FUTURE LAND USES FOR DEVELOPMENT OF THE ANANTAPUR MUNICIPAL CORPORATION

Residential area:

The Anantapur Municipal Corporation has proposed its master plan for the development of Anantapur town in the year 1981. The total area of Anantapur town during 1981 was 806 hectares. Out of this area about 185 hectares was used for residential area, 8 hectares for commercial area, 10 hectares for industrial area, 10 hectares for recreational area, 61 hectares public and semi-public use, 67 hectares for transport and communications use, 22 hectares for water bodies and 443 hectares as vacant land. By 2004 the total area of Anantapur Municipal Corporation was 2683 hectares. The total area under residential area during 2004 was 1529 hectares. There is an increase of about 1344 hectares in residential area from 1981 to 2004. The ward numbers 20, 21, 22, 23, 24, 25 and 26 contains above 70% of the land under residential and commercial use (Figure 8.1). The ward numbers 2, 3, 5, 7, 8, 9, 10, 13, 14, 15 and 16 contains of about 50% to 70% of the area under residential use. The ward numbers 11 and 15 contain 40% to 50% of area under residential area. The ward numbers 1, 4, 6, 11, 12, 17, 18, 19, 27 and 28 contains less than 50% of area under residential area. The wards 1, 6, 18, 19 and 28 contain less than 20% of respective area under residential use. These wards are the low density area having wide scope for residential development. In general it is found that there is an inter mixing of residential and other land uses in almost all the wards of the Anantapur Municipal Corporation.
WARD WISE PERCENTAGE OF RESIDENTIAL AREA OF ANANTAPUR MUNICIPAL CORPORATION

INDEX

- < 50%
- 50% to 70%
- > 70%

SCALE IN METRES

Fig. 8.1
Commercial area:

During 1981 the land under commercial area was only 8 hectares. There was a substantial increase of commercial area to about 67 hectares during 2004. The increase in commercial area from 1981 to 2004 was 59 hectares. The substantial land under commercial use is confined to ward numbers 10, 11, 13, 14, 15, 16, 20, 21, 22, 23, 24, 25 and 26 (Figure 8.2). The frontages of almost every building on the main roads like Subash road, Gandhi road, Tilak road are occupied by commercial establishment with residential quarters in the rare and upper coarse. The need for separation of commercial activity from some of the main roads by developing business centres is imperative. Shopping centres along Raju Street, commercial complexes in R.R. Buildings along Subash roads. Hotels, restaurants, lodgings and other shopping areas along Subash road, banks, LIC office, and super bazaar are some other commercial areas in ward numbers 10, 11, 13, 14, 15 and 19. Municipal vegetable market and sandy market area in old town along the Trunk road and other shopping centers along Gandhi road and Tilak road are the important commercial centres of ward number 19. Besides these major business centres retail and whole sale trade is carried on in many streets of old town in the wards 20, 21, 22, 23, 24, 25 and 26. Recently a number of shopping complexes have been developed along the Subash road, Raju road and old town roads. The Tower Clock area of Anantapur town has become one of the important business centres in Anantapur town after the development of municipal and police welfare complexes. The old bustand is sifted to ward number 13. The other business centers developed in the Anantapur Municipal Corporation are Sapthagiri Circle, Sanjeeva Reddy Circle, and old town market area. In above said circles there is very limited space for parking of vehicles. The municipal authorities should provide the parking facilities in these centers by widening the roads.
Industrial area:

Significant land under industrial area is observed in ward numbers 1, 4, 6, 9, 13, 15, 17, 19 and 28 (Figure 8.3). The ward number 1 contains oil mills. M.G.Brothers work shop is found in ward no. 4. Some grinding factory and oil mills are found in ward no. 6. Automobile work shop, engineering work shop, rice and flour mills and tyre rebuttoning company are present in ward no.9. Timber depots, saw mills, printing process, flour and oil mills, furniture industries, electrical industries, A.P.S.R.T.C. repairing garage and work shop are the major industries in ward no. 13. Engineering and automobile work shops and timber depots and saw mills are found along Raju road in ward no, 15. Oil mills, rice and flour mill, saw mill and starch factory are found along Gooty road in ward no. 17. The ward no. 19 contains rice and oil mills, saw mill, deorticating factory along Gooty road. The ward no. 28 contains oil and rice mills along the Bangalore road. The ward no.s 2, 3, 5, 7, 8, 10, 11, 12, 14, 16, 18, 20, 21, 22, 23, 24, 25, 26 and 27 do not have any industrial establishments. Future industrial establishments may be established in ward no.s 1, 4, 5, 6, 11, 12, 17, 19, 27 and 28 in the peripheral area of Anantapur Municipal Corporation.

Recreational uses:

The land under recreational use during 1981 was 10 hectares. It was increased to 94 hectares by 2004. The increase in land was 84 hectares from 1981 to 2004. Sizable land under recreational use is found in ward no.s 1, 2, 10, 11, 12, 13, 18 and 19 (Figure 8.4). Land under recreational is not found in respect of 3, 4, 7, 8, 9, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25 and 26. So the recreational use and parks can be developed in wards 4, 6, 7, 8, 9, 11, 12, 13, 19, 27 and 28.
SUBSTANTIAL LAND UNDER COMMERCIAL USE
OF ANANTAPUR MUNICIPAL CORPORATION

LEGEND
- Commercial area
- Road net work
- Line of works
- Out-line
- Canal

SCALE IN METRES

Fig 8.2
WARD WISE SIGNIFICANT LAND UNDER RECREATIONAL AREA OF ANANTAPUR MUNICIPAL CORPORATION

INDEX
- Recreational uses
- No recreational uses

Scale in metres

Fig 8.4
Public and semi-public offices use:

Land under public and semi-public offices uses was 61 hectares in 1981. It grew to 283 hectares during 2004. The increase was 222 hectares of land from 1981 to 2004. The land under this category includes all educational institutions, hospitals, and dispensaries, Government offices, municipal offices, office of the other local authorities and other public and utilities and burial ground. The public and semi-public offices use of land are found significantly in wards 1, 2, 6, 7, 8, 11, 12, 13, 17, 19, 27 and 28 (Figure 8.5).

Transport and communications (Land under circulation):

The total land under transport and communications was 67 hectares in 1981. It has been substantially increased to 295 hectares in 2004. The total increase of land under transport and communications from 1981 to 2004 was about 228 hectares. The land under this item includes streets, roads, railways and their offices and bus terminals. The areas where the land under this category is substantially high are in the ward no.s 1, 6, 11, 12, 13 and 28. The railway yard and goods shed are located in ward number 1. The Anantapur railway station, A.P.S.R.T.C bustand are located in ward number 13. Due to narrow roads in commercial areas the parking facilities are inadequate.

Water bodies:

The total land under water bodies was 22 hectares in 1981. During 2004 it was 72 hectares. The increase was 50 hectares. Sizable land under water bodies are found in ward no.s 1, 4, 16, 17, 19 and 28. The Tungabhadra High Level Canal passes through 1, 13, 17 and 19. The Nadimi vanka stream flows through 1, 4 and 6. The Morava vanka
WARD WISE SIGNIFICANT LAND UNDER PUBLIC AND SEMI-PUBLIC OFFICES AREA OF ANANTAPUR MUNICIPAL CORPORATION

INDEX
- Public & semi-public offices uses
- No Public & semi-public offices uses

SCALE IN METRES

Fig 6-5
stream passes through ward numbers 17 and 28. The ward numbers 2, 3, 5, 7, 8, 9, 10, 11, 14, 15, 16, 20, 21, 22, 23, 24, 25 and 26 have no water courses.

**Land under vacant:**

The total vacant land in 1981 was 443 hectares. It was 303 hectares in 2004. There was a decrease of 140 hectares of vacant land because of increase in built up area. Substantial areas of vacant land are found in 1, 4, 6, 11, 12, 27 and 28. In almost all the wards of the old town containing the built up area the ward numbers of 20, 21, 22, 23, 24, 25 and 26 have no vacant land. The ward no.s 3, 8, 9, 10, 14, 15, 16 and 18 have partial vacant land. Large areas of agricultural land are found in ward no.s 1, 4, 6, 12, 13, 17, 19, 27 and 28. The ward no.s 6, 27 and 28 contains lands under dry cultivation and ward no.s 4, 12, 13, 17 and 19 contains land under wet cultivation. The ward number 1 contains both dry and wet. The ward number 27 is covered by a few pediments. The ward numbers 3, 5, 7, 8, 9, 10, 11, 12, 14, 16, 20, 21, 22, 23, 24, 25 and 26 have no land under agricultural use.

As per the recent trends a planned city should have 55% of the land under residential uses, 5% under commercial uses, 7.5% under educational uses and other uses, 7.5% under recreational uses and 25% land under circulation. But the land use pattern of Anantapur Municipal Corporation is not in conformity with these standards. Therefore in the present study an attempt is made to describe land requirements for residential uses, commercial uses, industrial uses, recreational uses and public and semi-public uses for 2011, 2021, 2031, 2041 and 2051.
FUTURE LANDS REQUIREMENTS FOR VARIOUS LAND URBAN USES:

The land requirements have been assessed for future urban growth of Anantapur Corporation for the next 50 years after having arrived at the projected population. The projected population of 2011 is estimated to be 2,89,205, in 2021 it is 3,86,379 in 2031 it is 5,22,190, in 2041 it is 7,10,220 and in 2051 it is 9,69,272. The overall requirement of land use is worked out at on overall density of 100 persons per hectare. For the estimated population of 2,89,205 in 2011 the land requirement is 2892 hectares, in 2021 it is 3864 hectares, in 2031 it is 5,222 hectares, in 2041 it is 7,102 hectares and 2051 the overall land requirement for projected population of 9,69,272 is about 9,693 hectares.

Land requirement for residential use:

At an overall density of 150 persons per hectare, the land requirement for residential use in 2011 is 1928 hectares, by 2021 it is 2,576 hectares, in 2031 it is 3,481 hectares, in 2041 it is 4,735 hectares and in 2051 the land requirement for residential is about 6,422 hectares.

Land requirement for commercial use:

The total number of workers in trade and commercial are estimated to be 12,170 in 1991. The number of workers under this category is 14,705 in 2001. The projected workers would be 17,352 in 2011, 23,182 in 2021, 31,331 in 2031, 42,613 in 2041 and 58,156 by 2051. The existing land for trade and commercial activity is about 104 hectares during 2001. Land requirement for this activity are worked out at a standard of 100 workers for gross hectare. The requirement of land for commercial uses thus worked out to be 173 hectares in 2011, 202 hectares in 2021, 313 hectares in 2031, 426 hectares in 2041 and 532 hectares in 2051.
Land requirement for industrial use:

The industrial working force in manufacture industry is about 7,662 in 1991 and 9,667 in 2001. It is estimated to be 12,667 by 2011, 16,923 by 2021, 22,872 by 2031, 37,108 by 2041 and 42,454 by 2051. The existing land for industrial uses is 22 hectares in 1991 and 40 hectares in 2001. Land requirement for industrial uses are worked out at a standard of 100 workers per gross hectare. The requirements of land for industrial use would be 127 hectares by 2011, 159 hectares by 2021, 229 hectares by 2031, 371 hectares by 2041 and 424 hectares by 2051.

Land requirement for recreational use:

A standard of 0.6 hectares is the developable area per 1000 population for recreational use and public and open space. The existing land for recreational use was 38 hectares in 1991 and 80 hectares in 2001. It is estimated for the land requirement recreational use is about 173 hectares by 2011, 202 hectares by 2021, 313 hectares by 2031, 426 hectares by 2041 and 528 hectares by 2051.

Land requirement for public and semi-public offices use:

The land available for public and semi-public offices use was 144 hectares in 1991 and 268 hectares in 2001. It is estimated that the land required for public and semi-public offices uses is about 323 hectares by 2011, 346 hectares by 2021, 510 hectares by 2031, 675 hectares by 2041 and 807 hectares by 2051.

Land requirements for transport and communications use:

The land that was available for transport and communications was 144 hectares in 1991 and 268 hectares in 2001. It is estimated that the land required for transport and
communications by 2011 is about 370 hectares, by 2021 it is 407 hectares, by 2031 it is 589 hectares, by 2041 it is 789 hectares and by 2051 the land requirement for transport and communications is 908 hectares.

The proposed urban land use by 2051 has been estimated to be 9,693 hectares (Table 8.1). Out of this, 6422 hectares is under residential area which amounts to 66.25% of the total area. The commercial area covers an area of about 532 hectares and it accounts to 5.49% of the total area. The industrial area is estimated to be 424 hectares and it amounts to 4.37%. The required recreational area is about 528 hectares and it accounts to 5.45%. The required land under public and semi-public offices is about 807 hectares. It is about 8.32% of the total area. The total land required for transport and communications is about 908 hectares and its accounts to 9.37% of total area. The water bodies remain to be 72 hectares of land. It accounts to be 0.74% of the total area.

Water requirement

Protected water supply of Anantapur Municipal Corporation was commissioned in the year 1924. There are two sources of water supply to the Anantapur Municipal Corporation 1. Pandameru and 2. Tadakaleru. The Pandameru scheme was originally designed to serve a population of 10,000 at 15 gallons per head per day of the old town area. It actually supplied about 75,000 gallons of water/day against 1.5 lakhs gallons it was designed for. This source of water goes dry in summer. The second source of water is the Tadakaleru river bed which is about 3 km. from Anantapur. The scheme was designed to supply 9 lakhs gallons water/day. The actual supply of water is 3 lakhs gallons per day. It was intended to serve the new town area. The two water supply sources for the Anantapur Municipal Corporation were designed to yield 10.5 lakhs
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gallons of water/day. But the yield was only 3.75 lakhs gallons/day. The Anantapur Municipal Corporation has proposed a comprehensive water supply scheme to bring Tungabhadra water from Mid Pennar reservoir to supply 50 lakhs gallons of drinking water daily. The water requirement at the rate of 30 gallons/head/day during 1991 was 52.47 lakhs gallons, 66.28 lakhs gallons in 2001, 86.76 lakhs gallons in 2011, 115.91 lakhs gallons in 2021, 156.65 lakhs gallons in 2031, 213.06 lakhs gallons in 2041 and 290.78 lakhs gallons in 2051. The total water resources available from all sources are only 53.75 lakhs gallons. There is a deficit of 12.43 lakhs gallons in 2001. The deficit of water sources by 2011 would be 33.01 lakhs gallons, by 2021 it is 62.16 lakhs gallons, by 2031 it is 102.90 lakhs gallons, by 2041 it is 159.31 lakhs gallons and by 2051 the deficit of water resource could be 237.03 lakhs gallons. Therefore the Municipal Corporation has to envisage plans to bring about 100 lakh gallons of water/day from the Mid Pennar dam to meet the present day demand of water in the Anantapur Municipal Corporation.

**Drainage**

The disposal of sullage water has been carried out by means of open drainage system which extended throughout the Anantapur Municipal Corporation. The drains are constructed in a piece meal manner with out proper maintainance of levels and proper out lets. This has a resulted in the stagnation of sullage water in the drains emitting foul smell and increased mosquitoes growth. This lead to a dangerous health hazard to people of Anantapur Municipal Corporation. The slope of the town is from south to north and aginst from west to east. Most of sullage water is left into Morava vanka, Nadimivanka and Tadakaleru streams. There are no water treatment plants and sewage farms. The municipal authorities have to construct sewage farms to treat the
water left out into Morava vanka, Nadimivanka and Tadakaleru streams. After treatment of seawage water it could be utilized for irrigation purposes in the downstream area. A comprehensive underground drainage system has to be planned to the entire Municipal Corporation in different phases to avoid the problems relating to water born diseases and mosquito bite diseases. It may involve a huge financial investment for construction of underground drainage system but the Corporation may seek the assistance of Asian Development Bank or World Bank for financial support.

**Development of commercial centres:**

The commercial centres of Anantapur Municipal Corporation are concentrated along the Gandhi road and Tadipathri road in old town area, Subash road, Raju road, Railway feeder road, and Arts college road in new town area. Recently a few shopping complexes along Subash road, Raju road, Railway feeder road and Arts college road are developed. A number of residential areas have been developed in the western part of the Railway line and northern and southern parts of Anantapur Municipal Corporation. The residents of new developed colonies have to walk long distances to reach the shopping areas for their day to day marketing needs. The Municipal Corporation has proposed 23 commercial centres to make available marketing facilities to the residents in the newly developed colonies. These centers have been fairly distributed catering to different localities. The centres have been proposed of the ratio at one marketing centre for every 7500 population.

**Development of parks and play grounds:**

The land available for recreational purposes was only 3 hectares in 1971, 10 hectares in 1981, 38 hectares in 1991, 80 hectares in 2001 and 94 hectares in 2004. As per the space standards an extent of one hectare is required for recreational purposes for
a population of 2000. The required land for recreational purposes for 2001 was 110 hectares. It is about 145 hectares in 2011, 193 hectares in 2021, 261 hectares in 2031, 355 hectares in 2041 and 485 hectares in 2051. The provision of land for the recreational purpose for Anantapur Municipal Corporation is going to be a greater problem and financial strain. Recently two major parks are developed in Anantapur Corporation. The first is located on the southern bank of Tadakaleru River named as Central Park. The second park has been developed in the Housing Board Colony in the southern part of the Municipal Corporation. There is no play ground for public use maintained by Municipal Corporation or by the government. As per the standards a minimum extent of two hectares of play ground has to be provided for every 25,000 population. In 2011 the Anantapur Municipal Corporation requires about 23 hectares of play ground in 11 locations. By 2021 the Anantapur Municipal Corporation requires about 31 hectares in 15 locations. In 2031 as per the projected population the Anantapur Municipal Corporation requires about 42 hectares in 21 locations. By 2041 the land required for play grounds is about 71 hectares in 35 locations and in 2051 the land requires for play grounds is about 96 hectares in 42 locations.

Development of new roads and widening:

The major roads in Anantapur Municipal Corporation over which the heavy and light vehicles, trucks, cars, autorikshas, motor cycles, cycles etc. are flying are Anantapur – Ballary road, Anantapur – Kalyandurg road, Anantapur – Tadipathri road, Subash road, Gandhi road, Hospital road, Railway station road, Railway feeder road, Tilak road, Rajaji road. All these roads have to be widened to ease the traffic flow over these roads. They have to be widened to a minimum of 30 meters width. To improve the traffic linkages in north south and east west directions in compliance with the rising
needs of the new areas brought with in the orbit of Municipal Corporation a few new roads have to be laid.

1. A 30 meters wide road in east west direction located north of the J.N.T.U Engineering College and south of Sathya Sai Baba Women’s college joining the Bangalore road on the east and National Highway diversion road on the west.

2. Another 30 meters road south of Jesus Nagar and Collector’s office has been suggested in east west direction meeting Raptadu road on east and Prasannayapalli road on the west.

3. A 30 meters road in between railway track and National Highway diversion road in northsouth direction meeting Sanapa road on the north and proposed 30 meters road on the south.

4. Another 30 meters road has been suggested northsouth in between Raptadu road and Morava vanka west of engineering college road.

5. The fifth 30 meters road has been suggested in northsouth direction, north of Police training college and west of railway station road meeting national highway diversion road on north and Ballary road on the south.

6. A 30 meters wide road has been suggested in northsouth direction meeting Gooty road on the north and Bangalore road on the south. This proposed road is considered as diversion road to the Gooty - Bangalore road section which passes through the congested and densely populated and commercial areas of the old town.
7. The seventh 30 meters road proposed is starting at the north boundary of Anantapur Tank taking off from Tadipathri road and meeting Gooty road. It ultimately joins with the National Highway diversion road on the north western part of the Anantapur Municipal Corporation.

Clearance of slums:

There are about 51 slums in Anantapur Municipal Corporation in 2001. The slums in Anantapur Municipal Corporation are cropping up because of unauthorized layouts and migration of people from rural areas to urban areas in search of employment. The Town Planning Board of Anantapur Municipal Corporation has identified about 10 slums which should be cleared during X plan period. However, the authorities could not clear the identified 10 slums but found an increase in slum number from 1991 to 2001. The total slum population of Anantapur Municipal Corporation is estimated to be 60,820 in the year 2001. The total area covered is about 120.75 hectares. The density of slum population is 504 per hectare. The Government of Andhra Pradesh has provided special funds under INDIRAMMA programme for building houses for the urban slum and urban poor people. By 2011 the slum population would be 83,869 and by 2021 it would be 1,15,913. In 2031 the population of slums projected to be 1,82,766 and by 2041 the estimated slum population would be 2,84,088. The total slum population in 2051 is estimated to be 3,87,708. There would be an unchecked growth of slum population from 60,820 in 2001 to projected slum population of 3,87,708 in 2051, which shows an increase of 6.37 times during the next 50 years. The Municipal Corporation has take appropriate measures for upgrading the housing, water, lighting, sanitation, drainage and waste disposals to the urban slum dwellers.
Development of green belts:

As per the standards of the Municipal Corporation the Government of India there should be 5 hectares of green belts for every 10000 population. By 2001 the Municipal Corporation should have 110 hectares assigned for development of green belts. By 2011 it is about 145 hectares. By 2021 the Corporation needs about 193 hectares for development of green belts. In 2031 about 261 hectares are needed for development of green belts in Anantapur Municipal Corporation. By 2041 it needs about 355 hectares and by 2051 the Municipal Corporation needs about 485 hectares for the development of green belts. Unfortunately the green belts in Anantapur town remained on paper and the Corporation could not convert even government lands into green belts as government lands have been occupied by urban poor. However, a few plantations have been taken intensively in Central Park area, Police Training College and in south eastern part of Anantapur Municipal Corporation in Rayalaseema Development Trust, Satya Sai Women's college and on the northern bank of the Pandameru stream near Bangalore road. The Municipal Corporation has to take up appropriate measures to assign the required lands for growing population of Anantapur Municipal Corporation along the western northern, eastern and southern boundaries for development of green belts. The eastern part of the Anantapur Municipal Corporation is covered with Anantha Sagar Tank which is partially filled with sediments brought by the Pandameru stream. The western part of the tank along the Bangalore road, old town and Tadipathri road could be utilized for developing a major green belt in Anantapur Municipal Corporation. However, a few slums have developed during the recent years in this part of the tank. The Municipal Corporation should immediately take measures for massive afforestation along this part of the tank, so that the slum growth could be controlled and green belt could be developed.