

III. Sub-city Centre

Sub-city centre - covers an area of 100 acres. This centre will have separate whole-sale market and transport terminals and other facilities which will be worked out in comprehensive master plan.

IV. District Centre

District centre includes all the amenities proposed to be provided in city centre on small scale, except those which can be offered only by city centre. All district centres are proposed, away from city centre or sub-city centre. The allocation of area depends upon neighbourhood community, but roughly it is between 10 to 15 acres.

4.3.2 Proposals of C.B.A. - Kanpur

Master plan of Kanpur has proposed 406.7 acres of land to be under commercial area use; 1.9% of built up area; 1.4% developed area; and 0.5% of total incorporated area.

Master Plan has recommended the following :-

F.A.R.	300
Maximum ground floor coverage	50%
Covered garages for car	5%
First floor coverage	50%
Second floor coverage above	30%
For a new C.B.D.-recommendations are as follows:	
F.A.R.	150
Maximum coverage on Ground floor including parking	50%
First floor coverage including parking	40%
subsequent floors	30%

Basement is allowed till ground floor coverage.

No further information regarding solving the problems in Central Business Areas of Kanpur city is available in its Master Plan.

4.3.3 Proposals for C.B.D. - Lucknow Town

Lucknow city's Master Plan has proposed five planning districts, comparable with the community's structure group of 150,000 to 520,000 population. These districts take into account the land values, distance, topographical features, natural boundaries and transportation lanes.

District A

District A covers 10377 acres (18.35%) of total urban area. The main feature of the district is, the city centre which forms the heart of the city, having almost every facility which an administrative capital and commercial city should possess. These facilities include Governmental offices, central business districts, commercial firms, banks, community hall, stadium, zoo, Museum, library, parks and other active and passive places of recreations. The residential density in the zone ranges from (maximum) 250 to 50 (maximum) persons per acre, depending upon the existing trend of residential density in this district.

District B

98.52 acres (1.32%) for neighbourhood centre.

District C

Faizabad road is proposed as a grain Mandi because food grain mostly comes from Faizabad, commercial area is proposed as 282.27 acres (3.6%).

District D

Commercial area is proposed 156 acres (1.82%) as a neighbourhood centre.

Whole-sale Market

At present Lucknow has two fruit and vegetable markets; one at chowk and the other at Kaiserbagh. Both the markets, together, are insufficient to meet the demands of the whole city. So the markets were developing throughout the city and were creating traffic problems. In the view of this fact, it is proposed to shift whole-sale market on the out, skirts, and the retail shopping to be developed inside the area with local regional shopping centres. Whole-sale Commercial areas have been earmarked on Faizabad road, and Sitapur road.

4.3.4 Proposals for C.B.D. - Varanasi Town

In 1991, the number of the workers in trade and commerce is expected to be about 37193 as compared to 31,000 workers engaged in such activities in the year 1961. Hence in the master plan, provision for 140,000 workers, living within the town, has been made in the business cum commercial areas of the city. Density is provided as 165 workers/acre or a gross area provision of 265 sq.ft/worker.

I. Central Business District

New central business district between the existing cantonment and the Varuna river has been proposed. At present a part of this area is occupied by automobile industry

small retail shops, tourists hotels and other buildings like Church, Schools and Offices. The location of this C.B.D. is ideal in relation to existing central marketing area in chowk and the future extension and development of Varanasi.

II. Sub-Central Business District

The present central marketing area in chowk is proposed as the sub-central business district of the city.

III. District Centres

District business centres will include additional space for cultural facilities and administrative offices in each of the residential districts.

IV. Sub-District Centres

Sub-districts centres have been introduced where the physical dimensions of residential areas reach beyond a convenient size.

V. Local Shops

Smaller shopping centres within easy reach of local residents for 5000 to 10,000 population (Neighbourhood).

VI. Ware-houses Storage

Warehouses and storage facilities will be developed near industrial sites, and near central network of transportation.

VII Whole-sale Market

Some specialized markets like food grain within and around the central city are proposed to shift from the central

place to new proposed sites. Markets like Silk Sari etc. are difficult to shift. The process of shifting of these markets will considerably disintegrate these markets.

The whole- basis for new commercial areas is to decentralize the concentrated enterprises, and trade and commercial activities, and to provide better shopping accommodation and more area for temples and historic monuments, within the central area.

RECOMMENDATIONS

- (i) All new shopping areas will have separation between movement of pedestrian and vehicular traffic.
- (ii) Loading, unloading will be done from service roads.
- (iii) F.A.R. is 1.5 to 3.0
50% coverage of total floor area.

CHAPTER - V

CONCLUSION AND SUGGESTIONS

The composit picture, that emerges from the study carried out in the preceding chapters, indicates in the first instant, - the basic concept of Central Business District, its interpretation by different experts, various development stages of the basic concept, and historical background of Indian markets, and in addition, it reveals the configurations of business areas of the selected towns in Uttar Pradesh State, in terms of their co-relation with the size, areas as well as the existing pattern of Business Areas in those towns. This chapter attempts to conclude the study by forwarding general characteristics of the Business areas; varifies the viability of the concept to suit the Indian conditions; and lastly, to suggest certain methodology to simulate the inter-actions among spatial pattern of Business Areas.

5.1 GENERAL TRENDS OF CENTRAL BUSINESS AREAS IN UTTAR PRADESH

The detailed study carried out by analysing the four important towns of Uttar Pradesh leads to assimilate the following observations to show the overall trend of its Central Business Areas:-

(a) Growth Pattern:

Though, the physiographic conditions of all the towns are almost the same, yet, the growth pattern followed by the individual towns and their business areas, differ to a considerable extent due to their

social and economic factors.

(b) Organic Growth

The general picture, drawn from the changing form of the town, over the past period. Since then origin, shows the extreme organic growth of these towns. The Business areas of these towns, also, have been following a parallel organic growth to meet the increasing requirements of the growing town.

(c) Origin of Business Areas

The main Business Areas of these towns have their origin, either along a bank of a river, or around a civic centre a feature of historical importance.

(d) Location of Central Business Areas

The location of Central Business area is not, necessarily, in the centre of the towns, due to the organic growth pattern followed by the settlements.

(e) Growth Potentials & Barriers

The Central Business areas, which are generally called by the name of 'CHOWKS' in these towns, have the barriers in their growth, due to the intensive growth of other landuses around the chowks; which forces to over intensify the use of the existing chowk areas.

(f) **Mixed Landuses**

The Central Business areas in these towns comprise of not only its basic elements (commercial, wholesale & retail shopping, low-rental residences, small scale industries, entertainments & reside recreational enterprises etc.) but are thoroughly mixed to any amount of intensity with other major landuses like heavy industries, residential, Educational etc., to an extent that there is hardly any open space left for the overall community use and to meet the basic requirements for creating healthy environment from the sanitation point of view.

(g) **Mixed Traffic**

All major regional routes from the other towns pass through the Central Business Areas, which create an admixture of the heavy regional traffic and the slow moving (rickshaw, tonga, cycle, bullock carts etc.) traffic of the local town. This creates congestion and over crowding in the area to effect the efficient functioning of the business areas. The efficiency of the circulation area is further reduced due to its dual functioning; as apart from its basic use of carrying out movements, it is also used by the hawkers for performing their business activities.

(h) **Delineation of Central Business Areas**

There is hardly any precise boundary demarcated

around the marketing areas to say for sure,

5.2 VIABILITY OF THE CONCEPT FOR INDIAN CONDITIONS

Uttar Pradesh, being biggest State in India, can be taken as a representative for the whole country; and its towns as analogous for the other towns in India. With this presumption, the characteristics of business areas in India can be generalised as below:-

5.2.1 General Characteristics of Business Areas

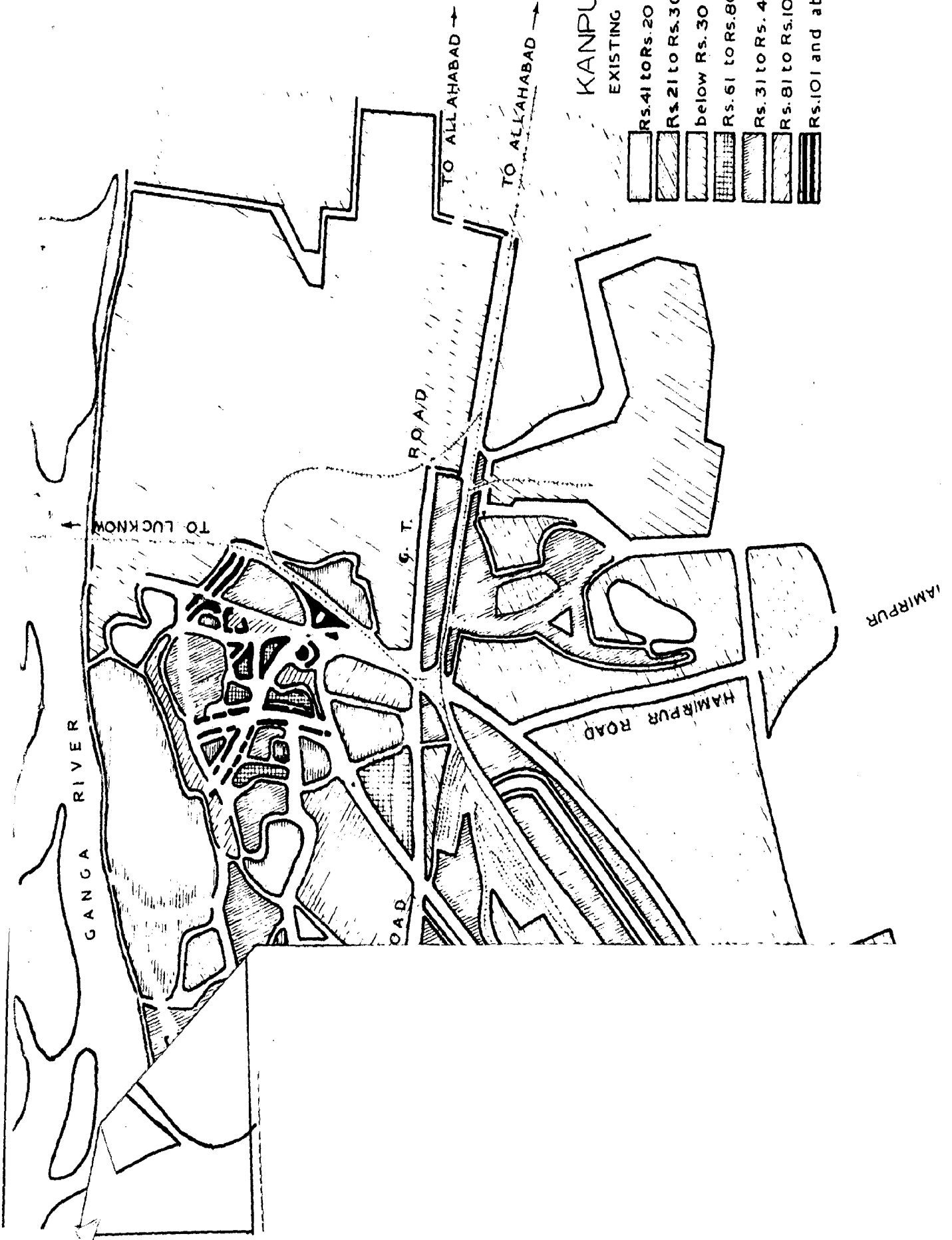
Besides the factors mentioned for the business areas in U.P. towns, the following additional factors, giving a typical character to Indian Bazars have been brought out, which are mainly based on the author's personal observations.

(a) **Historical Influence on Physical Environment of Business Areas**

The business areas, having deep rooted historical base, are continued to be used, even to-day, as a focal point of attraction of a city which imparts a mixed character of traditional and modern type to the overall set up.

(b) **Lack of Hierarchy in Business Areas**

Indian towns do not show any sort of organized hierarchy in business activities. Only two types of business areas are observed in our towns, viz (i) main business area, and (ii) local shops in residential areas.



KANPUR TOW

EXISTING LAND VALL

- Rs. 41 to Rs. 20 per sq. yarc
- Rs. 21 to Rs. 30 per sq. yar
- below Rs. 30 per sq. yarc
- Rs. 61 to Rs. 80 per sq. ya
- Rs. 31 to Rs. 40 per sq. y.
- Rs. 81 to Rs. 100 per sq. y
- Rs. 101 and above

in these old business areas; and in the process, the physical environmental factor, in the business areas, has been superseded.

(f) **Functional Characteristics of the Business Areas**

The business area of either a commercial town, religious town, capital town & industrial town reflect the respective characteristics of the town through the physical environment of the areas, the type of goods under transactions.

5.2.2 Suitability of the Concept

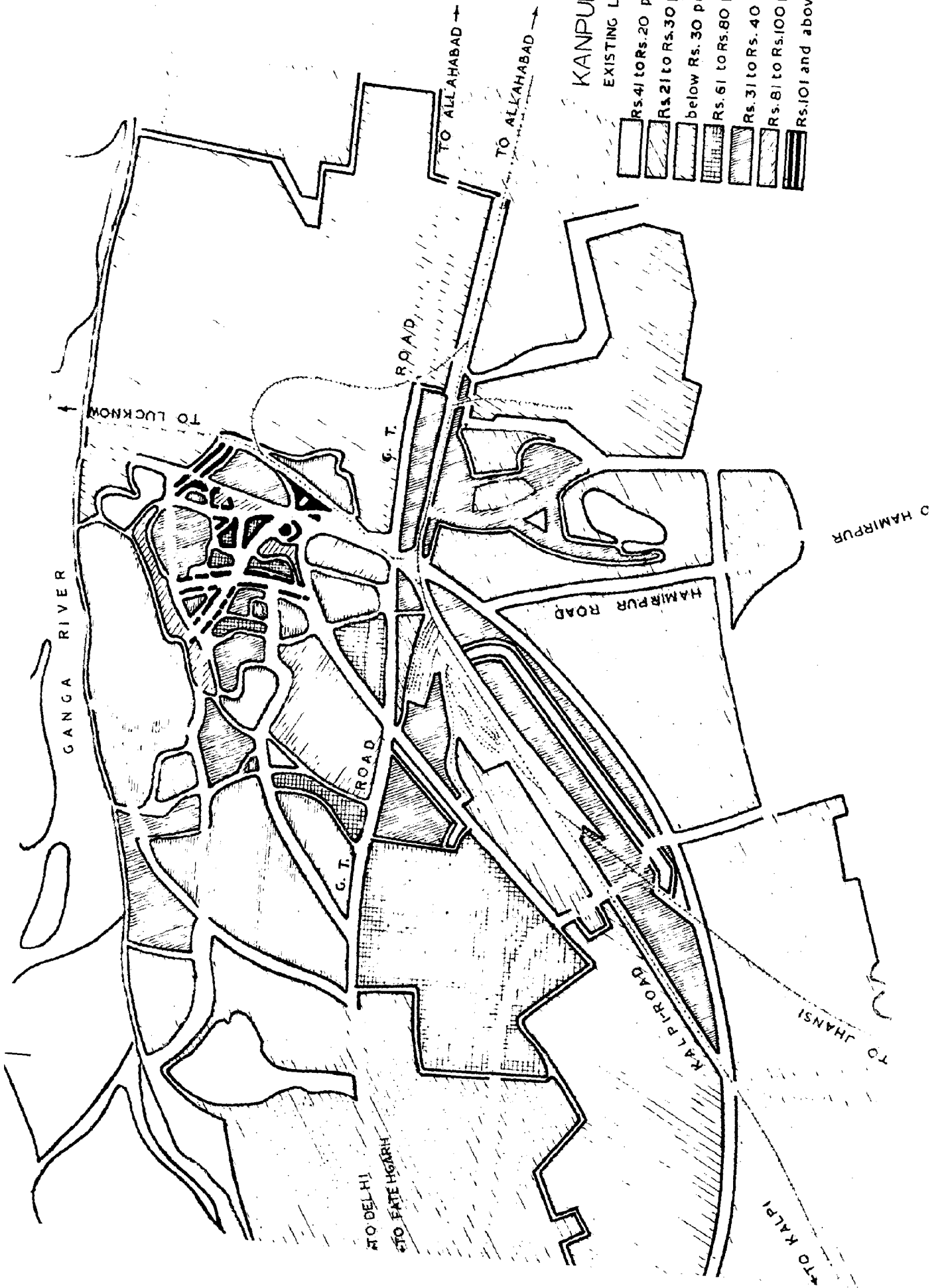
The over all characteristics, so far studied, of the business areas in India as well as in West, lead to ascertain the following basic differences:

(a) **Modifications of Original Form:**

The present form of business areas of both, India as well as the west seem to be the outcome of their respective original forms, with slight modifications. It can be seen from the fact that the 'ship Indian Bazars' are more or less, still possessing a similar configuration, and the 'Agora' of the West has been adopted by substituting its 'Open Plazas' with ~~center~~ parks and its 'Public Buildings' with commercial offices.

(b) **Organisation of Sub-Catagories of Landuses in Business Areas**

The C.B.D. in the west have organised sub-catagories of landuses, as shown in the Brevard's plan of



(c) **Uncontrolled Land use of Business Area**

There is a lack of qualitative and quantitative control over the use of land in business areas. The result is, that the business area does not specify the business activity in terms of its intensity.

(d) **Social-Economic Factors Affecting the Character**

In India this factor is predominantly responsible for giving a typical character to its business areas. This factor's influence can be judged through the attitudes of the people, who have a tendency for choosing a particular market area out of the existing ones; which in turn depends on (i) Specific type of shopping requirements, (ii) conservative attitudes for traditional markets, (iii) Safety, (iv) convenience and (v) time factor involved.

(e) **Coalescence of Socio-Economic Activities**

On one side Sociologically, the herideterial traditions attract people towards the old business areas; and on the other side, the earlier establishments, which are, running on the previous low rental lands are comparatively, economical from both, the consumers and as well as the traders; point of view. Thus, the coalescence of the socio-economic forces have increased the intensity as well as the potentialities of the activities of trade and commerce;

in these old business areas; and in the process, the physical environmental factor, in the business areas, has been superseded.

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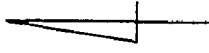
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BREVARD
NORTH CAROLINA



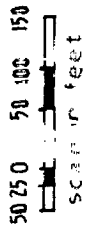
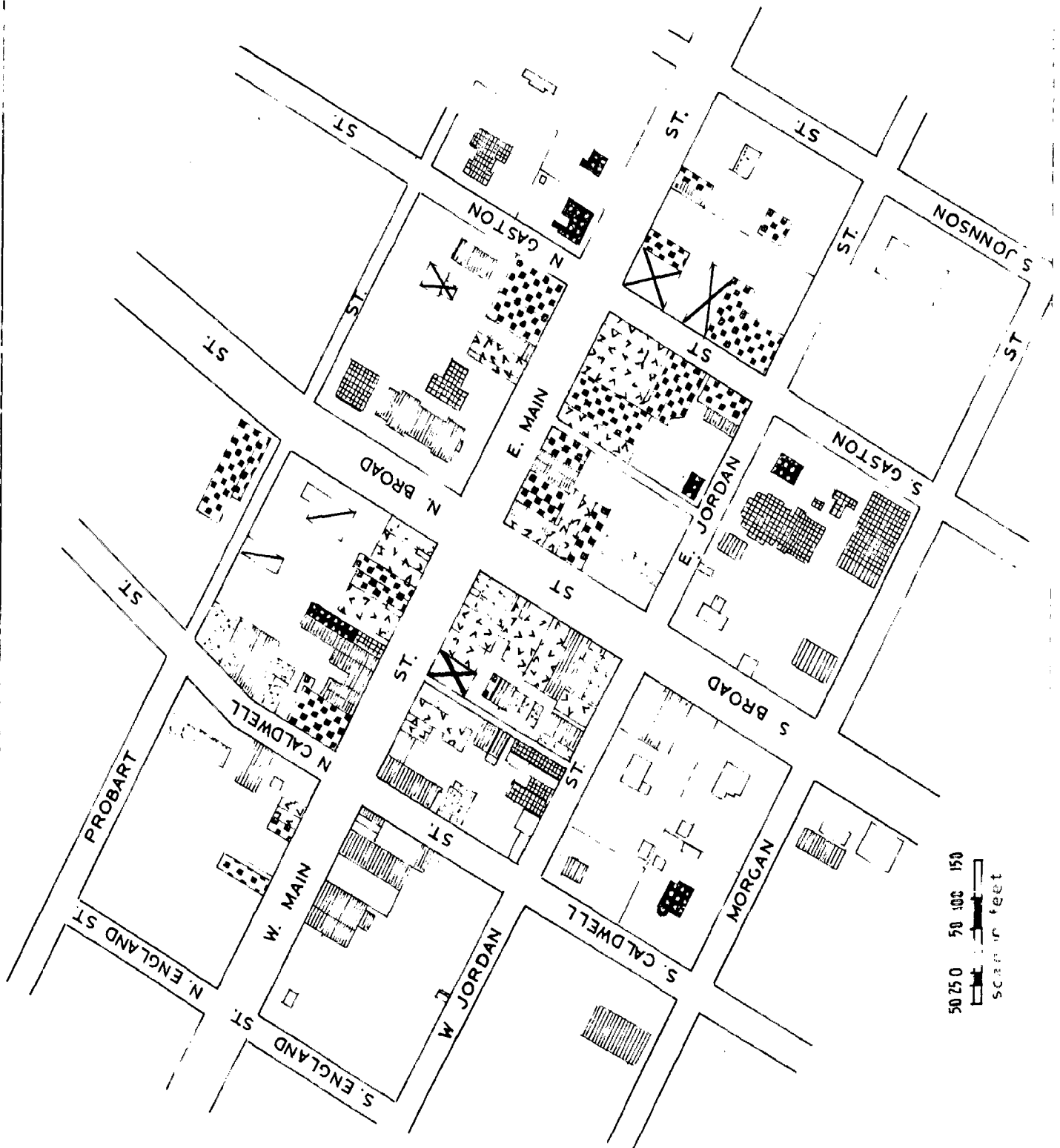
EXISTING

C.B.D. LAND USE

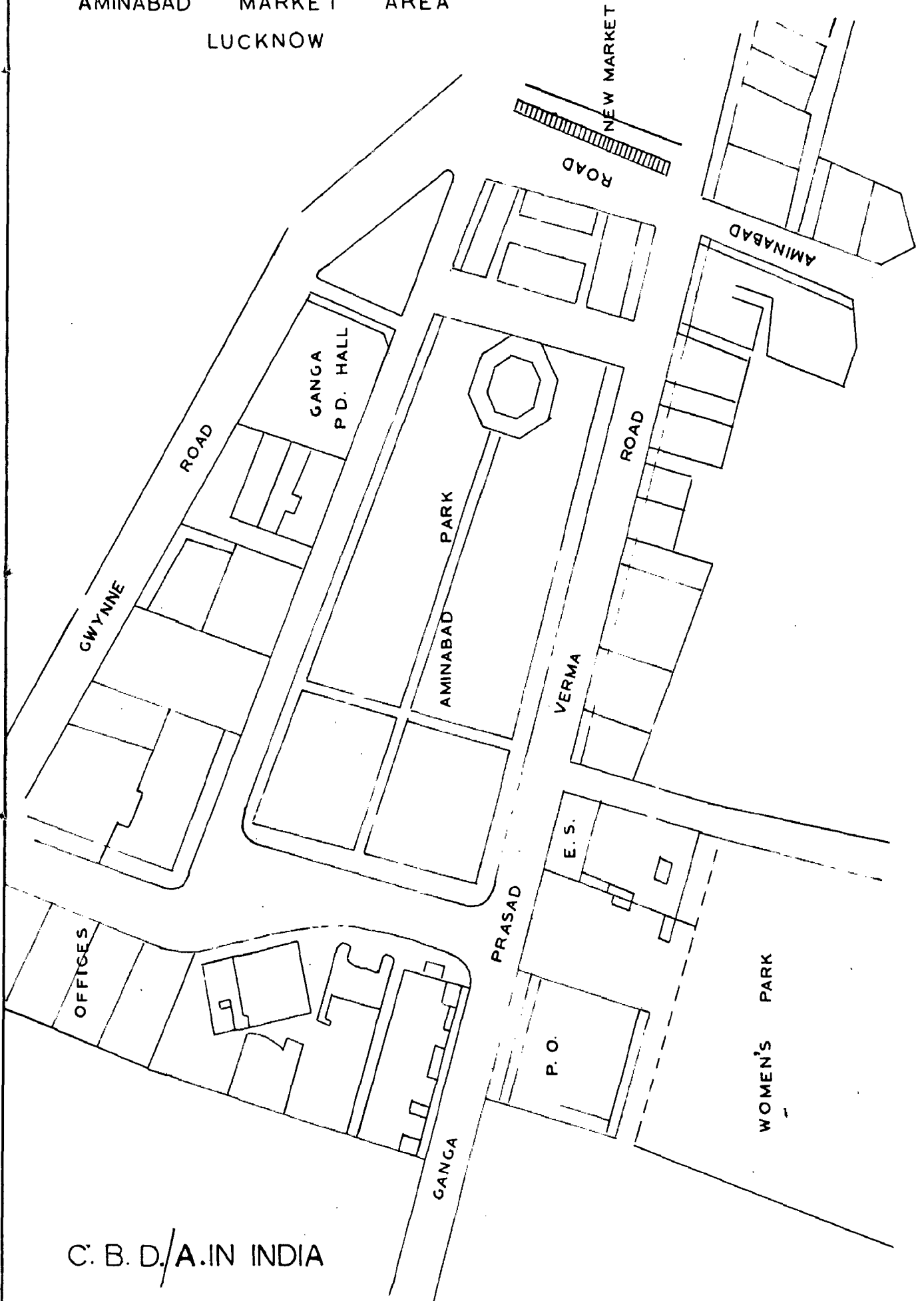
LEGEND

- transportation
- production & manufacturing
- primary retail
- secondary retail
- convenience retail
- services
- social & cultural
- residential

C.B.D. IN WEST



AMINABAD MARKET AREA
LUCKNOW



C. B. D./A. IN INDIA

C.B.D. (Ref. Plate No.19); whereas the Indian Business areas do not depict any sort of organisation in its subcategorised landuses, as show in (i) part plan of the business area of Lucknow (Ref. Plate No.18) & (ii) Commercial landuse plan of Allahabad (Ref. Plate No.15).

(c) Delineation of C.B.D./C.B.A.

The examples under (b) above, further conforms, that the central business districts in West can be distinctly seen due to their definite delineation, as compared to the business areas in India. In short Central Business Districts have an "entity" by themselves in the western cities, against Central Business Areas in India which are completely merged with the rest of the town.

(d) Locations of C.B.D./C.B.A. in the City

Central Business Districts in the west are almost found at the "cross roads" and usually are located in the Centre of the city; where in India location is not necessarily in the centre.

(e) Hierarchy of Business Areas

In West, generally there is a 'Single' Central business area, and other business areas are distributed, in the city, with certain hierarchy; while in India in many cases more than one Central Business Areas are observed with almost missing hierarchy.

(f) **Socio-psychological and Economic Effects**

In West, the people have more adoptibility as compared to the traditional attitude of Indian people. This In addition, the earlier establishments, running on low-rental lands, are even today, are holding unique position, in Central Business Areas in India; and are responsible for impregnating the potentialities and for increasing the intensity of the trade and commerce activities in these areas.

(g) **Physical Environment**

The Central Business Areas in the West gives a uniform, contemporary character through its planned, organized areas and modern structures, while, business areas in India, as they are continued to be used, with their earlier physical form (i.e. mediaeval roads & structures) adopting the modern requirements, give a "mixed" character of traditional & modern environment.

The review of these basic differences between the two concepts, apprehends the author, that the exact implication of the concept of the West, would be cumbersome for the Indian conditions. Though, the basic functions of business areas in both the cases are the same, (i.e. to sell and to purchase goods and services) yet, the Western concept would require certain modifications to cope up with the concomitants circumstances in India.

5.2.3 Suggestions

The author, here is tempted to enlighten certain modifications which would be helpful, while adopting the above concept, in our situation.

(a) Hierarchy of Business Areas

The Indian towns show a natural trend to have mainly two types of business areas; one is main business areas and the other is local shoppings. It would, possibly, be more logical to encourage more number of Central Business Areas and local shops in the town in-stead of adopting the complete hierarchy of business areas (i.e. C.B.D., Sub-C.B.D. District Centre, Sub-District Centre and local shops, as proposed in all Master Plans). This process may help to have natural decentralization of Central Business Areas; and consequently would help to minimize the distance, for supply of goods, transport cost, traffic concentration at one place, and time factors etc.

(b) Organisation of Sub-Categories of Landuses

It would be more practical to maintain the basic pattern of "Strip bazars", with little modification, and better organization of the elements of business areas.

5.3 FUTURE SCOPE

In this report, the author has tried to enliven to a limited extent, the pros & cons of the adaptability of the concept of Central Business District in Indian conditions, though, the findings of this report could not be pragmatic due to the limitations, constraints and inadequate data, yet it probes a few areas which could be further studied to supplement and to make it an authentic study. Thus, further probing can be done to :

- (a) study the Central Business Areas in terms of their physical disposition, floor space ratio, land values, rate of return from the business areas, the traffic volume pertinent to Central Business Areas, growth of Central Business Areas based on "areal unit" as well as intensity of business activity etc. Such information, if made available would enable the detailed study of the internal structure of Central Business Areas, with the help of the suggested methodology of scatter graphs as brought out in this report. (Ref. Figs. 2,3,4 &5)
- (b) A specific study can be carried out to laydown the specific elements of C.B.A. this area, their disposition, distribution, areal percentages etc. This would enable to draw a detailed perspective of "Central Business Area" from its three dimensions of its "growth", "physical environment" and "Socio-economic structure".

- (c) The new techniques developed to study such areas can be utilized. As e.g. recently, Mr. David Crowther and Marcial Echnique have developed a new model to understand and delineate the spatial structure of the city, which has constant changing interaction among its elements. This model helps: ⁶⁹
- (i) To simulate equilibrium of spatial system at given moment in time.
 - (ii) To reproduce not only the urban structure which exists but all those which could logically exist if those elements of spatial structure represented by the inputs were to be changed in corresponding manner.
 - (iii) To represent the elements of spatial system and relation between them.
 - (iv) To determine a unique selection, for the most likely state of the spatial system, for a particular set of input.

APPENDIX 'A'COLLECTED LIST OF TOTAL DATA**(A) MAPS**

1. Master Plans - Allahabad, Banaras, Lucknow, Kanpur
2. Existing landuse plan - Kanpur
3. Zoning Map - Allahabad
4. Physical barriers - Banaras, Allahabad
5. Volume Traffic counts - Kanpur
6. Incoming and outgoing traffic - Kanpur
7. Density of population - Kanpur
8. Existing land value - Kanpur
9. Historical growth of recreational facilities-Kanpur
10. Functional Zones
11. Traffic study - Allahabad
12. Workers of different industries-word wise locations & strength of Industrial workers-Allahabad
13. Direction of urban growth - Allahabad
14. Density of population - Allahabad
15. Plan showing existing location of commercial establishments. - Allahabad
16. Historical development of Lucknow.

(B) TABLES

- Lucknow Town
1. Wardwise shops and commercial establishment
 2. Distribution of business units in ranges F.L.A. to employment size
 3. Wardwise population, area & density figures(1961)
 4. Average peak-hour traffic.

- Varanasi Town**
1. Percentage of commercial area to sub-category of commercial area.
 2. Growth of population
 3. Ward-wise population distribution
 4. Analysis of traffic flow.
 5. Percentage carried by bus on various routes and number of trips performed in 1964.
 6. Change in working force in commercial sector from 1911 to 1961.
 7. Distribution pattern of business units in 1966.
 8. Employment size in different types of business units.
 9. Spatial distribution of shops 1965.
 10. Anticipated employment size in commercial area.
 11. Area occupied by shops of selected markets of C.B.D. - 1965.
 12. Proposed land-uses
 13. Proposed planning districts.
- Allahabad Town**
1. Percentage distribution of shops in commercial zone.
 2. Percentage of distribution of shops in commercial zone.
 3. Ward-wise distribution of shops into various categories and their %age.
 4. Percentage distribution of shops according to the origin of commodity imported to Allahabad.
 5. Percentage distribution of units classified in ranges of F.A. to employment size.
 6. Anticipated distribution of growth.
 7. Density of various parts in city.

- Kanpur Town
1. Distribution of residential area
 2. Total morning & evening peak-hour traffic, volume.
 3. Existing density pattern.

(C) FIGURES

- Lucknow
1. Population growth - 1921 & 1961
 2. Total commercial establishments
 3. Number of persons visit to a city for business purpose.
 4. Average daily movement by bus & railway
 5. Proposed land-uses
 6. City area, commercial area
 7. F.A.R.

- Banaras
1. Gross-density of Central Area.

- Allaha-bad
1. Area of total city
(History from 1880 to 1960)
 2. Number of shops in total area

- Kanpur
1. Commercial area to city area
 2. Recommendation - F.A.R.
 3. Percentage analysis of land-use of sub-categories in C.B.D.

APPENDIX 'B'POPULATION, AREA AND DENSITY FIGURES IN LUCKNOW TOWN GROUP

(BY WARDS)

Wards	Total area Hectare	Population (1961)	Density/ hectare
Lucknow Town group	11229.00	655673	58
Municipal Corporation	8046.20	595440	74
Narhi	420	15986	38
Hazratganj	430	15788	37
Nagarbagh	91.60	18705	204
Barud Khana	152.5	14116	93
Husenganj	83	20683	249
Lalkuan	65	17540	268
Ganeshganj	34.90	18238	52.3

APPENDIX 'C'WARD-WISE SHOPS AND COMMERCIAL ESTABLISHMENTS OF
LUCKNOW TOWN

Ward	'Cloth ' $\frac{5}{}$	'Speces '&gene- 'ral mer' '-chant	'Food 'grai- 'ns	'Paper '& 'Sta- 'tion- 'ary	'Elect. 'appl.	'Hotel '& 'rest.	'Iron 'hard 'ware 'buil 'ding 'mat.	'Scien- 'tific 'medi- 'cines
1	2	3	4	5	6	7	8	9
Ganeshganj	60	33	25	59.5	45	44	39	39
Yahiyaganj	5	12.6	17	11.6	2.5	5	21	14.4
Waziraganj	1	12.4	8	5.4	6	8	4	5.5
Chowk	15	19	7.8	3.4	6	10.4	3.5	8
Hazaratganj	7	6.19	5	13.7	36	24	9	24.8
Hasanganj	5.88	6	20.6	3.4	1.7	3.8	7	2.49
Daulatganj	0.15	0.2	1			0.38	3	-
Sadatganj	0.30	2.56	7				1.3	-
Notified area of Alambagh Charbagh	2.56	4.5	3.3	0.6	1.7	0.38	10.8	2
Cantonment	2	2.76	4.4	2	0.85	3.5	1.3	3

SOURCE - MASTER PLAN OF LUCKNOW

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APPENDIX 'C' CONTD.

Ward	'Coal 'Timber	'Uten- 'siles 'cigars 'etc.	'Gold 'Silver	'Leather goods foot- wear	'Cycle '& 'Auto 'mobile	'Misc.	'To- 'tal
1	10	11	12	13	14	15	16
Ganeshganj	16	38.7	21	29.5	30.5	49	39.6
Yahiyaganj	55	34.6	19	2	18.5	9	14.4
Waziraganj	55	2	9.7	1.4	31.4	0.7	7
Chowk	2	2	14	49	55	1.5	9.5
Hazaratganj	11	2	16	3.6	6.4	35	14
Hasanganj	3	12	7.4	4	1.8	-	7
Daulatganj	1	-	0.7	-	1	-	0.5
Sadatganj	-	-	5	4	1	-	2
Notified area of Alambagh Charbagh	1.47	6	2	3	2.7	4	3
Cantonment	2.0	2	3.7	2	1	0.7	2.6

SOURCE - MASTER PLAN OF LUCKNOW

APPENDIX 'E'DISTRIBUTION PATTERN OF BUSINESS UNITS IN VARANASI DURING 1965

Type of business	No.	%age
Shops	12,076	93.8
Commercial establishment	496	3.8
Restaurants	186	1.4
Entertainment	125	1.0
	12,883	100.00

APPENDIX 'F'EMPLOYMENT SIZE IN DIFFERENT TYPES OF BUSINESS IN VARANASI

Types of Business	%age of persons employed
Shops	93.8
Commercial Establishment	3.8
Restaurants	1.4
Entertainment	1.0
	100.00

APPENDIX 'G'PROPOSED LAND USES - 1991 - VARANASI

Commercial	Existing	Proposed	Warehousing
Central City	60	-	-
Sub-Central city	-	146	-
Hercutt pur	-	126	44
Rohania	-	124	-
Shivpur	-	60	61
Pandey	-	137	28
Central Uses zone	-	165	223
Total city area	60	758	355
Total urban area	60	753	356

LAND USE - Sub Categories in C.B.D.

Business units or establishments Analysed in A Categories

I. Shops - Wholesale, retail, big dealer, small shoppers, grain, cloth etc.

II. Commercial establishments - Commercial Offices, banks, insurance companies transport office etc.

III. Restaurants - Existing establishments, hotels also.

IV. Places of entertainment, club, theatres, cinema etc.
More than 90% of total business units comes under (Shops I).

More than 90% shops I

1.4% Restaurant

4% Commercial establishment

1.0% Entertainment

APPENDIX 'H'PERCENTAGE DISTRIBUTION OF BUSINESS - UNITS CLASSIFIED INRANGES OF FLOOR AREA ACCORDING TO EMPLOYMENT SIZE, IN C.B.D.LUCKNOW

Employment size	Distt. of Business units in ranges of Floor area							Total
	Less than 100 sft	101-200 sft	201-400 sft	400-600 sft	600-1000 sft	1001-1500 sft	Above 1500 sft	
20 & above employees	-	0.05	0.05	0.3	0.023	-	0.02	.181
12 to 10	0.05	0.25	0.52	0.33	0.3	0.23	0.63	2.33
9 - 6	0.20	0.60	1.88	0.96	0.55	0.20	0.18	4.07
5 to 2	5.52	10.09	8.69	3.26	2.36	0.95	1.13	32.0
1 to 0	28.49	19.85	0.69	1.26	0.45	0.57	0.47	61.4
TOTAL	34.20	30.84	20.33	6.54	3.69	1.91	2.43	100.

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