

Proposed Urban Land Use Plans and Land Allocation of Raipur City In 2021, Chhattisgarh state

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ABSTRACT

Urban land-use planning is concern with the continuous process of regulating the use of urban land in an effort to promote more desirable social and environmental outcomes as well as a more efficient use of resources. The main goal of urban land use planning is the optimum use of urban land and sustainable development of a city. The present paper is based on both the primary data and secondary data which are obtained through field survey method and Master plans (existing-2011, proposed-2021) of Raipur city respectively. This research paper is mainly focused on attempt to analyze the objective of the proposed urban land use plans in future as well as proper use of the urban land cleared after relocation of incompatible use in Raipur city. Statistical analysis and cartographic techniques are use to express the proposed urban land use plans and implementation of land allocation for citizens in Raipur city. On the recommendation of Master plan of Raipur city, the urban land required for development purpose has been proposed at a rate of 6.37 hectares per 1000 persons. The total requirement works out to 16000 hectares for a population of 25 lakhs (According to master plan of Raipur city, 2021).The proposed urban land use plans and land allocation is to have the best possible uses of urbanisable land and fulfill the present as well as future requirement of the citizens of study area.

KEY WORDS: - Proposed urban land use, Master Plan, Raipur city and urban land use planning.

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I. INTRODUCTION:

Urban land-use planning is concern with the continuous process of regulating the use of urban land in an effort to promote more desirable social and environmental outcomes as well as a more efficient use of resources (Tiwari et al., 2010). The main goal of urban land use planning is the optimum use of urban land and sustainable development of a city (Chaurasia, 1987). Proposed urban Land use is an important aspect of geographical studies. The master plan, which is based on the zoning regulation, has been unduly long and ineffective. The master plan, which has been taken as a process rather than a conclusive statement, is a design for the physical, social, economic and political frame work for the city (Mandal, 1999). A detailed urban land use survey has been conducted in respect of developed area of the city within the planning area to understand and critically analyses functional relationship between various uses and to identify the incompatible and inefficient land use. The provisions of adequate land for various uses at appropriate places with proper inter-connection with each major use are other considerations which have been kept in mind while formulating the plan (Indrapal, 1972).

Study Area: - Raipur city is located in Raipur district of Chhattisgarh state. Raipur is the premier city and the capital city of the Chhattisgarh state, is an important administrative, commercial, industrial, and Education Centre. The state Chhattisgarh's new capital Naya Raipur is known as Atal Nagar. Raipur is (21°

14' 14"N latitudes and 81° 38' 5"E longitudes) an important junction on the Mumbai-Kolkata trunk line of the south eastern Centre. Enjoy a Centre location in the Chhattisgarh sate. Total geographical area of Raipur city is 326 sq.km. The city has an altitude of 298.15 mt. above mean sea level. The site of Raipur city is a low ridge on the north-east of the river Kharun, a tributary of Shivnath River. According to census 2011, the total population of Raipur city is 10, 10,087. The Urban agglomeration point of view, Raipur city comes under metropolitan region because the city having a population of more than 10 lakhs which is governed by municipal corporation. Raipur city holds 45th rank in India and 1st rank in Chhattisgarh state. The total metropolis area of Raipur city is 226 Sq. Km.

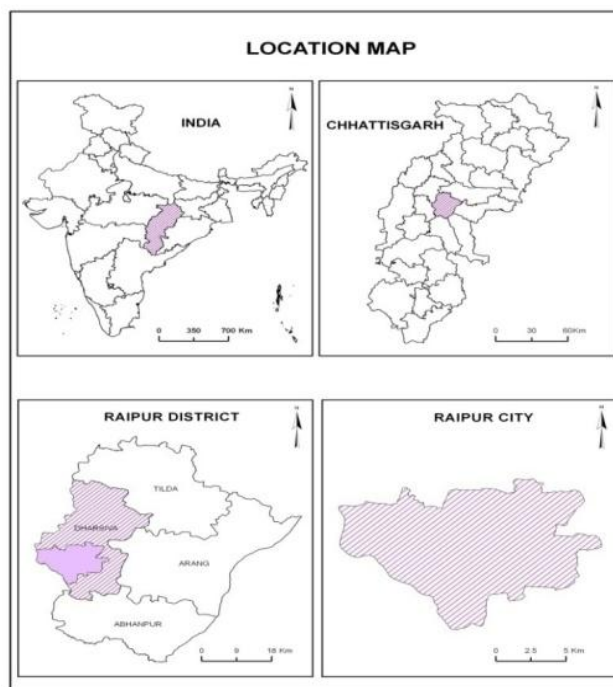


FIG. NO. 1

Sources of Data & Methodology: - The present study is based on both the primary and secondary data which are obtained through field survey method and the master plans of Raipur city (Existing Urban land use-2011 and proposed Urban land use -2021) respectively. The collected data had been processed and analyzed with the help of statistical techniques and cartographically represented by various tables, maps and diagrams.

Discussion and Results:-

Master Plan of Raipur City: - Master plan is to be responsive to change and maintain its validity over time and space, and be subject to continual review, to direct the physical development of the city in relation to its social and economic characteristics based on comprehensive surveys and studies on the present status and the future growth prospects. In respect to the proposed urban land use, town planning is an art and science of recreationing and beautifying the urban environment of Raipur city. Urban land use planning in terms of beauty, health, ambition that means city planning should be done by this form by the resource available that a city becomes an attraction (**Dubey, 1971**).

Physical growth of a city: - The shape and size of Raipur city have been influenced by natural as well as man-made features. In Raipur city, the topography of the area, increasing population, development of

Commercial area and urban sprawl etc. have a restrictive influence on physical growth of Raipur city to some extent. The alignment of roads of the city has played a positive role in its growth. The important roads, viz. Raipur-Bilaspur, Raipur-Baloda Bazar, Raipur - Mahasamund, Raipur – Dhamtari, Raipur – Durg radiate from the centre of the city which to great extent governs the physical growth. The mushroom growth of slums area is remarkable surrounding of a city.

Key Objectives of proposed urban land use: - The key objectives of proposed urban land use plans and implementation of development plan are as follows -

1. An efficient and judicious use of land.
2. Adequate and suitable residential area for construction of houses.
3. A network of transport system for safe and speedy movement of people and goods.
4. Adequate land for industrial use with minimum conflict with other urban activities.
5. To a great extent, the social and economic betterment of the urban people.
6. To provide healthy urban environment.

Basic Consideration for Development Plan: - The following emerges as the basic considerations for development plan of Raipur city in coming future-

1. Well distributed work centers and provision of integrated water supply.
2. Safe and convenient linkages from residential areas to work canters.
3. Adequate parking spaces at suitable places particularly in central area.

4. Improvement of slum areas by providing environmental improvement and by construction of cheap houses for slum dwellers.
5. A functional hierarchy of city services from sub-sector level to city level.

Comparative scenario of Planning Units between existing and proposed urban area: - The city structure of Raipur comprises 6 planning units covering an area of nearly 5000 hectares. the sizes of planning units are not uniform because the area included in a planning unit is based on conformity to various land uses, character of existing and proposed development, functional hierarchy and physical homogeneity etc. the planning units have been numbered and the major city roads of the proposed circulation pattern have been given functional names for the sake of convenience of description of the planning proposals.

Planning unit no. 1:- The boundary of this unit is portion of ring road no. 2 in north, Bilaspur road in east G.E. road in south and the ring road no. 2 in west. The unit includes the main commercial areas, wholesale market and industries and some residential area. The localities covered by this unit are gudhiyari, fafadih, railway station, ganjpara, ramsagarpara, jawahar nagar, kelkarpara, Jorapara, tatiyapara, and this portion of Raipur city comparatively housing society. The total area covered by this unit is 772 hectares out of which 265 hectares are existing urban area and 507 hectares are proposed for development.

Planning unit no. 2:- The boundary of this unit is ring road no. 1 in north, baloda bazar road in east, raipur-vizianagram railway line in south and bilaspur road in west. This area comprises the localities of industrial estate, railway colony, wagon repair workshop and stores and some portion of kappa, mowa and daldalseoni village. The total area covered in this unit is 745 hectares out of which 387 hectares is existing urban area and 358 hectares are proposed for future development.

Planning unit no.3:- This unit is bounded by ring road no. 1 and baloda road in north, ring road no. 1 in east, G.E.road in south and bilaspur road in west. This unit is divided into two portions. The first portion includes the localities of fafadih, moudhapara, civil station ward, raja talab, shankar nagar, pandari tarai, and some part of kappa, mowa and telibandha. The second include the areas of agriculture college and labhandih farm. The unit as a whole covers 1323 hectares out of which 302 hectares is existing urban area and 1021 hectares are proposed for development.

Planning unit no. 4:- The boundary of this unit is G.E.road in north, ring road no.1 east, dhamtari road in south and malviya road in west. It includes some portion of existing commercial area as well as some proposed residential areas. The total area of this unit is 787 hectares out of which 376 hectares is existing urban area and 411 hectares are proposed for development.

Planning unit no. 5:- The boundary of this unit is G.E. road in north, dhamtari road in east, ring road no.1 in south and mahadeo ghat road in west. The localities covered by this unit are purani basti, aminapara, lakhenagar, brahmanpara, satti bazar, sadar bazar, gole bazar, budhapara, chotapara, tikrapara etc. The total area covered in this unit is 502 hectares out of which 197 hectares is existing urban area and 305 hectares is proposed for development. The rest of the area will be utilized for agricultural purposes.

Planning unit no. 6:- The boundary of this unit is G.E. road and a canal behind virdhi colony in north, mahadeo ghat road in east, portion of ring road no. 1 in south and again G.E. road in west. The localities covered by these units are college ward, dangania, tatiband, dumartalab and kota village. The total area covered by this unit is 871 hectares out of which 416 hectares are existing urban area and 455 hectares are proposed for development.

Table No.1
Raipur City: Planning Unit of existing and proposed urban Area

Planning Unit	Developed Area (Hectares)		
	Existing (year-2011)	Proposed (year-2021)	Total
1	265	507	772
2	387	358	745
3	302	1021	1323
4	376	411	787
5	197	305	502
6	416	455	871
Total	1943	3057	5000

Source: - Master plan of Raipur city (Town & Country Planning Department, Raipur, C.G.)

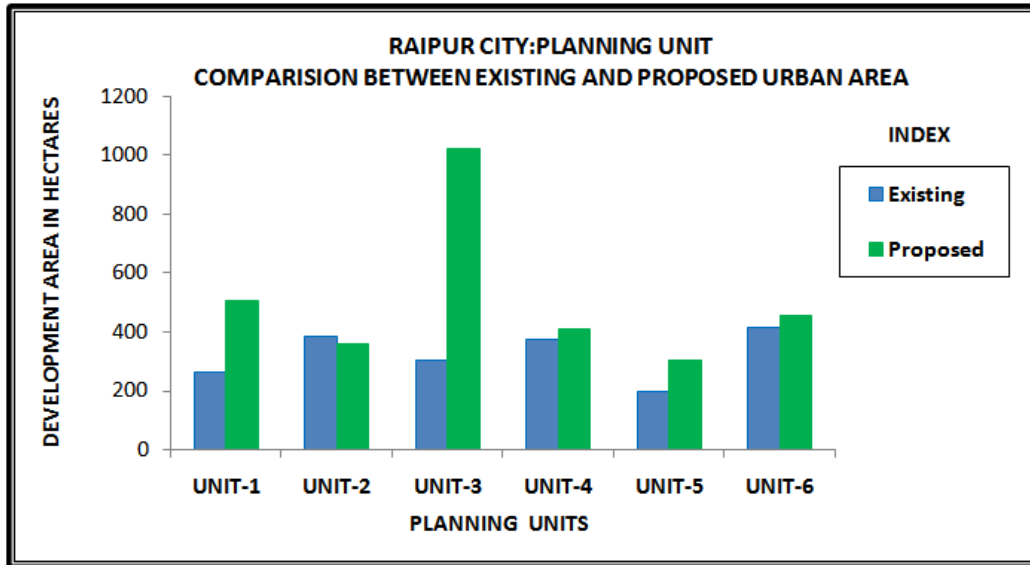
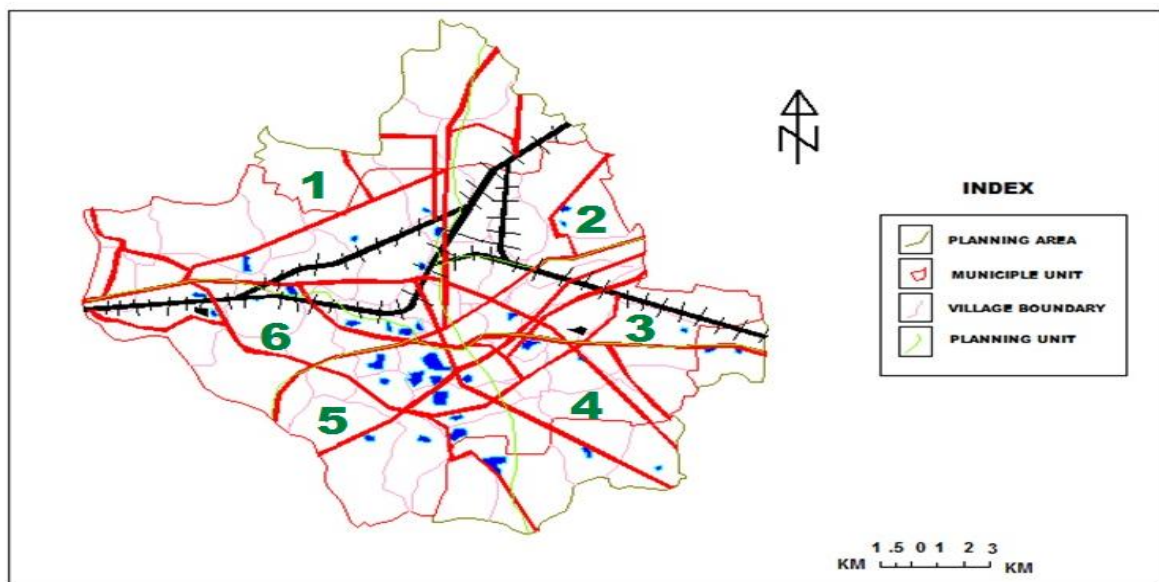


FIG. NO. 2



RAIPUR CITY: PLANNING UNIT OF URBAN LAND USE
FIG. NO. 3

Proposed urban Land Use Plans and Land Allocation:- On the recommendation of master plan of Raipur city, the total existing urban land use areas are occupied in 3710 hectares in the year of 2011 and the total existing urban land utilization rate is 6.18 % per 1000 persons which is categories into different urban land uses such as residential land utilization rate is 3.42 % per 1000 persons, commercial land utilization rate is 0.30 % per 1000 persons, industrial land utilization rate is 0.71 % per 1000 persons, public and semi-public land utilization rate is 0.75 %t per 1000 persons, recreation land utilization rate is 0.17 % per 1000 persons and transportation land utilization rate is 0.83 % per 1000 persons. Due to remarkable concentration of urban sprawl in Raipur city, the sub-urban areas is rapidly expended from CBD (central business district) towards periphery regions with greater geographic extent as well as development of Naya Raipur and many new colonies have sprung up along the major roads and railway line. In view of the above fact, the present inadequacy of land and the future land requirement for development purpose has been

proposed at a rate of 6.37 % per 1000 persons. The total requirement works out to 16000 hectares for a population of 25 lakhs (According to Master plan of Raipur city,2021) which is categories into six proposed urban land uses such as residential land utilization rate is 3.24 % per 1000 persons, commercial land utilization rate is 0.54 % per 1000 persons, industrial land utilization rate is 0.58 % per 1000 persons, public and semi-public land utilization rate is 0.60 %t per 1000 persons, recreation land utilization rate is 0.64 % per 1000 persons and transportation land utilization rate is 0.77 % per 1000 persons. The proposed urban land use plans and land allocation is to have the best possible uses of urbanisable land and fulfill the present requirement as well as future requirement of the citizens of study area (Aditya and Singh,1995).

RAIPUR CITY: PROPOSED CIRCULAR PLAN

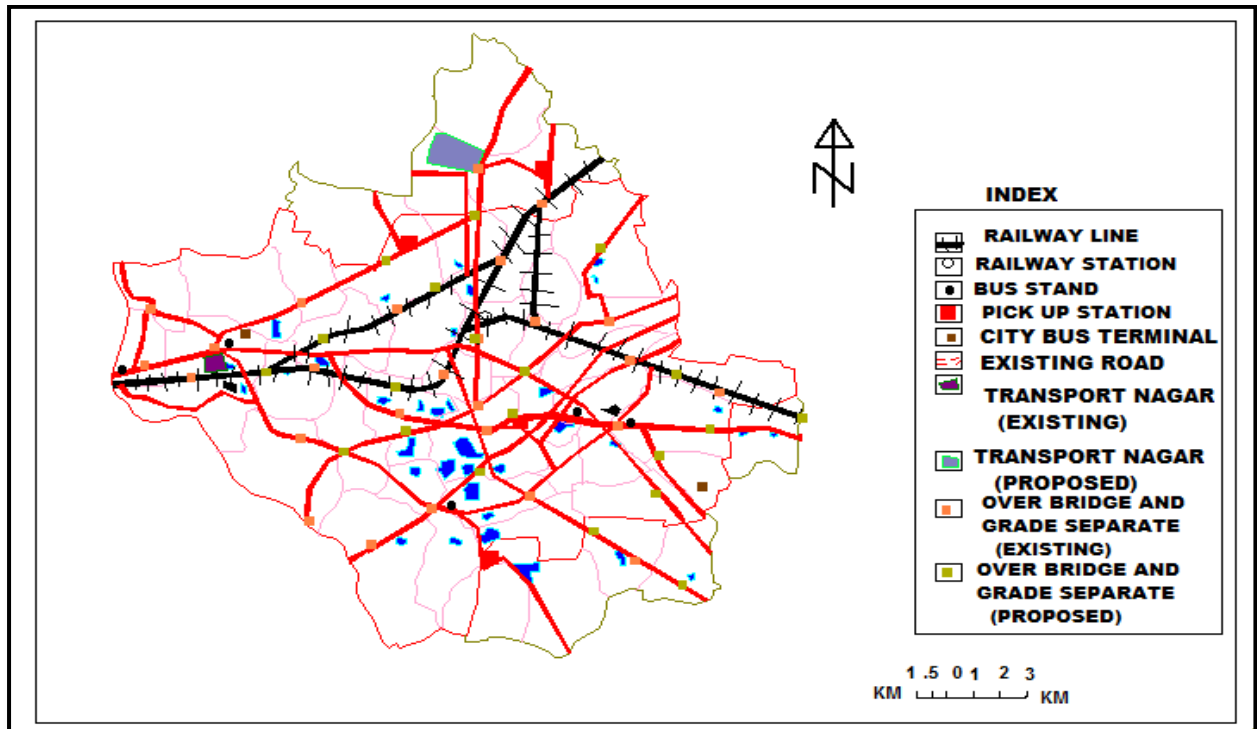


FIG. NO. 4

Table No. 2
Existing Urban Land Use of Raipur City, 2011

LAND USE CATEGORIES	EXISTING URBAN LAND USE		
	EXISTING	PERCENTAGE (%)	LAND UTILIZATION PERCENTAGE PER 1000 PERSONS
Residential	2050	55.3	3.42
Commercial	180	4.8	0.30
Industrial	430	11.6	0.71
Public And Semi-Public	450	12.1	0.75
Recreation	100	2.7	0.17
Transportation	500	13.5	0.83
Total	3710	100	6.18

Source: - Master Plan of Raipur City, 2011

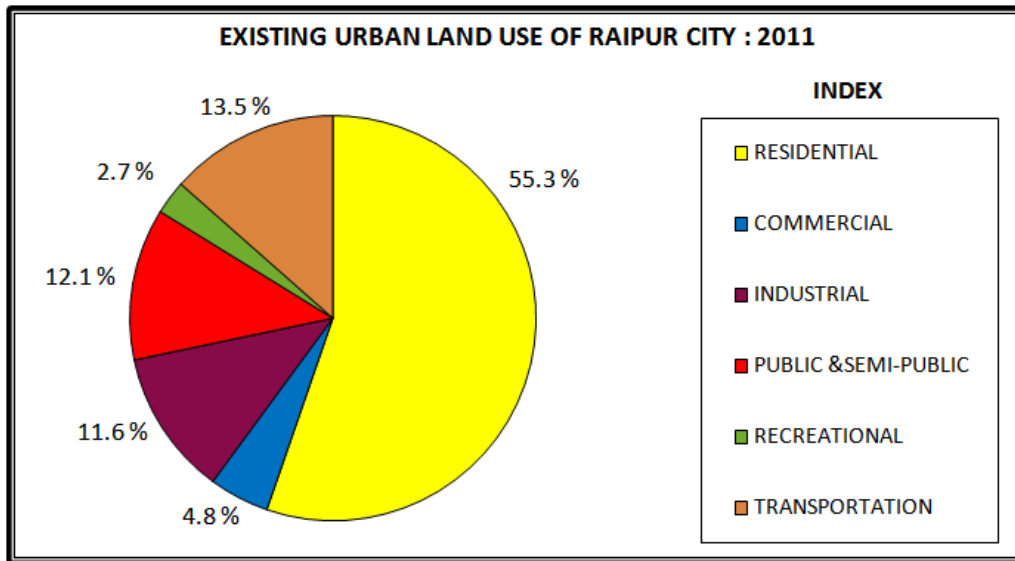


FIG. NO. 5

Table No. 3
Proposed Urban Land Use of Raipur City, 2021

Land Use Categories	Proposed Urban Land Use		
	Proposed	Percentage (%)	Land Allocation Percentage Per 1000 Persons
Residential	8088	50.55	3.24
Commercial	1370	08.56	0.54
Industrial	1451	09.07	0.58
Public And Semi-Public	1506	09.41	0.60
Recreation	1610	10.06	0.64
Transportation	1975	12.35	0.77
Total	16000	100	6.37

Source: - Master Plan of Raipur City, 2021

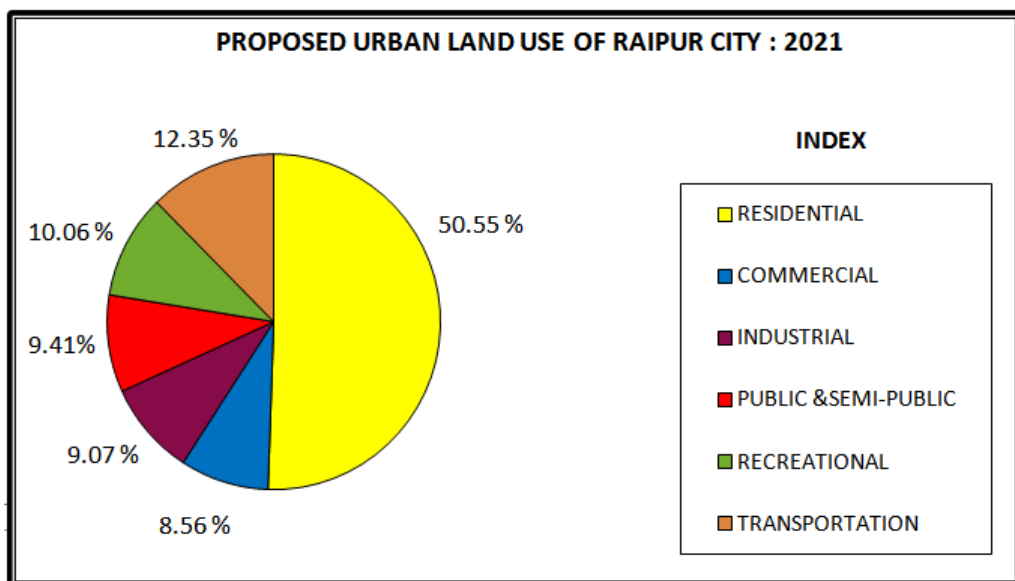


FIG. NO. 6

Review of the Master Plan and Strategies for fulfillment of the vision of master plan of Raipur city in 2021: - A master plan is a dynamic long term perspective planning for guiding the sustainable planned development of any city and it also provides a conceptual layout to guide future growth and development of a city but in these above points of view the Raipur city is exceptional. Raipur city is an outcome of physical growth process and reflects man's efforts any achievements in shaping his environment during the entire period of its development. According to master plan-2011 of Raipur city, the total existing urban land use is 3710 hectares and it is revealed from analysis of land use of the built up area that land utilization is at a rate of 6.18 hectares per 1000 persons. Development at Raipur city particularly residential areas and urban sprawl areas is spread out and mostly unconnected with development plan; this has result in relatively more land utilization. The urban agglomeration of Raipur city after 2011 is not positively increase as well as does not follows the proposed development plan because lack of proper planning strategies, not proper implementation of plan, continuous development of slum areas, not conducting a regular survey, the disposition of various land use categories, not well co-ordinate of urban land use, inter mixing of non-conforming uses, lack of proper drainage system in city, not availability of water resources, educational centers are not properly distributed and the city environment are polluted.

The town and country planning department of Raipur city has been recommended the Master plan - 2021 of Raipur city for further development of a city in future as well as to provide the proper solution of above drawbacks. The vision of Raipur city's Master plan 2021 is that, the green clean city with world class infrastructure but upholding the tradition and cultural characteristics of Chhattisgarh state. As compared to the existing urban land use is 6.18 hectares per 1000 persons, land allocation for all categories of uses is proposed to be increased to 6.37 hectares per 1000 persons in order to relieve existing congestion and future growth on planned basis.

The major highlighted drawbacks are found in the current development plan are, the new developments outside the RMC limit is not confining to the land use plans and guidelines prescribed in the master plan, new townships are proposed to regularize the haphazard growth of the city, growth towards Naya Raipur and Bhilai due to lack of adequate space in City area and new Colonies has sprung up, individual planning of parts has led to haphazard development with a lack of proper infrastructure and Land use pattern and transportation are not integrated.

The present scenario of the growth of Raipur city is that, Raipur city being the capital and commercial hub of the state, exhibits mixed land use pattern with residential, institution, commercial and industrial uses. The urban land use distribution in the city does not follow any definitive pattern. The only definite concentration is of the industries in the western parts of the Raipur city, resulting in heavy commuting patterns from centre city and east to west. Commercial activity is virtually spread throughout the Raipur city.

For fulfillment of the vision of master plan of Raipur city in 2021 and the adaptation of 25 lakhs population in 16000 hectares proposed urban land use is possible through the following strategies :-

1. Assure adequate and equitable water supply daily and for reasonable length time.
2. Well distributed work centers.
3. Relocation of only incompatible and inefficient land uses to sustainable sites.
4. Provide citywide coverage of sewerage and sanitation system to make it environmentally safe.
5. Improvement of slum areas.
6. Use of rainwater harvesting system and reducing the incidence of water logging during monsoons.
7. An efficient and judicious use of urban land.
8. Controlled the environmental degradation.
9. To establish and maintain an effective and sustainable waste management practice in the city.
10. Improve the condition of roads accessibility and provide adequate, safe and user friendly public transportation system in Raipur city.
11. Retention of mixed urban land uses in central area.
12. Provision of services and universal access to all basic urban services at an affordable cost.

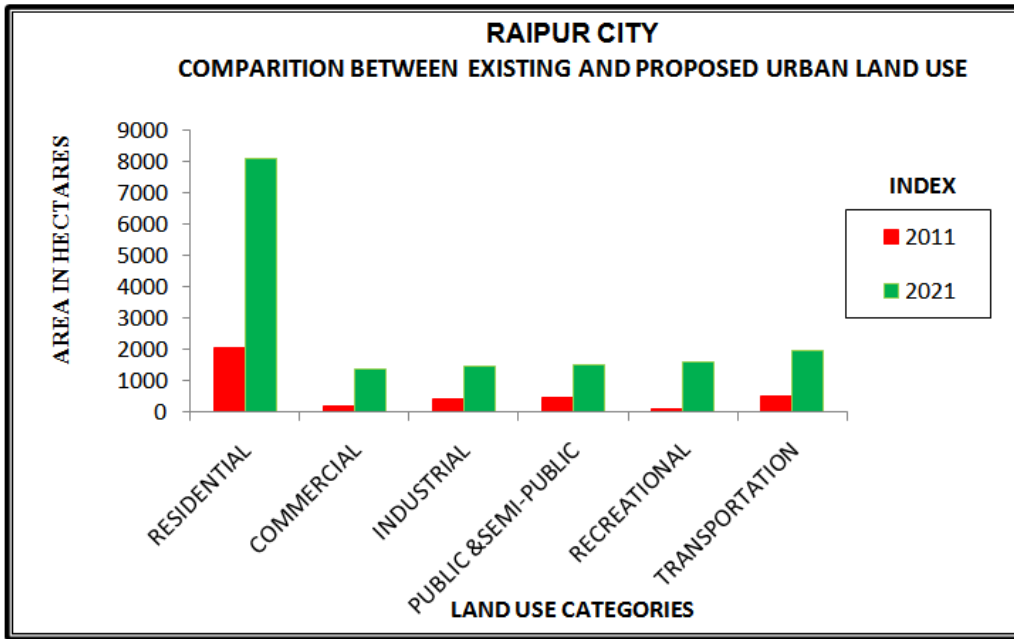


FIG. NO. 7

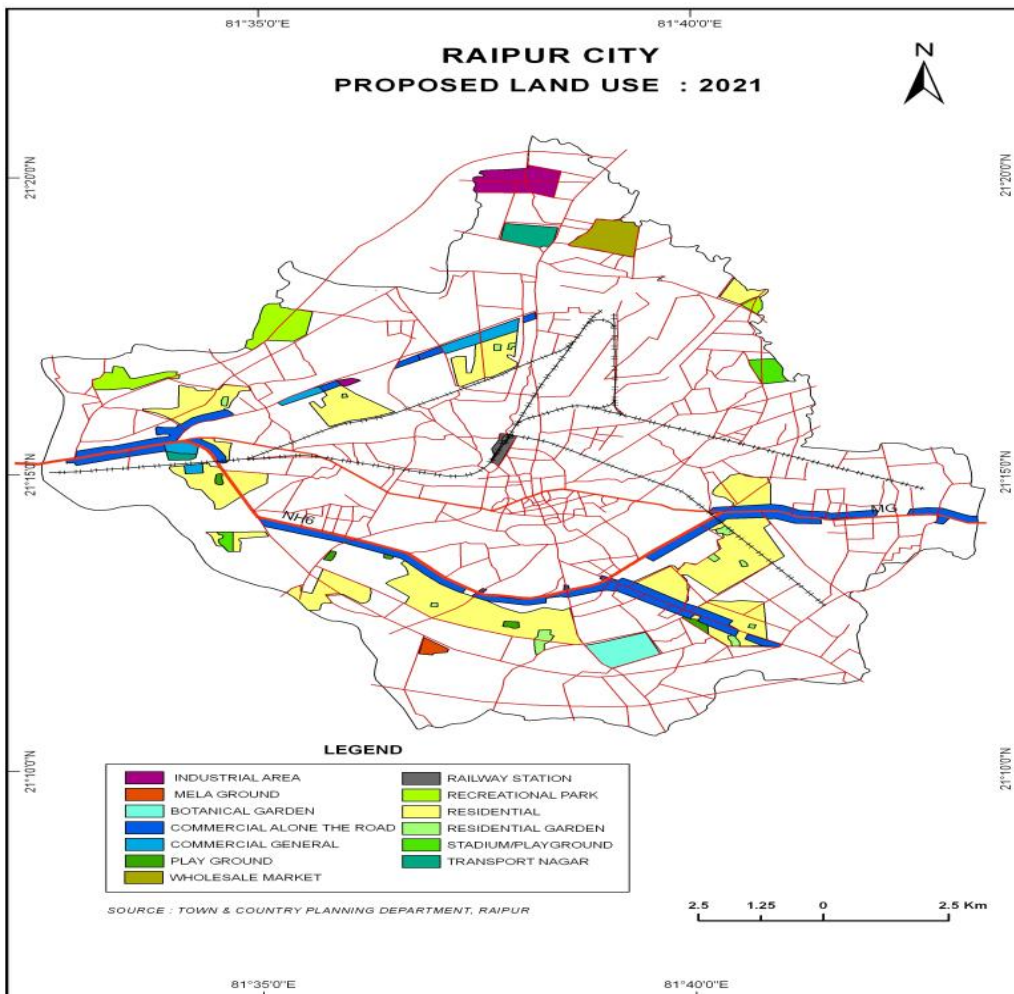


FIG. NO. 8

II. CONCLUSION:

The notable variation are found in between the existing urban land use and proposed urban land use of Raipur city. As compared to the total existing urban land utilization is 6.18 percent per 1000 persons in the year 2011 while the proposed urban land allocation is 6.37 percent per 1000 persons in the year of 2021 which is follow the changing pattern of urban land use in Raipur city. The town and country planning department will provide necessary guidance by rendering technical advice and by arranging proper scrutiny so as to ensure that the proposed constructions confirm to the proposals contained in the approved development plan which based on master plan of Raipur city.

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