

Chapter 3

The City structure

3. 1. THE CITY STRUCTURE

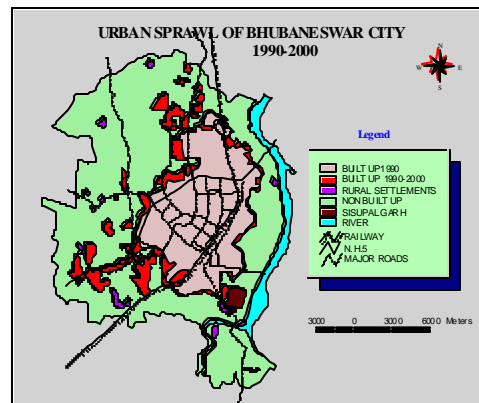
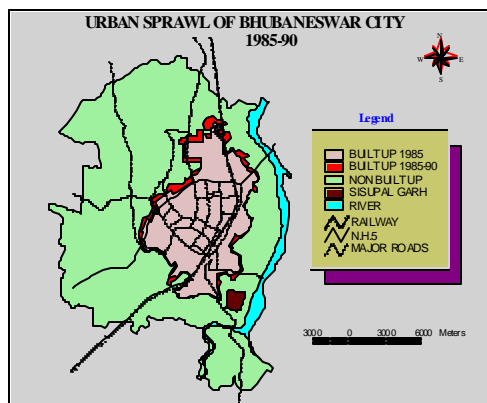
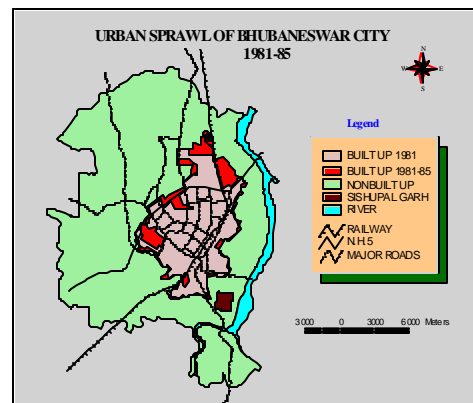
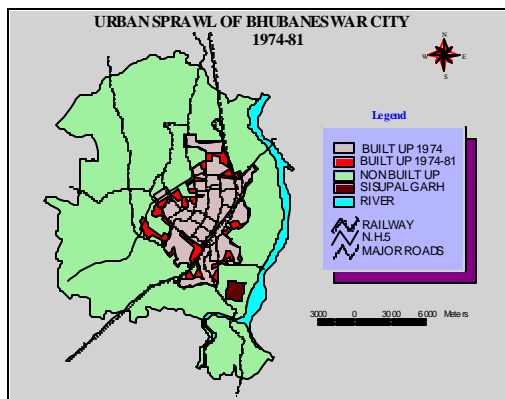
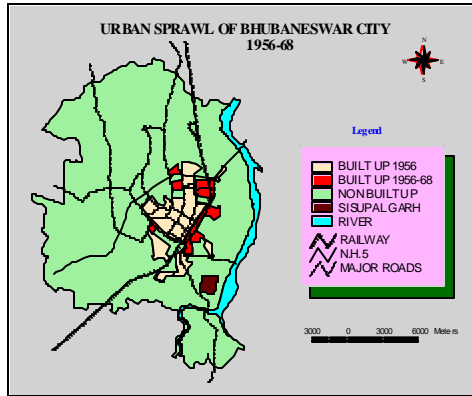
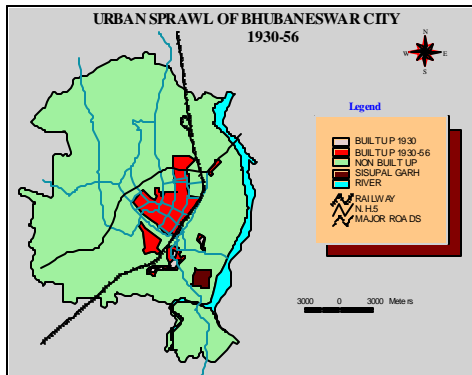
Bhubaneswar was a sleepy little town confined to the temple town and to the developments to south-east of the railway line, before any planning and development initiative took place for the capital city. Railway link to the town was through the Bhubaneswar Station Road, the station being connected to the temple town through minor road which was upgraded to the status of National Highway No. 5 at a later date. The road link from Cuttack was through Old Jagannath Road which led to the temple area through the present Tankapani Road. Only the airfield was constructed for use during the Second World War and there were several barracks for accommodation of defense personnel. Subsequently, the National Highway No 5 crossing Rasulgarh area passed through the Old Station area and following the alignment of Rajpath passed through Jagamara to meet its existing alignment at the Khandagiri junction.

With the decision to shift the capital from Cuttack to Bhubaneswar, the original plan of the capital city was drawn up in 1948. The plan envisaged horizontal development rather than vertical growth of the city and was envisaged for population of 40,000 persons with administration as the primary function. Accordingly, six units were developed with Unit-V for location of the administrative complex and other units were planned on neighborhood principles. The town centre consisted of the market building, weekly market, daily market and bus station with a central vista leading upto Raj Bhawan and a commercial zone along Janpath and Bapuji Nagar upto Railway Station.

Subsequently, bypass of National Highway was provided to segregate the local traffic from the region. Later on several residential units were added to accommodate the growing population of the city.

Bhubaneswar is today a fast growing city. Table 3.1 and Figure 3.1 depict urban sprawl of Bhubaneswar. Due to the location of the reserve forests in the north western part and the flood plains in the eastern part, the city could not grow in the envisaged manner. The structure of the city today shows more growth towards southwestern side of the city.

The city today has the markets in the core areas, and also the monuments/tourist sites in the same vicinity. The city although initially evolved in rectangular shape on a grid iron pattern outward from the centre, the city now is more growing largely in north, northeast and southwest direction along the main transport routes. The road structure of the city has not evolved to cater to the changing pattern of the city and to cater to its functions.



The following stages have affected the structure of the city:

- a) The Temple Town (Upto 1948)
- b) The "New Capital" (1948 – 56)
- c) Growth of Institutions (1956 – 76)
- d) Developments in Organised Sector (1976 Onwards)
- e) The Present Bhubaneswar

Each of the aforementioned stages of growth has left a distinct mark on the city's profile. Activities that set the front of developments during the phases and problems in each are discussed in the following.

a) The Temple Town (Upto 1948)

The old temple town (Fig 3.1) had been the seat of a continuous culture of about 2,500 years. It covers an area of 510 ha and comprises of 4 villages namely Kapil prasad, Bhubaneswar, Goutam Nagar and Rajarani.

The old city is featured by conglomeration of temples, monuments, mandaps, heritage ponds etc. Initially, the old city had 1000 temples and at present, the total temples are limited to 320. Majority of the existing temples are deteriorating rapidly and the precious stone carvings are also in damaged condition.

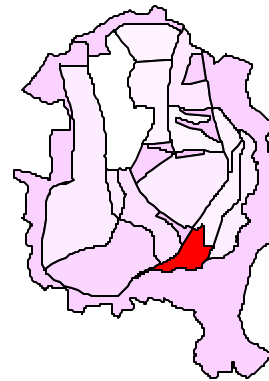


Fig 3.1-
Temple town of Bhubaneswar

Observations:

1. The temple town of Bhubaneswar presents a mixed land use pattern with a congregation of residential, commercial, industrial and institutional uses in a single locality.
2. Ribbonated development along major roads is prevalent with complete lack of planning.
3. Inadequate road network system, results in traffic congestion in almost all roads of the old city. Moreover, inadequate parking space for vehicles also adds to the above problem. The roads are very often narrow with little possibility of widening as building have been constructed on either side leaving vast open lands behind.

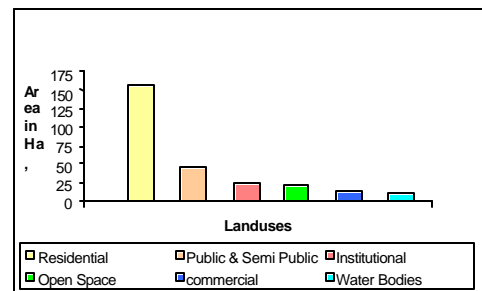


Fig3.2-
Land use of the Temple town

4. The open spaces are vacant and very often inaccessible. The interstices which were vacant till recently and could have been planned for land-scaping around the temple / monuments are fast getting filling up as a result of pressure of population on land.
5. Due to pressure of development, these finest architectural and sculptural elements are slowly dominated by modern development and the same is gradually reducing its importance. In many cases the visibility of temples lost due to modern construction.

6. Due to lack of drainage and sewerage system the water of the religious tanks are being polluted with inflow of drainage and sewerage system. The solid waste generated in the area are also posing environmental problem.
7. Due to population pressure construction are being undertaken close to the temples and has caused loss of visibility and skyline of this temple city.
8. Most of the temples are in the process of deterioration.
9. Availability of tourist facilities is also poor. The area needs high standard sanitation for the tourist and the people visiting the temple complexes

b) The New Capital (1948 – 56)

On 13th April 1948, Bhubaneswar got back its status when the foundation stone of the present capital township was laid by Pandit Jawaharlal Nehru, after a gap of 1600 Years. The present old temple town was formed and was confined to an area of 956 Ha. Later on Bhubaneswar was born as the new capital of Orissa in close proximity of the old temple town, the Master Plan for the new township was prepared by the famous architect Dr. Otto. H.Koenigsberger in 1954 on the basis of the concept of neighborhood unit planning

The capital town was planned in 1948 and was built between 1948 and 1961 at a respectful distance from the temple town with no conscious steps taken to preserve the individual identities of each. The city grew fast and the intervening areas were filled up quickly. Today the “New Capital” presents a sharp contrast with distinct areas earmarked for residential, commercial, institutional and such other uses. It comprised 6 units namely Units – I, II, III, IV, V and VI. With unit V earmarked for administrative functions, the other units were planned as residential neighborhoods with accent on horizontal rather than vertical growth.

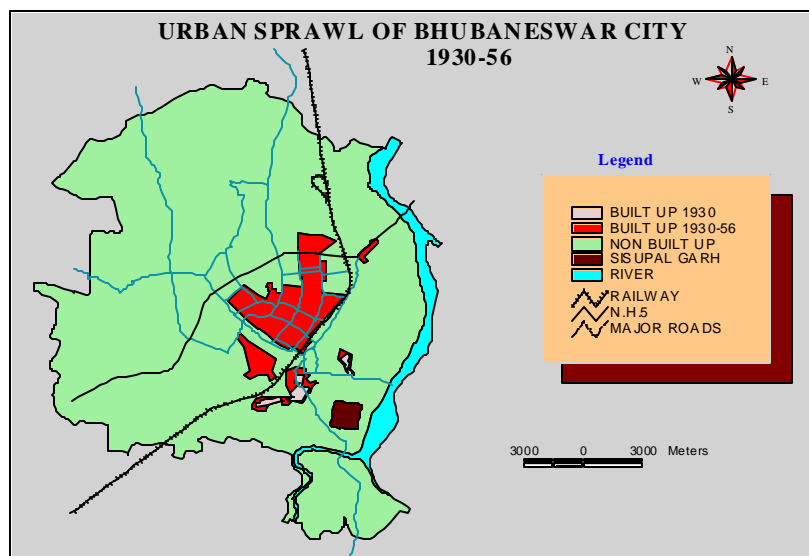


Fig3.3-
Urban Sprawl of Bhubaneswar (1930-56)

Observations:

1. There is a total absence of provision of areas for a number of urban activities such as industrial, institutional etc. which were not envisaged then.
2. With an absence of economy in allotting land for different uses, the development spread over large areas, with even residential quarters allotted in much larger areas than was necessary.
3. Such a sparse development pattern resulted in much lower density of population, than was desirable and involved higher unit cost of infrastructure development.

c) Growth of Institutions (1956–76)

During 1956-76 major administrative activities like secretariat, heads of departments and similar government offices came up in Bhubaneswar. The salubrious climate, availability of suitable land attracted a number of state level and regional institution such as Vanivihar, Sainik School, the Regional Research Laboratory, the Orissa University of Agriculture and Technology, the Government Press, the Institute of Physics and several industrial units like C.R. Factory, OMFED Chilling Plant, the Industrial Estate at Bomikhal and subsequently at Pandara were also established. Also with the growth of population the need for developing residential areas both in private and organized sectors led to developments of Sahid Nagar (Unit – II), Satya Nagar (Unit – X), Surya Nagar (Unit – VII), Acharya Vihar and Lewis Road Housing Colony (Jayadev Nagar). The growth of Bhubaneswar during this period is shown in fig 3.4.

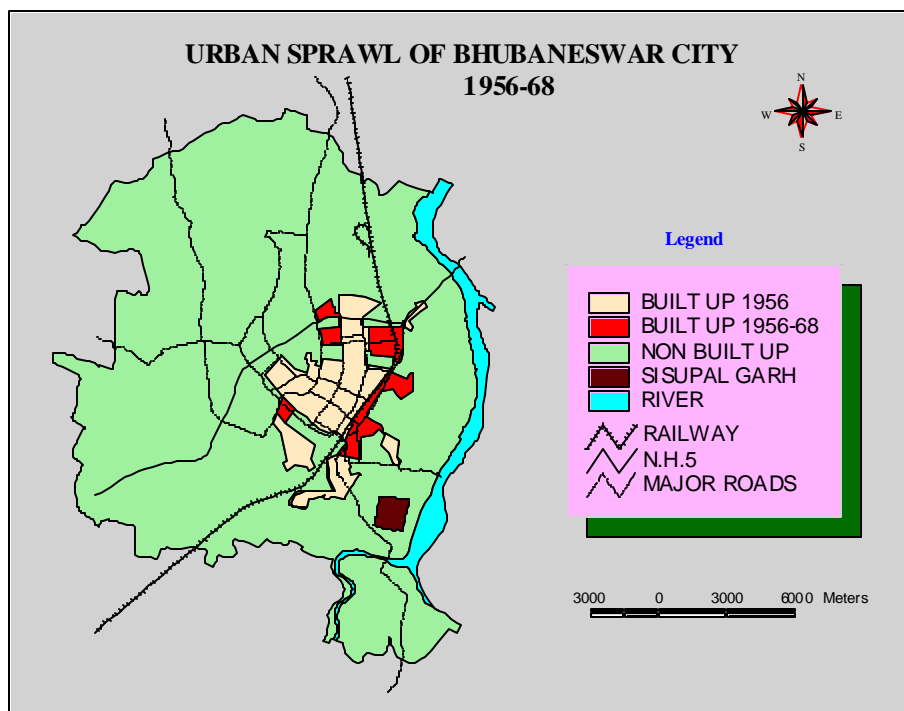


Fig 3.4
Growth of Bhubaneswar 1956-68

But in location of these institutions, the perspective growth of some of the major functions of the city, and the inter-relationship among the different city functions do not seem to have been considered. Much larger areas have been allotted to some of the institutions than was necessary.

d) Developments in Organized Sector (1976 Onwards)

Constitution of the Bhubaneswar Regional Improvement Trust (BRIT) in 1976 and subsequently the Bhubaneswar Development Authority (BDA) in 1983 and the role of institutional finance for mass housing in the organized sector appears to be landmark in this phase of city's growth.

The following major schemes and multistoried buildings were executed during the period:

- i. Housing Board Colony, VSS Nagar
- ii. BRIT Colony, Laxmisagar
- iii. BRIT Colony, Nayapalli
- iv. BRIT Colony, Baragarh
- v. Chandrasekharapur Improvement Scheme
- vi. GGP Housing Colony
- vii. Palaspalli Duplex Complex
- viii. Housing Board Colony at Kapilprasad
- ix. Housing Board Colony at Baramunda
- x. Housing Board Building
- xi. IDCO Tower
- xii. CRP Market

In all such cases economy of space and cost had influenced the structure as well as their immediate environment. Shortage of Government land and economy of scale contributed to construction of multistoried flats at Chandrasekharapur and buildings like IDCO tower, Housing Board Building, IPICOL Building etc. This phase also witnessed construction of number of market complexes like BRIT market at Laxmisagar, BDA's Suryakiran Market, Municipal market and Housing Board markets at Saheed Nagar, Ashoka Market at Station Square, Ruchika Market Complex at Baramunda, Municipal Market at Old Town. In all such constructions the availability of institutional finance and demand for office/commercial space have played a key role towards a balance of space, economy and design.

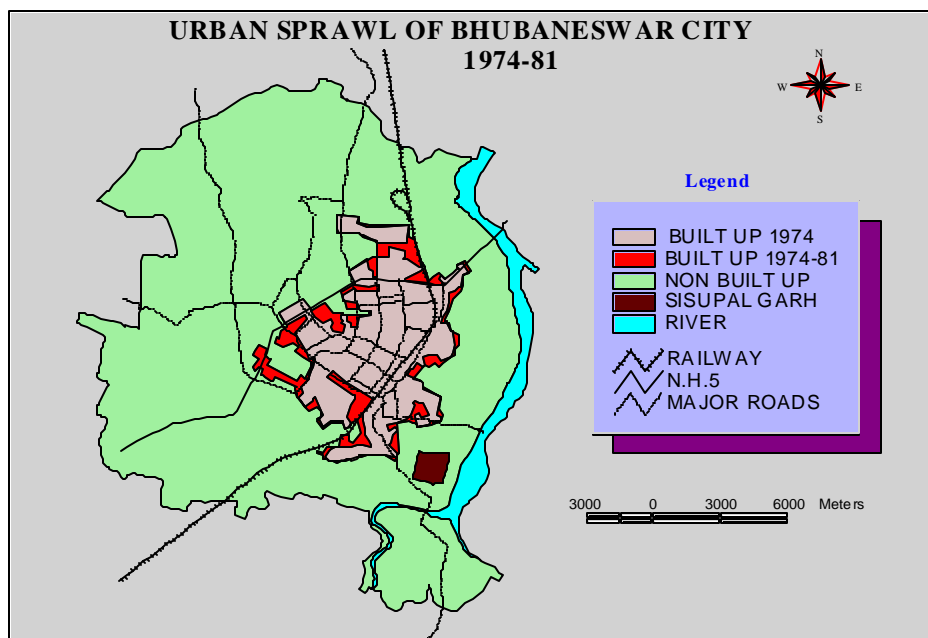


Fig 3.45
Growth of Bhubaneswar 1974-81

Although articulate and organized, these developments in the organized sector have followed the availability of government land. While inducing the pace of growth in the nearby areas in private holdings, the execution of housing schemes have not succeeded in articulating the development in such areas in desired manner. Many of the housing schemes in the organized sector are subsidized in terms of cost of roads, open space and infrastructure but in the nearby private areas cost of infrastructure is charged to the individual development leading to inadequacy of roads, open spaces and other infrastructure. A disparity in quality of environment prevails in many of the private areas adjoining the housing scheme areas executed in the organized sector.

d) The City Today

The city which was planned originally for 40, 000 people with an area of 1684 Ha of land is now accommodating about 7 lakhs people with an area of about 135 sq km. The shape of the present city has assumed nearly a rectangular form which shows the signs of development of the town on a vast unutilized undulating plateau. The city has extended in seven different directions during the last few decades by engulfing the fringe villages. This extension has got varied length and dimensions from the core of the original town, which has been supposed to lie at the Lingaraj temple area.

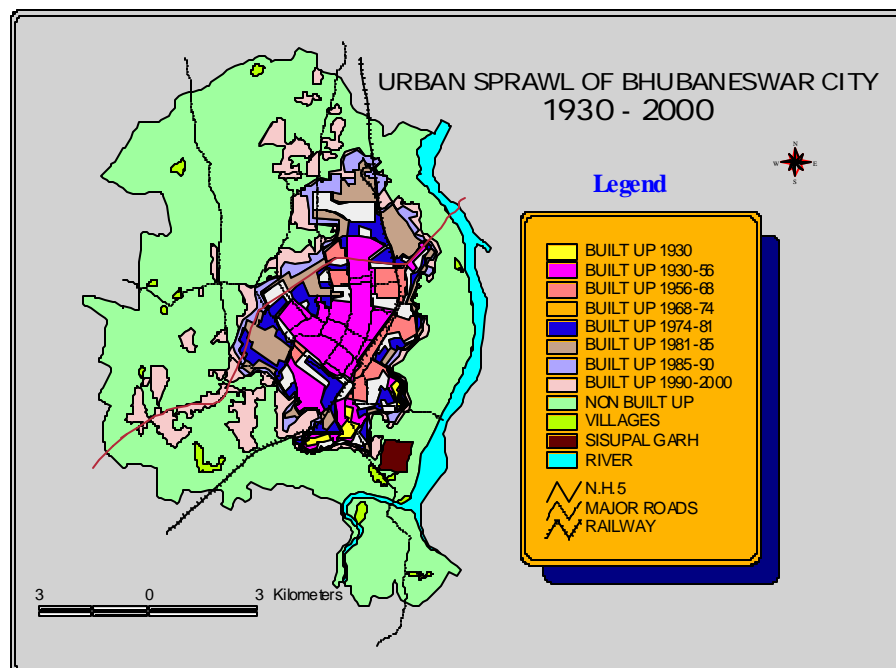


Fig 3.5
Growth of Bhubaneswar 1930-2000

From the centre of growth of the original temple town, the present town has extended maximum towards north i.e. about 22.5 km. towards village Patia. Its extension towards north-west is about 14.5 km., west 11 km., south-west 8 km., south 6.5 km and east 9.5 km. Virtually it has no growth towards south-east due to the location of the flood plains of Kuakhai and Daya River. Presently the city has been extended upto the Chandershekharpur in the north and beyond Daya West Canal in the south. In the east, the development is confined to the Daya West Canal. In the west, the city has expended well beyond the khandagiri Junction. The land between Day west Canal and the Kuakhai is put to the agricultural use, which is rapidly being put to Brick kiln.

The present township of Bhubaneswar sprawls over 233 sq. km. comprising of total number of 2312 revenue villages. The shape of the city is almost dumb-bell shape. Its boundary in the south, southeast and east are somewhat irregular. The city is divided into 30 wards under the Bhubaneswar Municipal Corporation control. There are also 204 more villages along the rural periphery, which are coming under the direct sphere of influence of the city. As per 1991 census there are thirty (30) numbers of wards under Bhubaneswar Municipal Corporation Area. The jurisdiction of the Bhubaneswar Urban Area is under the Bhubaneswar Development Authority (BDA).

The main departments/agencies having direct responsibility in one or the other form with regard to urban development in Bhubaneswar are given below in Table 3.2.

Table 3.2
Agencies Involved In Urban Development Of Bhubaneswar

| Relevant Government Departments | | | |
|--|--|---|---|
| Department | Brief Description Of Functions | Name Of The Department | Contact Person |
| Town Planning | Advises the State Government on matters pertaining urban planning and prepares development plans, Master plans for the Cities | Directorate of Town Planning, Govt. of Orissa | Director Directorate of Town Planning, Unit-V, Bhubaneswar Phone – 400596 |
| Pollution Control & Environmental Protection | Dealing with environmental monitoring and Pollution Control in the State. This office is also undertaking environmental Planning Studies for the entire State | State Pollution Control Board, Orissa | Chairman, state Pollution Control Board, Orissa, A/118, NilakanthaNagar, Bhubaneswar |
| Public Health | Planning, designing, construction, operation and maintenance of water supply system and management of waste water schemes including their transportation and distribution | Public Health Department Govt. of Orissa | Engineer-in-Chief PHED Department Heads of Department, Unit-V, Bhubaneswar Phone- 401825,400349 |
| Sewage/Storm water, Garbage/Solid Waste | Maintenance and services including sanitation street lighting, roads, streets, lanes, drainage and Management of Solid Waste. Development of Infrastructure and Provision of services to slums | Bhubaneswar Municipal Corporation | Administrator Bhubaneswar Municipal Corporation, Vivekananda Marg, Bhubaneswar Ph No: 402894. |
| Roads/Transportation | Planning, Construction and Maintenance of major and internal city roads | 1. City Maintenance Division, R & B Dept. Govt. of Orissa 2. Bhubaneswar Municipal Corporation | 1. Chief Engineer, Nirman South, Unit-V, Bhubaneswar 2. Administrator Bhubaneswar Municipal Corporation, Vivekananda Marg, Bhubaneswar Ph No: 402894. |
| Industry | Planning and Establishment of Industries. Development of Industrial Estates and Industrial areas, creation of industrial infrastructure and amenities there in | 1. Industries Dept. Govt. of Orissa 2. IIDCO, Bhubaneswar 3. IPICOL, | 1. Secretary Industries Dept., Secretariat, Bhubaneswar 2. Managing Director, IIDCO, Janpath, Bhubaneswar 3. Chairman, |

| Relevant Government Departments | | | |
|---------------------------------|---|---|---|
| Department | Brief Description Of Functions | Name Of The Department | Contact Person |
| | | Bhubaneswar 4. DIC, Khurda | IPICOL, Bhubaneswar 4. Dist. Industry Officer, DIC, Khurda |
| Tourism | Identification and Development of Tourist Interest Site, Publicity and Development of Infrastructure for Tourism in form of lodging and boarding, transportation facilities. Arrangement of different tourism packages covering different tourist sites | 1. Orissa Tourism Development Corporation 2. State Tourism Department, Govt. of Orissa | 1. Chairman, Orissa Tourism Development Corporation, Lewis Road, Bhubaneswar 2. Managing Director, State Tourism Department, Govt. of Orissa, Near State Museum, Bhubaneswar |
| Greenbelts/Horticulture | Road Side Plantation, development of parks | 1. Forest (City Afforestation) 2. Social Forestry 3. BDA 4. Municipality | 1. DFO, Social Forestry 2. DFO, City Afforestation Aranyabhawan, Chandrasekharpur, Bhubaneswar 3. Vice Chairman 4. Executive Officer |
| Agriculture | Development of Agricultural Activities in the State. | Agriculture Department Orissa University of Agriculture and Technology (OUAT) | Director Dept. of Agriculture Govt. of Orissa Heads of Department Unit – V, Bhubaneswar Dean Orissa University of Agriculture and Technology (OUAT) |
| Forests | Protection and Development of all identified forest areas and its natural resources. Protection and care of animals living in forest areas and making plantation | 1. Forest (Territorial) 2. Forest (Wild Life) | 1. DFO (Territorial) Aranyabhawan, Chandrasekharpur, Bhubaneswar 2. DFO (Wildlife) Nayapalli, Bhubaneswar |
| Archaeology | Identification, protection and preservation of Ancient Monuments of National and State Importance. Excavation of new sites | 1. Archaeological Survey of India (ASI) 2. State Archaeological Department | 1. Superintendent Archaeologist, Archaeological Survey of India, Old Town, Bhubaneswar 2. Superintendent Archaeologist, State Archaeological Department, |

| Relevant Government Departments | | | |
|---------------------------------|--|-----------------------------------|---|
| Department | Brief Description Of Functions | Name Of The Department | Contact Person |
| | | | Museum Square, Bhubaneswar |
| Slums | Proper Slum Upgradation and rehabilitation of Slums and developmental activities, which includes childcare, health improvement, population control insurance, housing services. Enhancement of income-earning opportunities through training providing incentives for community management and maintenance. Removal environmental hazards. | Bhubaneswar Municipal Corporation | Administrator Bhubaneswar Municipal Corporation, Vivekananda Marg, Bhubaneswar Ph No: 402894. |

2. LAND USE

2.1 Master Plan (1968-1988)

Bhubaneswar was having a Master Plan since 1968. Seven functional land-use zones for Bhubaneswar were identified. These functional zones have some specific land uses. These zones are residential zone, commercial zone, industrial zone, public and semi-public zone, open space zone, green belt zone and transportation zone.

The landuse allocation in the Master Plan 1968 is given in Table 3.3.

Table 3.3
Land Use Allotment In Bhubaneswar Master Plan, 1968

| Use Broad-Zones | Use Sub-Zones | Area of Sub-zone in Hectare | Area of Broad Zone | % of the Sub-zone to Total | % of the Broad-zone to Total |
|-----------------------------|---|-----------------------------|--------------------|----------------------------|------------------------------|
| Residential Zone | High Density | 850 | 2206 | 8.84 | 22.93 |
| | Low Density | 1356 | | 14.09 | |
| Commercial Zone | C.B.D | 36 | 262 | 0.37 | 2.72 |
| | Neighbourhood Shopping Centre | 226 | | 2.35 | |
| Industrial Zone | Medium Scale | 255 | 481 | 2.65 | 5.00 |
| | Small Scale | 226 | | 2.35 | |
| Public and Semi Public Zone | Administrative | 222 | | 2.31 | |
| | Institutional | 191 | 1273 | 1.99 | 13.24 |
| | Educational | 814 | | 8.46 | |
| | Medical | 46 | | 0.48 | |
| Open Space Zone | Organised Parks, Recreational & Playgrounds | 609 | 1329 | 6.33 | |
| | Agricultural Farm | 390 | | 4.06 | 14.47 |
| | Livestock & Poultry Farms | 393 | | 4.08 | |
| | | | | | |
| Green Belt Zone | Agricultural Land | 566 | 1880 | 5.89 | |
| | Green Buffer | 1207 | | 12.54 | 19.54 |
| | Cremation & Disposal Ground | 107 | | 1.11 | |

| Use Broad-Zones | Use Sub-Zones | Area of Sub-zone in Hectare | Area of Broad Zone | % of the Sub-zone to Total | % of the Broad-zone to Total |
|-----------------|---------------|-----------------------------|--------------------|----------------------------|------------------------------|
| Transport Zone | Aerodrome | 299 | | 3.11 | |
| | Roads | 918 | 1481 | 9.54 | 15.40 |
| | Railways | 243 | | 2.53 | |
| | Canals | 21 | | 0.22 | |
| | Others | 645 | 645 | 6.7 | 6.7 |
| Total | | 9621 | 9621 | 100.00 | 100.00 |

2.2 Comprehensive Development Plan (1988-2001)

Due to the increasing population and the changing socio- economic status of the city, the Master Plan of 1968 was re-examined, evaluated and modified and in 1993 an improved Comprehensive Development Plan prepared by Bhubaneswar Development Authority came into force. The C.D.P. for Bhubaneswar proposed to be perspective plan with a time horizon of 1988-2001 specifying the various landuse zones with a set up zoning regulations for regulating all the development in zones.

The specific objective for the preparation of the Comprehensive Development Plan are given below:

- To develop an urban environment capable of sustaining a population of 10 lakhs with facilities and services by 2001.
- To promote a more dynamic growth of the economy with increased production goods and services, with increased employment opportunities and to enable to capital city to play its role of the effectively as the centre of administration, institutions and tourism for the reason with the state of Orissa while retaining its horay traditions as the temple city.
- To enable the development authority for a sustained development planning and effective plan implementation.
- To ensure effective coordination amongst various agencies that has Bhubaneswar Development Authority, Bhubaneswar Municipal Corporation, Semi-Government/Private Agencies and Citizens in the process of development of the capital city through effective mobilization of resources and leadership.

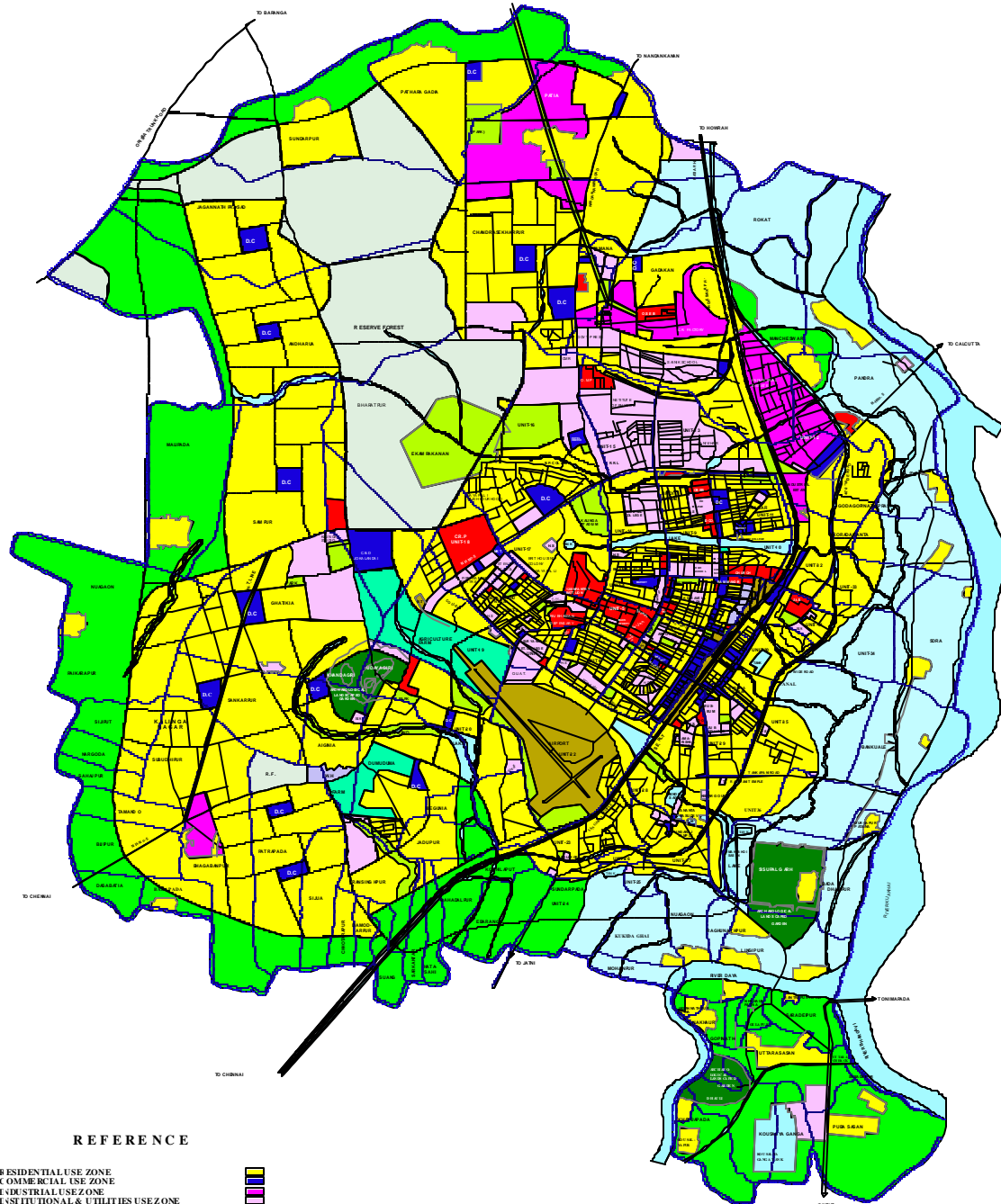
The proposed land uses in comprehensive development plan is given in Table 3.4.

Table 3.4
Proposed Land Uses In Comprehensive Development Plan

| SL. | Land Use | Area In Sq. Km. | Percentage to Total Area |
|-----|--|-----------------|--------------------------|
| 1 | Residential | 75.40 | 32.7 |
| 2 | Commercial | 4.94 | 2.14 |
| 3 | Industrial | 5.86 | 2.54 |
| 4 | Institutional & Utilities | 7.11 | 3.09 |
| 5 | Administrative | 2.9 | 1.26 |
| 6 | Open Space | 13.77 | 5.98 |
| 7 | Transportation & Communication | 18.91 | 8.21 |
| 8 | Water Bodies | 33.82 | 14.7 |
| 9 | Drainage Channel | 2.59 | 1.10 |
| 10 | Green Belt Including Protected Forest and Reserve Forest | 68.15 | 28.3 |
| 11 | Total | 233.3 | 100 |

The Comprehensive Development Plan for Bhubaneswar City is shown in the Figure 3.6

COMPREHENSIVE DEVELOPMENT PLAN FOR BHUBANESWAR (FINAL)



REFERENCE

RESIDENTIAL USE ZONE
 COMMERCIAL USE ZONE
 INDUSTRIAL USE ZONE
 INSTITUTIONAL & UTILITIES USE ZONE
 ADMINISTRATIVE USE ZONE
 ARCHAEOLOGICAL & LANDSCAPED GARDEN
 MISC. OPEN SPACES & PARK
 AGRICULTURAL/HORTICULTURAL FARM
 RIVER / WATER BODIES
 FLOOD PRONE AREA
 TRANSPORTATION & COMMUNICATION USE ZONE
 GREEN BELT
 WAREHOUSE
 FOREST AREA

PROPOSED ROADS
 EXISTING ROADS
 NATIONAL HIGHWAY
 RAILWAY
 FOREST BOUNDARY
 MOUJA BOUNDARY
 DEVELOPMENT AREA BOUNDARY



Scale : 3 Inches to 1 Mile

| BHUBANESWAR DEVELOPMENT AUTHORITY Sachivalaya Marg, Bhubaneswar | | | |
|--|---|---------------|----------|
| DEALT: | COMPREHENSIVE DEVELOPMENT PLAN FOR BHUBANESWAR (Final) | | |
| CHECKED: | | | |
| DRG. No. | | | |
| | | | |
| ASSOCIATE PLANNER | PLANNING MEMBER | VICE-CHAIRMAN | CHAIRMAN |

3 PRESENT LANDUSE

Table 3.5 shows the present land use of Bhubaneswar. The present landuse has been prepared by survey, ground checking and ground truthing of the proposed landuse map from the Comprehensive Development Plan. The present landuse is confined within the Municipal area of the city, which is about 130 sq km.

Table 3.5
Existing Land use In Bhubaneswar

| Sl. No. | Types of Use | Area in sq km |
|---------|--|---------------|
| 1. | Residential | 49.61 |
| 2. | Commercial | 3.64 |
| 3. | Industrial | 6.23 |
| 4. | Administrative | 4.08 |
| 5. | Institutional and Utilities (Roads, Railways and Air-port) | 10.93 |
| 6. | Parks, Open Space Agriculture Vacant land (including hills and bushy jungle) | 29.67 |
| 7. | River, Canal and Other Water Bodies | 19.09 |
| 8. | Total | 126.32 |

A brief description on the landuse under various categories is given below:

1. The residential areas are confined in Unit No. I, II, III, IV, V, VI, VII, VIII, IX, X and XI . The residential areas have been planned in the form of self-contained neighbourhood with each unit having its own high schools, shopping centers, dispensaries, play areas and the like.
2. The commercial areas are confined within each planned units. The market complex in Unit – 2 and Unit – 1 comprises of weekly and daily markets are considered to be the main shopping center of the city. Specialized commercial activities have also come up along Cuttack-Puri Road and Janpath starting from Choudhury Market in Unit-1 up to Sahidnagar. Besides, city level markets have also come up recently at Sahidnagar, C.R. P. Junction and the like, with smaller markets in many of the units, such as Unit I, II, III, IV, V, VI, VII, VIII, IX, Siripur junction and Old Town. Wholesale warehousing activities are presently continuing at Unit – II, III, Station Road and at Rasulgarh area. Taking advantage of absence of planed wholesale vegetable godowns, a number of vegetable godowns are presently functioning at Ashoknagar – Unit – 2 contributing to the problem of traffic congestion, unhygienic conditions in this residential area. Ribbonated commercial development along Janpath and Cuttack-Puri Road has brought in the problem of congestion, traffic bottleneck and other related problems on these arterial roads. Service roads along Janpath, Cuttack-Puri Road need to be constructed to ensure quick flow of traffic.
3. The land under the industrial use includes the Coach Repairing Factory, the Industrial Estates at Mancheswar and Bomikhal and also a number of service industries now functioning at the Cuttack Road and Rasulgarh area. Also, a large number of industrial units have been established in Mancheswar Industrial Estate located in the area lying between Daya West Canal and the Railway line. Large Industrial Estates are also being developed at Patia, Chandrasekharpur and Pathargadia.
4. Most of the state-level important administrative offices, like the Secretariat, heads of Departments, the Accountant General Office are located in Unit-V designed in the original plan of the city as an Administrative Complex. Presently for lack of proper accommodation, a number of Government and Semi-Government Liason Offices are functioning in private buildings. With the construction of multi-storeyed buildings like IDCO Tower, Orissa State Housing Board Building, IPICOL Building, a number of Government and Semi-Government offices have been accommodated. With the shifting of State-level offices now functioning at Cuttack to Bhubaneswar, the problem will become more

acute. There is a need of constructing multi-storeyed office complexes related to residential areas to lessen the traffic problem of journey-to-work.

5. Institutional category comprises of educational, religious and other institutions. These are as various institutions like Vanivihar, the Regional Research Laboratory, the Regional collage of Education the Institute of physics, the Gift Press, the Xavier Institute of Management, the Institute of Hotel Management, the Orissa University of Agriculture and Technology, the Regional Training the Institute of Door Darsan and All India Radio, Headquarters and Laboratory of National Test Rangel and a number of educational institutional institutions. Apart from these lands under the utilities like traffic, transport, religious functions and other utilities (burial ground, cremation cinema halls etc) fall under this category.
6. Presently, cremation grounds are existing at (a) Kapileswar by the side of Gangua river (b) Samantarapur (c) Jharpada-Laxmisagar (d) East Badagada (e) near Punama Gate in the Old Town. Besides there is one burial and cremation ground in Satya Nagar having compound walls for the three communities of Hindus, Christians and Muslims.
7. The are only three parks for public use namely, the Indira Gandhi park, Unit-II -Bijupatnaik Park, and Unit-VI - Gandhi Park. Apart from these parks there are also some small parks inside the City namely the park at Nalco Square, NICCO Park, Saheed Nagar Park, J.K.park, Dr. Mukherjee Park, V.S.S Nagar. All these parks are on the vacant land and not for public use. Some parks were developed for the use by the tourists and were very close to the monuments, but the locals are now mostly using them. The open spaces are scattered in small patches in the City and are inadequate.
8. Agricultural practice in the city is mostly observed on the banks of the River Daya and River Kuakhai especially in the southern and eastern stretch. The agricultural lands are used for the production of vegetables and food grains. The fertile tract supports the agro-based economy of the city. The urban fringe areas devoted for the agricultural practices. Unorganized development is more on agricultural land than the formal development and rate of growth of unorganized development is very high than planned/project based development.
9. Vast land especially in the northwest are lying vacant because of the undulating and hilly topography.

Table 3.7 shows the present ward wise land use of Bhubaneswar.

Table – 3.5
Ward wise land use pattern (1999)

| Ward No. | Residential area | Commercial | Industrial | Administrative | Institutional, utilities and transport | Open Space, Agricultural, vacant land space | Water |
|----------|------------------|------------|------------|----------------|--|---|----------|
| 1 | 6.65 | 0.242292 | 2.7804 | 0.301872 | 0.362776 | 1.208812 | 0.846036 |
| 2 | 3.99 | 0.408939 | 1.226817 | 0.255282 | 1.022754 | 0.204876 | 1.022754 |
| 3 | 1.48 | 0 | 2.223951 | 0.211435 | 0.211435 | 0.476376 | 4.024169 |
| 4 | 2.11 | 0 | 0 | 0.087568 | 0.175557 | 0.52625 | 1.315625 |
| 5 | 0.7 | 0.13332 | 0 | 0.13332 | 0 | 0 | 0 |
| 6 | 0.61 | 0 | 0 | 0 | 1.741689 | 0.102408 | 0.051204 |
| 7 | 0.8 | 0.187083 | 0 | 0.046683 | 1.9656 | 0.514917 | 0 |
| 8 | 0.4 | 0 | 0 | 0.2125 | 0.6375 | 0 | 0 |
| 9 | 0.5 | 0 | 0 | 0.07506 | 0.37503 | 0.07506 | 0.07506 |
| 10 | 0.61 | 0.275823 | 0 | 0.22059 | 0.496413 | 0 | 0.110295 |

| Ward No. | Residential area | Commercial | Industrial | Administrative | Institutional, utilities and transport | Open Space, Agricultural, vacant land space | Water |
|--------------|------------------|-----------------|-----------------|-----------------|--|---|-----------------|
| 11 | 0.42 | 0.26843 | 0 | 0.26843 | 0.26843 | 0.17901 | 0 |
| 12 | 0.74 | 0.18337 | 0 | 0 | 0 | 0 | 0.18337 |
| 13 | 1.25 | 0 | 0 | 0.351611 | 0.150722 | 0.401778 | 0.050167 |
| 14 | 1.21 | 0.105196 | 0 | 0.315809 | 0.157794 | 0.421005 | 0 |
| 15 | 0.43 | 0.078396 | 0 | 0.313302 | 0.235047 | 0.078396 | 0 |
| 16 | 0.92 | 0.0462 | 0 | 0.0462 | 0.2772 | 1.0164 | 0 |
| 17 | 0.71 | 0.303056 | 0 | 0.35344 | 0 | 6.157376 | 0 |
| 18 | 7.99 | 0.784322 | 0 | 0 | 1.50766 | 4.943092 | 0 |
| 19 | 6.03 | 0.482729 | 0 | 0 | 0.361816 | 2.050906 | 0.301821 |
| 20 | 2.07 | 0 | 0 | 0.159393 | 3.51299 | 2.182336 | 0 |
| 21 | 0.8 | 0.047476 | 0 | 0.379476 | 0.379476 | 0.047476 | 0 |
| 22 | 0.8 | 0.09393 | 0 | 0.140895 | 0.28179 | 0.046965 | 0.18786 |
| 23 | 0.45 | 0 | 0 | 0.1125 | 0.3375 | 0 | 0 |
| 24 | 0.9 | 0 | 0 | 0.050167 | 0.050167 | 0.050167 | 1.155167 |
| 25 | 1.32 | 0 | 0 | 0 | 0 | 0 | 1.888122 |
| 26 | 1.45 | 0 | 0 | 0.051813 | 0.207252 | 0 | 0 |
| 27 | 1.87 | 0 | 0 | 0 | 0.197017 | 0.147695 | 0.492678 |
| 28 | 0.64 | 0 | 0 | 0 | 0 | 0.05355 | 0.05355 |
| 29 | 0.69 | 0 | 0 | 0 | 0.024723 | 0.744504 | 0.545916 |
| 30 | 1.07 | 0 | 0 | 0 | 0 | 0.048597 | 1.794597 |
| Total | 49.61 | 3.640562 | 6.231168 | 4.087346 | 14.93834 | 21.67795 | 14.09839 |

The existing land use is shown in Map 1. Mixed land uses are seen in most parts of the city. The functions such as trade commerce, open spaces, recreational areas, industries excluding households employment centres, community facilities utilities and services have encroached upon the existing areas meant for residential and other such purposes. Also, it is seen that the tourism areas have wholesale markets in close proximity. The older parts of the city have more such mixed land uses. These changes have lead to spiralling land values and adding density to the already congested areas, especially to the old town area in Bhubaneswar.

4 OBSERVATIONS ON PLANNED DEVELOPMENT

Having planned development is an important aspect for Bhubaneswar for ensuring tourism and protection of the monuments. Lack of planning, congestion, encroachments and deteriorated environmental conditions are predominantly visible in the city. Even activities/functions with high potential for economy generation have been poorly planned and managed. In spite of its eminent and rich heritage, and growing environmental problems, not much effort has been put in for better planning of the city.

- i. The development in Bhubaneswar even today is based on the Master Plan prepared in 1968. The approach of the master plan lacks inputs on the environmental considerations. The environmental requirements of the city to suit to its functions, as a tourist city and a centre for trade & commerce were not well reflected in the Plan.

- ii. There are many areas with prominent monuments such as Lingaraj, Rajarani, Mukteswar and Dhauli having high tourism potential but have been neglected. The areas surrounding these monuments are in a very bad condition. All these monuments being located mostly in Old Town Area and there is a possibility of developing them into a tourism or heritage corridor.
- iii. The city although has a number of craftsmen with skills in stone-inlay, appliqué work, wood carving, brassware, horn work, bamboo articles, silver filigree works, textiles, painting etc. Hardly these activities are organised and emphasized. These activities have tremendous tourism potential and provide employment opportunity to the local people if are properly organised.
- iv. A number of slums have come up with housing about 30% of the city's population.
- vi. The city was planned built on a gridiron pattern. With the process of time it started developing in a rectangular shape. But due the low lying flood plain of the Daya river, the distributary of Kuakhai in the south and the east and the location of the Bharatpur Reserve Forest in the north and the north west, the structure is now more or less in a dumb shape and the city is growing on Kolkata-Chennai Corridor and Cuttack-Puri corridor along the national highway.
- vii. The road network and further developmental activities are not properly planned.
- viii. The open spaces, parks, recreational areas are inadequate and not properly organized in the city. They, especially the green belts/plantation, are to be planned to cater to environmental functions including microclimate control, pollution control (SPM) and improvement of aesthetics.
- ix. Commercial areas in the city are characterized by problems relating to limitation of space, storage, on-street loading/unloading, heterogeneous traffic predominated by slow mode vehicles and idle parking etc.
- x. A number of incompatible land use are found within the city that needs to be relocated.
 - ❑ Wholesale vegetable godowns at Ashoknagar–Unit– 2 contributing to the problem of traffic congestion, unhygienic conditions in this residential area.
 - ❑ Wholesale warehousing activities are presently continuing at Unit – II, III, Station Road and at Rasulgarh area.
 - ❑ The burial ground at Satyanagar.
 - ❑ The trenching ground located near Khandagiri. The disposal of garbage are also being carried out on the same ground with the proposal for development of a residential colony at Aiginia.
 - ❑ The location of the slaughter House near Kalpana Cinema in Badagada is still operational. Also, the new slaughterhouse at Gadaa Gopinath Prasad needs to be upgraded and proper solid waste and drainage facility needs to be provided.
 - ❑ There are a number of poultry farms, the more important among them being Central Poultry Farm of veterinary College, Siripur, Adivasipadia in Unit-I and at Laxmisagar.
 - ❑ Due to the OMFED Milk plant a number of a number of gowalas are functioning on the available vacant space leading to unhealthy and in sanitary conditions. It would be desirable to shift these gowalas to some identified location at the outskirts of the city and organized them through OMFED to ensure preservation and marketing of milk.
- xi. The traffic and transportation system is inadequate.
 - a. The present transportation network is inadequate to take the load of existing traffic.

- b. The access to the monuments is poor.
 - c. There is 1 bus terminus near Baramunda Bus Stand, which bring in not only the tourists but also the local passengers. This is crating a lot of additional traffic leading to congestion of the area. There is also one old Bus Stand near to Unit-I market where the city town buses used to come for inter city movement.
 - d. The NH-5 is from Phulnakhra Square to Chennai goes through the City and meets most of the traffic intersection points and NH-203 starts from Rasulgarh and finally leads to Puri.
 - e. There is no proper access road from the railway station to the monuments but there is always traffic congestion during the peak areas.
 - f. For the inter-city movement, the road network is well defined. Poor land use planning has resulted in mixed traffic and high congestion throughout the city.
 - g. For intra-city movement the road network is good. The tourist traffic has to pass through congested roads to reach the monuments and other facilities in the city. The heavy-duty trucks, passes through the congested internal roads of Bhubaneswar occasionally, mostly on the roads closer to the monuments.
 - h. Non-availability of required parking facilities pose problems, which ultimately leads to traffic congestion.
 - i. The tourists have poor access to the local shopping/commercial areas
- xii. The old city of Bhubaneswar had also grown rapidly during last decades. Increase in population in old town has created number of problems. The old town areas which has number of heritage temples and monuments is characterized by number of problems:
- Inadequate road network system, as a result of which there is always traffic congestion in almost all roads of the old city.
 - Inadequate parking space for vehicles.
 - Lack of drainage and sewerage system due to which the water of the religious tanks are being polluted with inflow of drainage and sewerage system.
 - Due to lack of space high-rise construction are being undertaken close the temples which has caused loss of visibility.
 - Most of the temples are in the process of deterioration.
 - Solid waste generated in the area is being dumped along the drains and the boundaries of the ponds posing environmental problem.
 - Availability of tourist facilities is negligible. The area needs high standard sanitation for the tourist and the people visiting the temple complexes.
 - No organized open space/green areas.