CHAPTER IX
CONCLUSIONS

From the analysis of morphological growth of the Anantapur Municipal Corporation it was found that the Anantapur municipality was about 11.45 hectares of land in 1920. It has expanded to 489 hectares by 1971. It further sprawled to 806 hectares aerially in 1981, 1598 hectares in 1991, 1636 hectares in 1994 and 2683 hectares in 1997. The Anantapur municipality was made Corporation on 1st April 2005. The aerial expansion of the Anantapur municipality was 42.70 times between 1920 and 1971 and 5.48 times between 1971 and 1997.

The population of Anantapur town during 1901 was 7,938. Out of this about 4,078 were males and 3,860 were females. By 1911 the population grew to 8457. Out of this 4301 were males and 4156 were females. The decadal growth of population was about 6.54%. During 1921 the population of Anantapur town was 11,452. Out of this 6077 were males and 5375 were females. The decadal growth was + 35.41%. In 1931 the population of Anantapur town was 15,099. Out of this 8064 were males and 7035 were females. The decadal growth between 1921 and 1931 was +31.85%. The population of Anantapur town during 1941 was 21,482. Out of this 11,540 were males and 9942 were females. The decadal growth was +42.27%. During 1951 the population of Anantapur town was 31,952. Out of this 17,025 were males and 14,927 were females. The decadal growth was +48.74%. In 1961 the population of Anantapur town was 52,280. Out of this 27,810 were males and 24,470 were females. The decadal growth was 63.62%. The population Anantapur town was 80,069 in 1971. Out of this 42,440 were males and 37,629 were females. The decadal growth was 53.15%. By 1981 the population of Anantapur town was 1,19,536. Out of this 62,522 were males and 57,014 were female. The decadal growth was 49.29%. During 1991 the population was 2,683 hectares.
of Anantapur town was 1,74,924. Out of this 90,070 were males and 86,854 were female. The decadal growth was 46.33%. The population of Anantapur town in 2001 was 2,20,951. Out of this 1,12,273 were males and 1,08,678 were female. The decadal growth from 1991 to 2001 was 26.31%. The population of Anantapur town grew from 7938 in 1901 to 2,20,951 in 2001. The growth was nearly 27.83 times.

From the analysis of ward wise population distribution during 1981, 1991 and 2001 it is found the number of wards increased from 5 to 6 during 1981 – 91 and 6 to 7 during 1991 – 2001 with population of less than 2000. There was a decline in the number of wards with the population range from 2000 to 4000. In 1981 they are found in 11 wards and in 1991 in 7 wards. During 1991 and 2001 there was increase in only one ward, that is from 7 to 8. In the category of 4000 to 6000 population the number of wards has increased by only one from 1981 to 1991 that is from 5 to 6. But during 1991 and 2001 there was a decline in the number of wards by 3 that are from 6 to 3. In the wards with population above 6000 there is an increase in number of wards from 7 to 9 during 1981 and 1991 and 9 to 11 during 1991 and 2001. The fluctuations in the population are attributed to be movement of the people from one ward to the other with in the municipal corporation.

From the analysis of the distribution of density of population during 1981, 1991 and 2001, it is found that the wards with the less than 150 persons / hectare has decreased from 11 in 1981 to 10 in 1991 and to 7 in 2001. The wards with a range of population density of 150 to 300 persons / hectare showed a decrease from 7 to 6 during 1981 and 1991 and an increase from 6 to 10 during 1991 and 2001. The ward with population density of 300 to 450 persons / hectare varied from 1 to 2 in 1991 and remained two in 2001. The ward with population range of 450 to 600 persons / hectare
has gradually increased from 3 in 1981 to 4 in 1991 and 5 in 2001. The wards with more than 600 persons / hectare remained 6 in 1981 and 1991 and reduced to 4 during 2001. The analysis showed an increase in wards with population density of 150 to 300 persons / hectare, 300 to 450 persons / hectare and 450 to 600 persons / hectare. There was a decrease in the number of wards with population density of less than 150 persons / hectare and in the category of more than 600 persons / hectare.

Out of the total population of 2,20,951 of 2001 Census about 65,588 are total workers. It amounts to 29.68% of the total population. Out of the total workers about 54,785 are male which accounts to 83.53% and 10,803 are female. It accounts to 16.47%. The total number of marginal workers is 4981. They marginal workers accounts to 2.26% of the total population. Out of the total marginal workers about 2627 are male 2354 are female. The total number of non-workers are 1,50,382. The non-workers accounts to 68.06% of the total population. Out of the total non-workers 54,861 are male and 95,521 are female. The total workers and marginal workers put together are 70,569. Out of the 70,569 workers 923 are cultivators which accounts to 1.31%. Out of the 923 cultivators 841 are male and 82 are female. The total agricultural workers of the Anantapur Municipal Corporation are 1059 which accounts to 1.50% of the total and marginal workers. Among agricultural workers 737 are male and 322 are female. The total workers involved in house hold industries are 3513. They account to 4.99% of the total and marginal workers. Out of the 3513 workers involved in house hold industry 1416 are male and 2097 female. The total other workers are 65,074 in 2001 which accounts to 92.21% of the total and marginal workers of the Anantapur Municipal Corporation. From the study occupational structure of Anantapur Municipal Corporation it is found that about 92.21% of total and marginal workers are involved in other workers category. The lowest category of 923 workers is found as cultivators.
During 2004 the area of Anantapur Municipal Corporation remained as 2683 hectares of land as it was in 1997 and 2001. The land under residential was 1529 hectares. It accounts to 56.99%. The area under commercial land was 67 hectares. It accounts to 2.49% of total area. The area under industrial use was 40 hectares. It accounts to 1.49%. The land under recreational purposes was 94 hectares. It accounts to 3.50%. The land under public and semi-public offices was 283 hectares of land. It accounts to 10.54%. The total land under transport and communications use during 2004 was 295 hectares. It accounts to 10.99%. The land under water courses and water bodies was 72 hectares. It accounts to 2.68%. The land under vacant area was decreased by 338 hectares from 2001 to 2004. The total land under vacant land category was 303 hectares. It accounts to 11.29%. The decrease in the vacant land was due to increase in the land of residential, commercial, recreational, public and semi-public offices and transport and communications. The residential area was increased by 268 hectares from 2001 to 2004. The analysis of land use of 2004 indicates that the residential area dominates over the other categories of land use. It accounts to 56.99% of the total area.

From the analysis of decadal wise change it is found that there was steep increase in residential area and total area of the Anantapur Municipal Corporation from 1971 to 2001.

From the analysis of land use changes it is found that there was an increase in geographical area from 1971 to 1997. The increase was 2194 hectares. The geographical area remained as 2683 hectares during 1997, 2001 and 2004. There was a steep increase in residential area during 1981 to 1991. The increase was 438 hectares. Similarly from 1994 and 1997 the residential area was increased by 481 hectares. The
growth of residential area was due to increase in population, migration of the people from the rural areas, establishment of new educational institutions and other economic activities. The commercial area was increased by 16 hectares during 1981 and 1991. It has further increased to 40 hectares during 1994 to 2004. The steep increase in commercial activities was due to increase in population, migration, establishment of new Educational institutions, banks, infrastructural facilities and other economic activities. In the Anantapur Municipal Corporation the development of industrial area was very slow. The increase was found high during 1981 to 1991 and 1991 to 2001. However the industrial sector was not established well in the Anantapur Municipal Corporation, due to poor entrepreneurship and low economic and agricultural activities in and around Anantapur Municipal Corporation. There was a gradual increase in public and semi-public offices and transport and communications. There was decrease in vacant land during 1991 and 1994, 1997 to 2001 and 2001 to 2004, due to increase in the residential, commercial, recreational, public and semi-public offices and transport and communications.

The total area under central business use is estimated to be 25.25 hectares. It accounts to 0.94% of the total area of Anantapur Municipal Corporation. The central business district area is concentrated along Subash road, Railway station road, Raju road, old town, Bangalore road, Sapthagiri circle and Tower clock circle. The areas covered are parts of Kamala Nagar, Gulzarpet, Sreenivas Nagar, Neerukanti Street, Rani Nagar, Munna Nagar, Ambedkar Nagar and Tadipatri road. The central business district area is boarded by residential area, Railway station, central bus stand and old town market. The western part of the central business district area is bounded by Railway line and Railway station. The northern part is bounded by central bus stand and residential area. The eastern boundary is marked by Anantapur old town market.
and Anantha sagar tank. The southern boundary of central business district area is bounded by Govt. Hospital, Obuladev Nagar, Ashok Nagar and Buddappa Nagar. The central business area is almost rectangular shape. The Subash road is famous for cloth shops, foot wear shops, medical shops, cycle shops, stationary shops, bakery shops, hotels, fruits, clock shops, photo studios, banks, theaters and provisional shops. The railway feeder road is noted by book stalls, furniture shops, fancy shops, electronic shops, paints and sanitary, timber depots, automobile shops, foot wear shops, hotels, utensils, lodges and provisional shops. The bus stand road is famous for mechanical shops, printing shops, timber depots, flywood shops, foot wear shops, two wheeler showrooms, hardware shops, lodges, hotels, painting shops, fancy and provisionary shops. The Raju road line between Sathagiri circle and Sreekantam circles is famous for lodges, hotels, stationary shops, fly wood shops, medical shops, electrical shops, automobile shops and cycle shops. The old town Bangalore road is famous for central vegetables market, fruit market, mutton market, jewelry, printing press, whole sale and retail rice dealers. The cinema theater complexes are concentrated near Srikantam circle, Tower clock centre and Neerukanti line.

From the analysis water balance elements and graph it is found that during September and October months there is no water deficit. The water deficit is low during November, December and January months. It is moderate to high in July and August months. The water deficit in the Corporation is high during February, March, April, May and June months. In view of high water deficit in the Corporation the Anantapur Municipal Corporation authorities have to take appropriate steps to supply minimum water of 40 liters/head to the dwellers of the Municipal Corporation.
The total surface of the water resources of the Anantapur Municipal Corporation has been worked out taking geographical area of the Anantapur Municipal Corporation and the mean annual rainfall of Anantapur Municipal Corporation. The total surface water resource of the Anantapur Municipal Corporation is about 14,461,370 m$^3$. Out of this it has been estimated that about 433,841 m$^3$ of surface water resources is recharged to ground water annually. It amounts to 3%. The total surface water resources lost in the form of surface run-off is 5,784,548 m$^3$ which is worked out to be 40% of the total surface water resources. The water lost in the form of evaporation and evapotranspiration is estimated to be 8,242,983 m$^3$. It is estimated to be 57% of the surface water resources. From the analysis of water balance of Anantapur Municipal Corporation it is found that out of the total surface water resources of 14,461,370 m$^3$ about 3% is recharged to ground water, 40% is lost in the form of surface run-off and 57% is lost in the form of evaporation and evapotranspiration. The 40% of water which is lost in the surface run-off could be saved through construction of water harvesting structures in each house and under ground storage tanks.

From the study of water resources of the Anantapur Municipal Corporation it is found that there is water deficit in all the wards of the Corporation. Therefore, the Corporation has proposed a new scheme to bring about 50 lakh gallons of water per day from Mid Pennar dam through pipe lines. In addition to it the Municipal Corporation has constructed a summer storage tank near Gooty road. The water is supplied every year to this tank through Tungabhadra High Level Canal. This water is used in summer period. Recently about 1000 deep bores have been dug in Anantapur Municipal Corporation for extraction ground water resources. However majority of bore wells have not yielded water. The failure of the deep bore wells are presumed to be due to
hard rock nature of Archean granitic gneisses intruded with doleritic rocks, increase in housing activity, intensive cement and metallic roads, high surface run-off, high water deficit and low recharge.

The major urban problems of the Anantapur municipality are unbalanced development of the Municipal Corporation, pollution (air, noise, water and dust pollution) development of urban slums, shortage of housing, highly congested central business area of the Anantapur Municipal Corporation, high intensity of residential concentration in the old town, absence of organized commercial areas and shopping centres with sufficient parking and storage facility, inadequate city services like water supply, drainage, traffic and transportation, narrow circulation pattern of roads in the old town area, development of slums, encroachment of tanks and solid waste disposals.

The quality of urban life in Anantapur Municipal Corporation has been worked out taking the criteria of economic status, environmental status, health status, education status and social disorganization. The criteria used are income, employment, social welfare, housing, water, sanitation, sewage, pollution, congestion, slums, mortality, chronic diseases, infectious diseases, disabled persons, accessibility to health centers, literates, illiterates, personal pathologies, family background, over crowding, public order and safety, delinquency, demographic, participation and equality. Based on analysis is found the quality urban life is poor in the central wards of the Anantapur Municipal Corporation which cover about 15 wards. The quality of urban life is moderate in three wards. The quality of urban life is good in 10 wards. They are located in the peripheral zones of the Anantapur Municipal Corporation.

The environment impact assessment of Anantapur Municipal Corporation has been worked out at ward level taking 15 criteria and adopting Jenkin’s (1992) method.
of evaluation matrices of environmental impact. The criteria used are ward wise density population, density of housing, land use, ward wise amount of water required, distribution of slums, traffic congestion, solid waste disposal, sewage disposal, air pollution, noise pollution, water pollution, dust pollution, density of vegetation, distribution of chronic diseases and infectious diseases. From the analysis it is found that in about 8 wards located in the old town E.I.A. index is very high. E.I.A. index is moderate in about 10 wards bordering the old town. The E.I.A. index is low in 10 wards. They are located in the peripheral regions of the Anantapur Municipal Corporation.

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

CHAPTER - IX 160
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.