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# **HARIHAR**

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## **P R E F A C E**

In the planning process, the preparation of the Comprehensive Development Plan for a city succeeds the preparation of the Outline Development Plan, it needs revision at least once in ten years. Accordingly preparation of revised Comprehensive Development Plan has been taken up by the Davangere Urban Development Authority, constituted by the Government under KUDA Act – 1987, in 2005, the Government of Karnataka has brought an amendment to the KTCP Act-1961, called as KTCP ( amendment ) Act 2004 and the concept of ODP/CDP has changed as ‘Master Plan’. Hence, the Development Authority has prepared the revision plan as “MASTER PLAN – 2021 (revision–I)”, as per the provision of sec 13D of KTCP (Amendment) Act- 2004.

The Government of Karnataka in its notification NO.HMS/46/TTP/70 dated 25-5-1972 extended the provisions of the Karnataka Town & Country Planning Act 1961 to Davangere City, by declaring a Local Planning Area, as per Section 4A of the Act. A Planning Authority was first constituted by Government in its notification NO.HMA 167 TTP 72 dated 6-4-1973, as per Section 4C of the Act. This Planning Authority was further constituted and reconstituted by Government. In their notifications dated 18-2-1976, 30-11-1978, 17-9-1979, 8-2-1982 and 6-12-1985.

Then the planning authority has prepared the out line Development plan as per previous section 9,10,11,12 & 13 of the Karnataka Town and Country planning Act 1961 for Davangere local planning area and got final approval by Government vide G.O.No. HUD/137/TTP79 dated 28-07-79.

The master plan (CDP) was prepared for Davangere city as per the provisions of the act, and got final approval by the govt. vide G.O. No./HUD/TTP/319/Bangalore 88 dated 20.07.1988.

Further the local planning area of Davangere–Harihar was revised and declared by Govt. in its Notification No. 171: 2003 Covering on area of 25007 hectares. With 40 settlements including Davangere and Harihar Urban Centres and 27 villages in Davangere Taluk and 11 villages in Harihar Taluk are included, Davangere Urban Development Authority is functioning as planning Authority for the Davangere Harihar Local Planning Area. Find enclosed the list of villages & LPA boundary description in schedule-I & Schedule-II.

The Davangere Urban Development Authority has declared its intension it preparation of Master Plan –2021 (revised-I) in its notification No. DUDA MP® /107/2005-06 date 30/09/2005 as per the section 10(1) of KTCP (amendment) Act –2004.

Master Plan (Revision-I) for Davangere-Harihar local planning area was prepared under the sec 13(1) of the KTCP Act-1961 and submitted to the Govt. for provisional approval. The Govt. after considering various proposals and on the advise of the Director of Town planning, has accorded provisional approval in G.O. No:\_UDA/04/BEMPUPRA/2007.BANGALORE Dt. 11.1.2007 and returned the plans with reports to the authority.

The authority, as required under the sec.13(1) of the act invited the public comments and suggestions on the proposals of the provisionally approved master plan of Davangere and Harihar by giving 60 days time. In response to the above, authority received 238 objection and suggestion within the stipulated period. In addition to this, commissioner , city corporation , Davangere, and The KIADB also gives has given requests at the later stage.

The Chairman & members of the authority along with commissioner have inspected the lands which were related to objection/suggestion received.

The authority in its meeting held on 3.09.2007 , discussed in details, on all the objections/suggestions received , including the KIADB & city corporation request. After careful examination of individual objections, authority took the decision to consider only which are suitable from the planning points of view and location with surrounding developments, trend and type of development and potential of land for particular use. Accordingly number. of objection/suggestion were selected and suitably incorporated in the Master Plan.

On the basis of KIADB request, the conurbation boundary of Davangere city is extended towards North-west corner i.e in continuation of the existing Karur industrial Area.

Similarly, the area reserved for IT/BT and Bus terminal is also shifted along with bypass 24.0 mtr. Proposed outer Ring Road.

Further ,the mistakes observed in the Harihar report part which was provisionally approved is verified and corrected accordingly [particularly in page no 31, computation of figures for conurbation area and explanation for deciding the conurbation boundary and actual density.

The Authority expresses its deep gratitude to Shri H.B.Mukunda, the Director of Town Planning, Bangalore for his timely advise and technical suggestion in preparation & submission of the Master Plan (revised) for final approval.

The Authority is thankful to Shri V.M.Hedge, former Director of Town Planning for his advise and technical suggestion in finalizing the master plan (revision-I) for provisional approval.

The Authority thanks the former Chairman and members of the authority for their suggestion in preparation of the plan.

The Authority also records its high appreciations for the excellent work turned out by the officials of the Town Planning Department and Davangere Urban Development Authority.

The authority thanks M/s VISION SOLUTIONS, Hubli for their excellent contribution in computerized works in Master Plans.

Last, but not least, authority thanks all other departments, those who provided necessary details, and also, those directly and indirectly helped in preparation of this project.

**Town Planning  
Member**

Davangere-Harihar  
Urban Development Authority  
Davangere

**Commissioner**

Davangere-Harihar  
Urban Development Authority  
Davangere

**Chairman**

Davangere-Harihar  
Urban Development Authority  
Davangere

**SCHEDULE –I**

List of villages and towns included in the Local Planning Area of Davangere – Harihar

Sl.No.	Name of Town/Village	To which Taluka it belong	Extent of area included
1.	<i>Davangere</i>	Davangere	Entire CMC area
2.	<i>Bethur</i>	-----do-----	-----do-----
3.	<i>Anekonda</i>	-----do-----	-----do-----
4.	<i>Basapur</i>	-----do-----	-----do-----
5.	<i>Chikkanahalli</i>	-----do-----	-----do-----
6.	<i>Avaragere</i>	-----do-----	-----do-----
7.	<i>Voddanahalli</i>	-----do-----	-----do-----
8.	<i>Honnur</i>	-----do-----	-----do-----
10	<i>H. Kalparahalli</i>	-----do-----	-----do-----
11.	<i>Tholahunse</i>	-----do-----	-----do-----
12.	<i>Pamenahalli</i>	-----do-----	-----do-----
13.	<i>Siramagondanhalli</i>	-----do-----	-----do-----
14.	<i>Belavanur</i>	-----do-----	-----do-----
15.	<i>Naganur</i>	-----do-----	-----do-----
16.	<i>Nittuvalli</i>	-----do-----	-----do-----
17.	<i>Kundavada</i>	-----do-----	-----do-----
18.	<i>Halebathi</i>	-----do-----	-----do-----
19.	<i>Agasanakatte</i>	-----do-----	-----do-----
20.	<i>Neelanahalli</i>	-----do-----	-----do-----
21.	<i>Doddabatni</i>	-----do-----	-----do-----
22.	<i>Karur</i>	-----do-----	-----do-----
23.	<i>Yaragunte</i>	-----do-----	-----do-----
24.	<i>Avaragola</i>	-----do-----	-----do-----
25.	<i>Busvanahatti</i>	-----do-----	-----do-----
26.	<i>Devarahatti</i>	-----do-----	-----do-----
27.	<i>Chikkabudihal</i>	-----do-----	-----do-----
28.	<i>Doddabudihal</i>	-----do-----	-----do-----
29.	<i>Mittalakatte</i>	-----do-----	-----do-----
30.	<i>Doggalli</i>	Harihar	-----do-----
31.	<i>Guttur</i>	-----do-----	-----do-----
32.	<i>Bakkapura</i>	-----do-----	-----do-----
33.	<i>Harlapura</i>	-----do-----	-----do-----
34.	<i>Amaravati</i>	-----do-----	-----do-----
35.	<i>Sherapura</i>	-----do-----	-----do-----
36.	<i>Harihar Town</i>	-----do-----	Entire Municipal area
37.	<i>Mahajenahalli</i>	-----do-----	-----do-----

38.	<i>Hanagavadi</i>	-----do-----	-----do-----
39.	<i>Harganahalli</i>	-----do-----	-----do-----
40.	<i>Halasabalu</i>	-----do-----	-----do-----

## **SCHEDULE – II**

### **Running boundary of the Davangere Harihar Local Planning Area**

The eastern boundary starting from the North-eastern corner of Bethur village runs further south along the eastern boundary of the Bethur village till it meets with the north-east corner of Basapura village ,turns South along the northern boundary of Avaragere village till it meets the north-eastern corners of Avaragere village turns south and runs along the eastern boundary of Avaragere village till it meets the north-west corners of Voddanahalli shifted village, turns south-east and runs along the northern boundary of Voddanahalli and Honnur village turns south at the north-eastern corners of Honnur village and runs along the eastern boundary of Honnur village up to its south eastern corner-turns west and runs along southern boundary of Honnur village crosses the National Highway No.4 and runs further west along the Southern boundary of Honnur and H.Kalapanahalli village touches the eastern boundary of Tholahunse village turns south and runs along the eastern corners turns west and crosses the Poona Bangalore Railway line and Davangere Bada road and runs further west along the southern boundary of Tholahunse Pamenahalli and Belavanur village crosses the Davangere-Lokikere Road and Davangere Channagiri Road runs further west along the southwest corners of Naganur village, turns along with the western boundary till it meets with south-eastern corners of Mittalakatte village of Harihar taluka, turns west and turns along the southern boundary of Mittalatte village crosses Davangere-Devarabelakere road runs further west till it meets with the southwest corners of Mittalakatte village turns north and runs along the western boundary of Mittalakatte village till it meets with the southern boundary of Kunduwada village, turns north-west and runs along the southwestern boundary of Kunduwada village crosses the Davangere Belludi road and runs further north west along south western boundary of Kundavada and Halebathi village till it meets with the southern top of Agasanakatte village runs south-west and runs along the south eastern boundary of Hanagawadi village,till it touches the eastern boundary of Sulakere halla- turns north-west and runs along the eastern Boundary of Sulekere halla until it meets the south eastern corners of Naragananhalli village, Turns west and runs along southern and western boundary of Haraganhalli village and runs further west till it meets the south west corners of Haraganhalli village and runs further until it meets the north-east corners of Halasabalu village runs along eastern boundary of Tungabhadra river until it touches the south-west corners of Harihar Town, turns north and runs along western boundary of Haralapura and Guttu village until it reaches northern-eastern boundary of Guttur village further crosses Harapanahalli road runs along north-eastern boundary of Guttur village reaches north eastern corner of Bakkapura village and turns south and runs along



eastern boundary of Bakkapura village until it reaches north eastern corner of Amaravati village runs south along north east corner of Amaravathi village and touches the north western corner of Doggalli Village turn east and runs along with the northern boundary of Doggalli village and reaches north-west corner of Avaragolla village turns north east runs along northern boundary of Avaragolla village crosses Davangere Kondajji Road and runs further east and runs along northern boundary of Avaragolla Basavanahatti and Devarahatti village crosses Davangere-Harapanahalli Road and runs further east along the northern boundary of Devarahatti and Bethur village till it meets with the north eastern corners of Bethur village, the Starting point.

## **CHAPTER I**

### **1.1 Location**

Davangere is a district head quarters and is located along the Poona- Bangalore National Highway (N.H.4). It is at a distance of 263 Kms. from the state head quarters, Bangalore. It can be located on 14' –25' north latitude and 75' –50' east longitude. The city is connected by Poona –Bangalore Railway main line (B.G.) Davangere is well connected by Roads also. The Biruru-Sammasagi state High way passes through the city connects the National Highway. The major communicating routes being the National Highway No.4, The Davangere –Jagalur - Molakalmur state Highway. The Davangere – Channagiri – Bhadravathi state highway, Davangere – Lokikere MDR. The Davangere –Channagiri –Shimoga state highway, Davangere –Bellary MDR. The two important neighboring district headquarter Bellary and Shimoga connected through a State Highway-25 via Harihar town.

### **1.2 Physiography**

Davangere is located in Tunga-Bhadra basin. The land generally slopes, towards west and north. The north-eastern and the south-eastern part of the city drains towards north through Betur Halla. Where as the western and the south western part of the city drains. Towards west through the natural valley via Kundnawada and Bathi tanks on to Tungabhadra River.

#### **Climate:**

The climate is marked by hot summer months, rain fall , pleasant monsoon , December to February is the cold season with clear bright weather. Summer starts in March and Lasts up to the beginning to June. The South-West monsoon stretches between June to September. The temperature varies between 38.5° and 20.7° .

#### **Rain Fall :**

The average annual rainfall is at Davangere is 639.9 mm.

## **Wind :**

Winds are generally moderate in south –west monsoon. They blow mainly from south western direction. In the rest of the year they are predominantly from directions between north-east and south – east. The wind roses to show the percentage number of days of direction of wind blow to total month during any month of the year and the wind velocities during the different months of the year are appended.

### **1.3 Davangere City : Historical Evolution**

The history of Davangere dates back to the prior of 13<sup>th</sup> century. When it was only a suburb of the village Bethur which formed the capital of a principality ruled by Yadavas of Deogiri (1250-1318) Davangere's mention appears again during the region of Hyder Ali of Mysore. When it was granted as Jagir to a Maratha Chief named Appaji Rao. During this time merchants were encouraged to carry on their business.

The city is an important multifunctional center. It has close links with the other parts of the state and also that of the country. In terms of trade and educational services. The city is linked by a good net work of communication system. With the neighboring districts and also the state capital. The major communication routes being the National Highway No-4 the Davangere –Jagalur – Molakalnur state highway, the Davangere. Channagiri – Shimoga state highway, the Davangere – Channagiri –Bhadravathi state highway, the Davangere - Lokikere MDR. Bellary and Shimoga the two important neighboring district head quarters are connected through a state-highway No.25 via Harihar town.

Davangere city has been one of the two mono-functional towns in the district with industry as its function as per 1971 census. The other being Harihar which is located at a distance of only 15 kms from this city. Apart from the census classification during 1971 the city is more in trade education and service center as could be seen from the present land use pattern.

The district and regional planning unit has identified Davangere in combination with Harihar a growth belt. The urban sprawl can be observed along the various transport corridors. The Poona Bangalore Road, Davangere – Channagiri Road and Davangere –Lokikere Road.

In view of the location of the two urban centers in close proximity and a potential transport corridor connecting the two exists, it is appropriate to plan for the development of these two centers to meet their needs for a planned development. It is also appropriate to plan all the rural centers in the city region in view of their close inter-action with the urban areas.

After re-organization of state and enactment of Karnataka Municipalities Act 1964 Davangere is functioning as City Municipality. The CMC was upgraded to city corporation w.e.f UDD 97 MLR 2006, Dated 6/1/2007 of the city is prepared as per the new wards declared after the city Corporation.

#### **1.4 Master Plan-2021 (Final): Reckoning area for Planning**

The Revised Master Plan for Davangere town is being prepared under section of the Karnataka. Town and country planning act 1961. For this purpose the Comprehensive Development Plan finally approved by the Government is being followed. The Revised Master Plan includes the detailed land use plans, complete circulation Pattern and precisions of various civic amenities, which is in the term of Zonal Development Plan.

For the purpose of working out the Zonal Development Plan the entire conurbation area has been conveniently divided into 8 planning zones or viable planning districts to provide district level community and civic amenities on the basis of the following consideration.

- i) The population to be housed in each district and its extent.
- ii) The city municipal ward boundary
- iii) The size of Zonal Development Plan for the purpose of handling.

Now while reckoning the area for future planning the following factors have been taken into consideration for future requirements.

**Plan Period :-** The plan period is 20 years. Accordingly the Revised Master Plan has been prepared for the year 2021.

**Population Projections :-** Population projections is calculated taking the city and the villages coming within the local planning area for the year 2021. A gross residential density of log persons per hectare is considered to accommodate the projected population of 6.75 Lakhs.

**Trend of Growth :-** Looking into the past two decade developments, almost no development have taken place in the north west and north eastern and south-western part of the town. The trend of development is towards the south-eastern and south-western part of the town.

**Suitability of Land :-** While selecting the land for future urban growth, agriculturally productive lands. Like deep black cotton soils, marshy lands and low lying areas are avoided ,

instead hard and red soil lands have been proposed in view of the cost reduction in developing the land and stability of the buildings.

On the basis of the above consideration and to include the potential areas of development and areas that are very close to the existing conurbation limit the conurbation boundary has been extended and it will be 6229.78 hectares.

The entire conurbation area is divided into eight planning district with ward boundary as the reference for formation of the district boundary.

### Existing landuse distribution and its extent of area is as follows

**Planning District No.1 :-** The planning district and No.1 is bounded by ward No.1,2,9, 10, part 4, part 7, part 11, part 8 The extent of this planning district is 210.69 hectares.

LANDUSE	In Hectares	Percentage
Residential	72.21	34.27
Commercial	1.65	0.78
Industrial	2.12	1.01
Public & Semi Public	8.45	4.01
Park & Open space	16.84	7.99
Public Utility	3.12	1.48
Transportation & communication	88.28	41.90
Vacant Area	16.92	8.03
Water	1.10	0.52
Total	210.69	100.00

**Planning District No.2:-** is bounded by ward 3,5,6,11,12, 13, 14, 15, 16, 17, part 4,part 7,part 21 part 22 & part 8. the extent of this planning district is 178.16 Hectares.

LANDUSE	In Hectares	Percentage
Residential	33.66	18.89
Commercial	1.89	1.06
Industrial	46.25	25.96
Public & Semi Public	4.32	2.42
Park & Open space	9.52	5.34
Public Utility	0.00	0.00
Transportation & communication	46.19	25.93
Vacant Area	36.33	20.39
Water	0.00	0.00
Total	178.16	100.00

**Planning District No.3:-** bounded by ward no.23 and part 15. the extent of this planning district is 276.84 hectares.

LANDUSE	In Hectares	Percentage
Residential	13.26	4.79
Commercial	58.02	20.96
Industrial	29.05	10.49
Public & Semi Public	3.39	1.22
Park & Open space	6.75	2.44
Public Utility	0.65	0.23
Transportation & communication	54.94	19.85
Vacant Area	99.79	36.05
Water	10.99	3.97
Total	276.84	100.00

**Planning District No.4:-** is bounded by ward no. part 30. The extent of this planning district is 387.45 hectares.

LANDUSE	In Hectares	Percentage
Residential	18.93	4.89
Commercial	1.72	0.44
Industrial	8.05	2.08
Public & Semi Public	5.78	1.49
Park & Open space	13.62	3.52
Public Utility	1.32	0.34
Transportation & communication	80.45	20.76
Vacant Area	160.48	41.42
Water	97.10	25.06
Total	387.45	100.00

**Planning District No.5:-** bounded by ward no.18, 19, 20, 25, 26, 27, 28, 29, 31, 32, 33, 34, 37, 38, 39, part 21,part 22, part 24, part 30, part 35, part 36. The extent of this planning district is 1482.69 hectares.

LANDUSE	In Hectares	Percentage
Residential	379.90	25.97
Commercial	53.04	3.63
Industrial	48.46	3.31
Public & Semi Public	156.89	10.73
Park & Open space	79.28	5.42
Public Utility	25.75	1.76
Transportation & communication	360.92	24.68
Vacant Area	329.57	22.53
Water	28.88	1.97
Total	1462.69	100.00

**Planning District No.6:-** is bounded by ward no. part 41, part 35, part 36, The extent of this planning district is 435.85 hectares.

LANDUSE	In Hectares	Percentage
Residential	24.94	5.72
Commercial	1.36	0.32
Industrial	75.24	17.26
Public & Semi Public	29.56	6.78
Park & Open space	14.36	3.29
Public Utility	0.00	0.00
Transportation & communication	96.79	22.21
Vacant Area	192.20	44.10
Water	1.40	0.32
Total	435.85	100

**Planning District No.7:-** is bounded by ward no.part 40, the extent of this planning district is 117.46 hectares.

LANDUSE	In Hectares	Percentage
Residential	16.94	14.42
Commercial	0.32	0.27
Industrial	0.00	0.00
Public & Semi Public	0.63	0.54
Park & Open space	22.61	19.25
Public Utility	0.00	0.00
Transportation & communication	36.49	31.06
Vacant Area	40.48	34.46
Water	0.00	0.00
Total	117.47	100.00

**Planning District No.8:-** is bounded by ward no.part 40, part 41, the extent of this planning district is 59.02 hectares.

LANDUSE	In Hectares	Percentage
Residential	0.08	0.14
Commercial	0.00	0.00
Industrial	0.18	0.31
Public & Semi Public	0.06	0.10
Park & Open space	0.75	1.27
Public Utility	0.00	0.00
Transportation & communication	27.88	47.25
Vacant Area	29.99	50.82
Water	0.07	0.12
Total	59.01	100.00



**Consolidated Existing Landuse -2004:-** Covering the all the planning district the extent of area and its overall landuse distributed as follows.

LANDUSE	In Hectares	Percentage
Residential	559.92	17.90
Commercial	118.00	3.77
Industrial	209.35	6.69
Public & Semi Public	209.08	6.68
Park & Open space	163.73	5.23
Public Utility	30.84	0.99
Transportation & communication	791.94	25.32
Vacant Area	905.76	28.96
Water	139.54	4.46
<b>Total</b>	<b>3128.16</b>	<b>100.00</b>

LANDUSE	District Wise Existing land use and total extent of Area								Total
	1	2	3	4	5	6	7	8	
Residential	72.21	33.66	13.26	18.93	379.90	24.94	16.94	0.08	559.92
Commercial	1.65	1.89	58.02	1.72	53.04	1.36	0.32	0.00	118.00
Industrial	2.12	46.25	29.05	8.05	48.46	75.24	0.00	0.18	209.35
Public & Semi Public	8.45	4.32	3.39	5.78	156.89	29.56	0.63	0.06	209.08
Park & Open space	16.84	9.52	6.75	13.62	79.28	14.36	22.61	0.75	163.73
Public Utility	3.12	0.00	0.65	1.32	25.75	0.00	0.00	0.00	30.84
Transportation & Communication	88.28	46.19	54.94	80.45	360.92	96.79	36.49	27.88	791.94
Vacant	16.92	36.33	99.79	160.48	329.57	192.20	40.48	29.99	905.76
Water	1.10	0.00	10.99	97.10	28.88	1.40	0.00	0.07	139.54
<b>Total area</b>	<b>210.69</b>	<b>178.16</b>	<b>276.84</b>	<b>387.45</b>	<b>1462.69</b>	<b>435.86</b>	<b>117.47</b>	<b>59.01</b>	<b>3128.16</b>

## **CHAPTER - II EXISTING SITUATION**

### **2.1 EXISTING LANDUSE - 2004:**

The present land use surveys were taken up during 2004.

#### **Existing Land Use Pattern 2004:**

LANDUSE	In Hectares	Percentage
Residential	559.92	18.74
Commercial	118.00	3.94
Industrial	209.35	7.01
Public & Semi Public	209.08	7.00
Park & Open space	163.73	5.47
Public Utility	30.84	1.03
Transportation & communication	791.94	26.50
Vacant Area	905.76	30.31
Total	2988.62	100.00
Water	139.54	
Grand Total	3128.16	

It may be seen from the table that an area of about 559.92 hectares is under residential use which accounts for 18.74 percent of the total developed area most of the new residential developments have come up in the south eastern part and south western part of the city.

3.94 percent of the developed area comes under commercial use with an extent of 118.00 hectares. The central business district is located in the old part of Davangere in district No. 5 apart from this there is no other organized market in the city except the road side shops along some important roads like Mandipet road, K.R. Road, Ashoka road, P.B. Road, Chowki Pet Road, Akkamahadevi Road, Dental College Road, Bapuji College Road, Shabnur road, R.M.C. Road. The local body has built an shopping complex to facilitate the wholesale and retail trade in CBD. The city has 50 banking institutions which includes all the branches of national and private banks.

The Agricultural produce marketing committee is functioning very well and it is located in district No 3 The A.P.M.C. is serving to the entire region mainly deals with paddy, cotton, oil seeds and pulses.

The industries occupying an area of 209.35 hectares amount of 7.01 percent of the total Built up area. This area includes all the medium and light industries and service industries. All the medium and light industries are mostly agro-based industries. In the field of industrial activities Davangere was known for its cotton industry. Earlier the city has a number of Ginning factories but some of the major cotton mills are windup due to lack of labors and raw materials. In addition to this, large number of general engineering units and are mostly engaged in manufacture of agricultural implements, components of machines, steel furniture etc., printing and processing units account for more than 80 where as the saw mills account for more than 30 units.

The public and semi- public use covers in planning district 5 & 6, The total developed area which consists of 209.35 hectares. This includes Government offices, Quasi Government institutions, religious and cultural centers. After the formation of the new district, the Government offices are facing acute shortage of accommodation many of the offices are functioning in private rented buildings. The major share of this public area is occupied under UBD Engineering College, Bapuji Association Institutions, G.M. Engineering Institutions. Government High School, Ayurvedic College and various other private educational institutions.

The area coming under parks and playgrounds is only 163.73 hectares accounting only 5.23 percent of the total developed area. Vishweshwarayya Park, Municipal stadium, High School ground, are the major uses under this category. Except Bapuji association institution and G.M.Enginnering Institutions most of the educational institutions do not have their developed play grounds. So far no effort has been taken to develop the park areas provided in the private layouts. Recently effort has been made to involve the private associations in this field to develop the parks.

Recently Karnataka Urban Water Supply and drainage Board has proposed the land for sewerage treatment plant near Basapur. This area is coming under public utility use.

Transport and communication uses comprising an area of 791.94 hectares worksout to 26.50 percent of total developed area recently the KSRTC is having bus-stand by the adjacent to P.B. Road towards Chitradurga.

Nearly 905.76 hectares of land is vacant within the Developed area which works out to 30.31 percent of the total developed area. This area is available for future developments and can be best utilized for residential purpose.

## 2.2 Population and Its Distribution

The population account in the city as per Census 2001 reveals that the city Population is 364523. The growth rate during the previous immediate decade i.e 1991- 2001 is +36.97%.

The variation of population in the city from 1901 to 2001 is as below.;

Census Year	Population	% increase decrease
1901	10402	-----
1911	10074	-3.15
1921	16971	+68.46
1931	23155	+36.44
1941	31759	+37.16
1951	56016	+76.38
1961	78124	+39.46
1971	121110	+55.02
1981	196481	+62.23
1991	266082	+35.42
2001	364528	+36.97

It can be seen from the above table, that in 1951 the growth rate is highest among the remaining decades. During 1941-1951 there is a sudden increase in growth rate which witnessed 76-38%. Then in 1951-61 there is decrease in growth rate, In 1961-1971 ,1971-1981 there is a increase in growth rate. The trend at lower growth rate is 35.42% and 36.97% witnessed during 1901-91 and 1991-2001 respectively. This may be due to the less migration to the city. This shows the growth rate in the city is moderate.

The distribution of population is not even. Parts of old town ie., old areas are having higher densities. Where as new extension like Vidyanagar S.S. Badavane –A and B, block, Shivakumar Swamy Badavane, Sarswathi Nagar extensions contribute a lower density. The reasons that may be assigned are that those areas are newly and recently developed parts of the city and have still vacant sites and the site of the plots are relatively higher with relatively lower floor space index.

**As per 2001 census the ward wise population of Davangere city is as follows.**

Sl. No.	Municipal Wards	Population 2001	Built up area in Hectares	Gross density PP/Hectare
1	1	10948	270.95	40.41
2	2	10493	231.24	45.38
3	3	9422	976.51	9.65
4	4	17429	367.36	47.44
5	5	15977	91.79	174.06
6	6	9640	46.91	418.70
7	7	12017	15.18	791.52
8	8	7153	33.33	215.34
9	9	9169	14.03	653.51
10	10	7607	9.25	822.42
11	11	8318	144.43	126.83
12	12	9900	82.83	119.52
13	13	8666	19.23	45.62
14	14	9388	16.01	584.48
15	15	6743	10.23	659.45
16	16	12601	5.97	2109.45
17	17	9171	18.75	489.11
18	18	11659	17.17	679.01
19	19	14737	63.20	233.18
20	20	6261	25.30	241.46
21	21	10275	378.77	27.13
22	22	7260	16.93	428.17
23	23	9000	24.54	366.75
24	24	16537	39.63	417.26
25	25	9484	508.47	18.65
26	26	10468	1206.50	8.68
27	27	13188	29.78	442.88
28	28	10091	190.40	53.00
29	29	9193	15.13	607.66
30	30	7333	44.61	164.39
31	31	4910	48.13	102.02
32	32	11268	112.40	100.25
33	33	3228	53.05	60.85
34	34	20405	444.71	45.88
35	35	14584	1943.08	7.51
TOTAL		364523	7515.68	Average(48.50)

**Newly created corporation ward wise population (as per 2001)**

<b>Sl. No.</b>	<b>Corporation No</b>	<b>Population 2001</b>	<b>Built up area in Hectares</b>	<b>Gross density PP/Hectare</b>
1	1	11200	448.42	24.98
2	2	11917	258.10	46.17
3	3	12146	25.29	480.24
4	4	10644	70.57	150.83
5	5	11280	12.87	876.48
6	6	11473	13.52	848.77
7	7	11819	43.45	272.02
8	8	11926	93.03	128.20
9	9	10423	44.03	236.70
10	10	10272	26.83	382.92
11	11	10162	18.99	535.17
12	12	10876	16.64	653.77
13	13	9736	21.96	443.43
14	14	8662	445.77	19.43
15	15	10239	44.72	228.97
16	16	9605	77.52	123.90
17	17	11811	19.18	615.68
18	18	9943	54.09	183.83
19	19	10906	20.81	524.13
20	20	10266	15.13	678.41
21	21	8657	61.23	141.38
22	22	9068	123.44	73.46
23	23	9226	979.41	9.42
24	24	8877	73.65	120.53
25	25	10484	33.89	309.33
26	26	10372	10.86	955.38
27	27	10956	17.86	613.42
28	28	9941	70.89	140.23
29	29	8730	63.21	138.11
30	30	8140	1380.52	5.90
31	31	8715	87.49	99.61
32	32	8800	115.20	76.39
33	33	8556	34.89	245.23
34	34	11070	22.75	486.63
35	35	8764	118.27	74.10
36	36	11060	239.21	46.24

37	37	12010	49.65	241.91
38	38	9082	131.26	69.19
39	39	9228	161.25	57.23
40	40	8491	1240.71	6.84
41	41	9287	634.37	14.64
		414820	7420.90	11379.22

As could be observed from the existing population distribution the density of population is very high in ward No 16 (old).

The density of population in ward No 16 is observed to be very high in comparison to other wards. These wards constitute the old parts of Davangere. Hence further development of these areas and to accommodate more population in the years to come is not desirable from planning standards. These areas have to be decongested to have a more reasonable density and better environment conditions for safe and healthy living of people.

Scope for further development of the existing areas is observed to be boundary as parts of these wards of the city have within them pockets of undeveloped land.

The conurbation area of Davangere has been extended further beyond the existing limit to bring into its fold. The development that have come up on the fringes and contiguous to the existing developments. To ease the congestion in the city and to have congenial atmosphere with lower density and to be within the norms.

## 2.3 Housing

As per 2001 census data the total number of occupied residential houses in Davangere city are 104615 houses, with major institutions providing residential facilities under their housing program in the city are given under.

Sl. No.	Name of Organisation/Institution	No. of Location / Colonies	No of Quarters
1.	Karnataka Housing Board Colonies	4	373
2.	Davangere House Building Co-operative Society	1	29
3.	Bapuji Education H.B.C.S	1	145
4.	D.C.M staff colony	1	100
5.	Ravi Vegetable Oil Industries	1	11
6.	Municipal Quarters	1	28
7.	Police Quarters	1	210

8.	Quarters for Fire Force Staff	2	8
9.	Post & Telegraph Staff Quarters	1	9
10.	P.W.D Quarters	1	16
11.	P.H.E Quarters	1	8
12.	. I.T.I Staff Quarters	1	26
13.	Magistrate Quarters	1	2
14.	Medical & Health Dept. quarters	1	43
15.	Engg and Polytechnic staff quarters	1	22

## Trade and Commerce

Davangere city has an Agricultural marketing unit, that is well known for trade and commerce during the last century itself. This unit fulfills the wholesale and retail trade. The whole sale trade mainly deals with cotton, Ground nut, maize, paddy, Jowar, Ragi and cereals. The A.P.M.C occupies an extent of 58.02 Hectares.

In the city wholesale trade is carried out in Mandipet, Binny company Road, N. R Road. The retail trade in Davangere is concentrated around Market area, Chowkipet, Kalikamba Temple Road, Maharajpet, Ashok Road, P.B Road, Akkamahadevi Road. The Municipality has built one market to facilitate the wholesale & retail trade in the city.

It may be seen that the Davangere city has large scope for Development for wholesale trade in this region.

## Industry

In the field of Industrial activity Davangere was known for its Cotton Industry. There were number of ginning factories, Oil mills which produces edible oil. The Karnataka small scale industries Development Corporation has developed an industrial estate in an area of 100 Hectares along Lokikere road in the southern part of Davangere and also developed an area of 54 Hectares along P. B Road in the western part of the town.

Davangere Accounts for a large number of General Engineering units mostly engaged in manufacture of agricultural implements machines, steel furniture etc, there are about 20 saw mills in the city.

At present, major cotton mill which belongs to NTC, is functioning at a distance of 8 Kms from Davangere at Tholahunse village. The other industries like Cattle Feed Manufacturing units,



cement pipe factory, Khadi Gramodyog center with carpentry units. These industries provide employment for more than 1000 workers. Most of the workers reside in Davangere city.

## Traffic and Transportation

The movement of passenger traffic in Davangere region is by rail and road. Poona-Bangalore National Highway contributes substantially to the Movements of Goods transported to various places. The Birur-Molakalmur state highway links the southern part of the District.

The city has good Transportation facilities. The passenger traffic is mainly met by the KSRTC and private buses. These buses provides transportation facilities to other district headquarterslike Bangalore, Mysore, Poona, Hubli, Bellary, Shimoga, Chitradurga, Chickmagalore etc, The General pattern in the center of the city is good and compelled by the radial roads connecting the neighboring villages.

The city traffic is mainly concentrated along Channagiri Road, Jagalur Road, Bada Road, P.B Road, Nittuvally Road, Kondajji Road, Bellary Road.

The private Buses provide city bus facilities in the city. The city has one private bus stand and KSRTC Bus Stand along P.B Road. The Railway station is in the center of the town. There are three sub terminals one at Jagalur Road, one at Channagiri Road and other at Harihar Road. The city does not provide organized parking facilities for vehicles.

The pedestrian movement is more than Vehicular movement in the city. The city mainly depends on Auto-rickshaws, two wheelers, cars, tempos, Lorries, buses, tractors for there transportation to there work centers and business areas.

Considering the volume and character of the traffic, the width and geometries of some of the roads are inefficient to cope up with the present traffic in the city.

## Occupational Pattern, Sex Ratio and Literacy

According to 2001 census 1,24,000 Persons were working in different occupations Accounting for 34.82 % of the population. Out of this, 98945 are male and 25055 are female which Work out to 79.8 % and 20.20% respectively. 2462 Persons are cultivators and 4661 are agricultural labourers, 8544 persons are in household industry and 108333 are other workers.

### Occupational Pattern of workers in Davangere City as per the 2001 census

Occupations	Total	% of total workers
CULTIVATORS	2462	1.97

AGRICULTURAL LABOURERS	4661	3.77
HOUSEHOLD INDUSTRY	8544	6.90
OTHER SERVICES	108333	87.36
TOTAL	124000	100.00

### Sex Ratio

The sex ratio and Literacy as per the 2001 in the Davangere city is shown below table.

<i>Females per 1000 Males</i>	=	939 Females
<i>Total Literates</i>	=	250342
<i>Male Literates</i>	=	138505
<i>Female Literates</i>	=	111837

## 2.4 Community Facilities

### Civic Amenities

#### a) Health :

The city is having a Govt. general hospital named Chigateri General Hospital (CG hospital) with a bed capacity of 1000. In addition to this, ESI hospital is also functioning in the city. In extending the health facilities to the district, Bapuji Association is giving more contribution. The hospitals belong to the association are Bapuji Hospital with 750 bed strength, S.S Institute of Science & Research Centre with a 500 beds capacity, Bapuji Dental College & Hospital. In addition to these association is having an exclusive child care unit named as Bapuji child health Institution and Research centre with a 450 bed capacity headed by a famous well known pediatric specialist (Miss) Dr. Nirmala Kesari. In addition to this ayurvedic college & hospital is also functioning in the city.

The city is also having number of private nursing homes and dispensaries nearly 50 in numbers, with bed strength of more than 20 beds each.

The existing number of beds works out to nearly 10 beds for a population of 1000 persons considering the population of the city only. But the city has to provide these facilities for the surrounding villages and towns are also depending on the city for higher facilities. Hence, the present available health facilities need to be strengthened.

**b) Education :**

The city is known for its well education centre. Private institution/managements contribution is more in giving lower level to higher level education. Because of good facility in giving education, particularly in medical & Engg. field, city attracts the students from all over the Nation and also from other Countries. Brief description regarding availability in each level of education is given below.

**i) Primary**

There are 227 schools providing primary Education for the Children. The schools are run by Govt and by Private Institutions. These schools are also serving the needs of the surrounding villages requirement.

**ii) High school**

The city has 50 Schools, these includes govt. & private institutions.

**iii) Junior colleges**

There are 20 Junior colleges, five run by Govt. and others run by Pvt. Institutions.

**iv) Colleges**

There are 9 colleges in the city. Out of these one is Govt College and 3 Aided colleges and others are Pvt Colleges. Bapuji association runs four colleges. Out of that one Women's college provides education for graduation in Science, Arts and Commerce. There is a P.G centre run by the Kuvempu University. There are three Engineering Colleges out of that one is Govt Engineering College and others two Private. There are two polytechnic and three ITI colleges. There are two Private Medical Colleges and two Dental Colleges run by the Bapuji Association. There is an Ayurvedic College in the city. There are two Law Colleges, two B.Ed College, Five D.Ed Colleges are run by Private managements. There are about ten Nursing Colleges run by Private managements.

**c) Parks and Playgrounds :****i) Parks**

The city is not having sufficient organized parks, even though the area reserved for parks and open spaces available in the developed layouts, The local body is not giving importance to develop & maintain , which are under the ownership of local body.

The city has the following organized parks.

1. VISHVESHWARAI AH PARK
2. KASAL VITTAL SETY PARK
3. DANGE PARK
4. K.R.ROAD PARK

#### ii) Play Ground

There are only few major playgrounds are available in the city. The important play field Which is used by public is Govt. High school Field located in the centre of the city. This play Field is witnessing many functions which are conducting by Dist. Administration as well as from political parties.

Major colleges, like Moti veerappa Junior collage, UBDT Engg. Collage , DRR Polytechnic, JJM medical collage, Taralabalu High School are having their own play fields. In addition to this, city is having a stadium in front of DRM service collage.

### d) Religious Centres

#### i) Temples

The city has temples located almost in every corner of the earlier developments. The Prominent among these are ;

1.	Kalikamba Temple	7	Lingeshwara Temple
2.	Venkateshwara Temple	8	Rama Temple
3.	Durgambika Temple	9	Ayyappa Swamy Temple
4.	Vinayaka Temple	10	Sri Raghavendra Swamy Temple
5.	Banashankari Temple	11	Sri Virabhabreshwara Temple
6.	Anjaneya Temple	12	Sri Shenneshwara Temple

#### ii) Mosques

The major mosques are located in Azad Nagar, Vinoba Nagar, Imam Nagar, P.B Road, KTJ Nagar.

#### iii) Churches

There are two churches in the city. These are located at P-J Extension K.R.Road, and Jayanagar.

**e) Libraries**

There are five public libraries in the city. The libraries are Silver Jubilee library at Pravasi Mandir Road, Devaraj Urs Layout, Iyanahalli compound, Vinoba Nagar and Children Library and there are also mobile library which covers other areas in the city. There are five reading rooms in the city.

**f) Community Centres**

The City Municipality has one Municipal Hall in the Municipal premises. There is also Gurubhavan built by the teachers. There are about 25 Kalyan Mantaps and about six Samudaya Bhavans in the city catering the needs of Marriage halls and other Cultural activities.

**g) Recreation Centres Fine Arts**

The city has a reputation for its contribution in the field of art, music and Drama. The Kala Mandir conducts courses in arts & painting. The city has nine Cinema theatres. There is a Ashram for the blind run by Dr.Panchakshari Gavai which also provides musical training for the blind. There is Vriddhashram near MCC 'B' block.

**h) Utilities and Services****i) Water Supply**

The Davangere city with a population of 3.64 lakhs is at present is getting 80 lakh gallons of water per day, ie.; supplied by the Karnataka Urban Water Supply and Drainage Board. This provides 80 liters per day per person per day. But because of existing improper distribution of water system citizens are not able to get adequate water supplied. Therefore the board has prepared the plan for construction of new overhead tank and renovation of existing distribution system.

**ii) Under Ground Drainage**

The city has fully Underground drainage system. Recently K.U.W.S & D.B has constructed a new treatment plant near Bathi village.

**iii) Electricity**

The city receives electricity from Sharavathi. The receiving Grid is located to the south of Davangere at Channagiri road. There are five sub grid centres in the city.

**iv) Post & Telegraph Office**

The city has one Head Post Office and eleven sub Post Offices and eight Telegraph Offices in different localities. The city has three telephone exchanges with more than 50000 telephone connections. The city has the service of Spice, Airtel, BSNL, Hutch, Reliance, Tata Indicom tele communication facilities. Head Post Office is located in Clock Tower area.

**v) Police Station**

The city has nine Police Stations with one Sub Divisional Police Office and Circle Inspector's Office I.G Office, Superintendent of Police Office has been located in the city.

**f) Fire Station**

The city has fire force unit located at P.B Road.

## **2.5 Problems of the Davangere City**

The city can be conveniently divided into two parts viz.

- 1) Old town developed to the north of the railway line and
- 2) the new extensions on the south of it.

The town extensions are of recent origin, which are the result of expansion of the city due to earlier industrial growth and provision of the educational and health facilities on this side. The Poona – Bangalore National Highway located on the south of the railway line gave a philip to growth on the southern side.

The old town located on the north of the railway line has a very high density of population and is not desirable as per the planning norms. So also are the Bhagat Singh Nagar and the Yellamma Nagar which have come up un-authorized .

To have healthy Climate and environment, the density of population is taken as to be of 125 persons / hectare in general and about 150 persons / hectares in certain cases. The efforts are made to reduce the congestion in the city and thus the densities which are very high are safe and permissible and habitable limits for living.

Also there are many developments that have Come up just adjoining the existing Municipal limits and these new developments lack in all the basic infrastructure like proper roads, drainage etc.

### **Railway Line Barrier**

The railway line which passes in East-West direction, bifercates the whole city into two parts. The link between the old and the town extension across the railway line has been posing problems and has become acute. There are four level crossings and four bridges. Out of the four existing under bridges two bridges which are located in the heart of the city have insufficient headway, thus making it impossible for the trucks to cross the railway line through these passages. They have to depend on the two level crossings and remaining two under bridges.

The level crossings located along Ashoka Road is over utilized and it is highly congested during peak hours. The city station being very close to this spot there will be railway shunting operations often which will hold traffic. In view of the location of two Cinema theatres in the locality the traffic will be jammed at this level crossing during peak hours.

The level crossing along Kondajji Road and the one at R.M.C Yard are not fully utilized. In view of the fact that there is not proper link road passing through the town connecting these two passages the western part of the old town with its narrow roads form a barrier for the link.

The level crossing across the National Highway near the D.C.M Township has been an obstruction during the time of the closure of the gates in view of the heavy traffic on the National Highway the existence of the railway track in embankment and the resultant hump for the road also acts as a deterrent due to lack of sight distance to motor drivers. To solve this problems, the railway authority is under taken the construction of under Bridge at this point .

The deviation of National Highway No.4 near Avargere village is already formed. This will join the N.H.4 near polyfibres avoiding both Davangere and Harihar towns. Thus the through traffic i.e. trucks, cars etc will use this road avoiding the heavy traffic on the existing

**National Highway No.4** Passing through the city, The existing level crossing near Ashoka Talkies which is very near to NH4 in the heart of the city is a major bottleneck for the people and also the vehicular traffic to flow from the old part of the town to the new extensions and vice versa..

To avoid the congestion in this area there is a proposal to have a pedestrian subway near this level crossing for the safe crossing of the people.

Also there is a proposal to have a parallel road running along the existing Railway track through the B.T Oil mills, Kirwadi Oil Mills etc to join the newly constructed under bridge near RMC Yard and Shekarappa Nagar.

### **Slum :**

There are thirty five slums in the city. Some have come up as temporary unauthorized sheds, where as other have become permanent settlements. These have to be tackled with a sympathetic view. Improvement are required in these slums by providing the necessary infrastructure rather than cleaning them. One of the slums has since been cleared recently by the owner of the land by bringing an eviction order from the supreme court. The Government authorities have taken the full responsibility to rehabilitate the affected people and have done a good job in this direction .

The slums declared by the Government and some of the areas in the city which are to Yet to be declared as slums looking at the existing condition are indicated below.

SI No.	LOCATION	Extent (Area in Hectares)
1	Chowdeshwari Nagar	3-34
2	Shiva Nagar	1-21
3	Siddarameshwar Nagar	3-08
4	Carl Marx Nagar	6-20
5	Shekarappa Nagar	5-00
6	Anekonda A K Hatti	2-28
7	Bharati colony	3-30
8	Kabbur Basappa Nagar	3-10
9	Suresh Nagar 3 <sup>rd</sup> phase	6-05
10	Indira Nagar	2-28
11	Beedi layout	14-28
12	Bombo bazaar	2-23
13	Mandakki Batti	4-00
14	R K Hegde Nagar	2-03
15	Mahaveer Nagar	1-10
16	Nittuvalli Korachara halli	7-34
17	H.K.R Nagar	3-26
18	Bethur Road	1-17
19	Suresh Nagar, 1 <sup>st</sup> phase	5-10
20	Suresh Nagar 2 <sup>nd</sup> phase	6-00
21	Indira Nagar, A.K colony	1-11
22	Kadappana Kana	0-27
23	Amarappana thota	3-17
24	Suresh Nagar, 4 <sup>th</sup> phase	7-12
25	Neelamma thota	1-15
26	Vinayaka talkies road	0-10
27	Sriram Nagar	7-24
28	Mysore matt kana	3-32
29	Kondajji road	0-23
30	Shastri Nagar	0-23
31	S.K Lodge area	-
32	Kirwadi Mill	0-16
33	Lenin Nagar	0-23
34	A.K Colony Kundawada	4-38
35	Yaragunte	2-26



The slum declared by Govt. has been improved by the slum clearance Board recently. The Remaining slums existing in the city are lacking in all most all the infrastructure facilities. These slums are proposed to be declared as slum areas by Government and are to be handed over to the slum clearance board for their up gradation and creation of infrastructure facilities.

Some of the important roads have stretches with narrow widths and are acting as bottle necks. They are,

- 1) Davangere-Bellary Road beyond the Jagalur Road Cross in Azad Nagar.
- 2) Jagalur Road in between Indira Nagar & Imam Nagar.
- 3) AneKonda Basapur Road and Road to Bharati Colony.

Lack of linkage among developed parts of the city Some of the localities have come up as isolated pockets and are not effectively linked with the main arteries of the city are;

- 1) Bharati Colony from the RMC road.
- 2) Nittuvally area, labour colony with the Poona Bangalore Road and the Davangere Cotton mills.
- 3) Area behind Industrial Training Institute and the Nittuvally Road. Vidya Nagar.
- 4) Link from the existing NH passing through the city with the combined NH deviation by passing Davangere and Harihar.

Area of inadequate, infrastructure may be identified in parts of the developed city. The following may be mentioned.

- 1) Azad Nagar
- 2) Shivaji Nagar
- 3) Nittuvally

#### **Others :**

A stretch of low lying area along the Betur halla in the east hugging the RMC yard make the proposed outer ring road not feasible. Ribbon development with urban sprawl immediately beyond the conurbation area along the National Highway towards Chitradurga poses problems.

Fragmentation of agricultural lands and arbitrary approval to residential layouts, lack of comprehensive outlook have marked the course of future development in some parts of the city high cost of land and speculation have been the root cause of these problems.

The dual functioning of the administrative institutions in the city viz the city Corporation and the Village Panchayat continuing to administer the development within the LPA limits simultaneously have created problems resulting in the coming up of unauthorized and sub standard layouts in the outskirts with lack of civic amenities.

Corporation boundary is itself not a compact one with area of narrow strips stretching outward or inwards and is posing problems. Confirming developments stuck to municipal limits are not realistic when contagious area just outside the municipal limits are already fast developed and developing. It will be unrealistic to plan density to such an administrative boundary.

The densities of population being very high as already existing and to confirm the future growth also within the Municipal limits. The pressure would be more on land and would have to go vertically to accommodate the future growth and projected population which would be unscientific and unrealistic.

Hence to obviate this situation the conurbation area has been extended so as to encompass the developments that have come up on southern side upto National Highway Bye pass in Shabanur village and little beyond and the areas on the east in Nittuvally and also Avaragere village and Yaragunta on North. This extension of the conurbation taken into principle that the densities should be around 125 persons per hectare to 150 persons per hectare. In rare unavoidable cases it can be high. The schemes notified area proposed to be undertaken by development authority which was hither to outside the conurbation of the approved master plan have been taken in for development. The areas proposed by KIADB are also taken in for expansion.

## **CHAPTER - III MASTER PLAN (REVISION-I)- 2021**

### **4.3 Introduction**

The Master Plan (CDP) for Davangere city was approved by Govt. as per section 22 of the KTCP Act during 1988. The plans prepared were based on the surveys conducted during 2004. The revised master plan is to be prepared keeping in view the proposals made in the CDP. The revised master plan shall consist a series of maps and documents indicating the manner in which the development and improvement of the entire planning area within jurisdiction of the Development Authority is to be carried out and Regulated.

The revised Master plan shall include the following:

- a) A comprehensive zoning of land use for the planning area together with zoning regulations.
- b) Road pattern, indicating the major and minor roads, National & State Highways and traffic circulation pattern for meeting immediate and future requirements.
- c) Areas reserved for parks, playgrounds and other recreational uses, open spaces, Public buildings & institutions and areas reserved for such other purposes as may be expedient for new civic development.
- d) Major road improvements.
- e) Areas for new housing.
- f) New areas earmarked for future development and expansion.
- g) The stage by which the plan is to be carried out .

In this context the studies made hitherto is required to be reviewed to correct any deviation and to assess the existing realities. Following are the major studies made.

- 1) Population Projections.
- 2) Present land use in the Planning area.
- 3) Trend of Development.
- 4) Updating of data on Civic Amenities, Utilities and Services.
- 5) Existing density of Population.

### Review of the Master Plan – 2021 (Revision-I)

The reviews of the provision of the CDP is necessitated in view of the following reasons:

- 1) The approvals recorded to Sub division of land and the realities that are existed after the approval of CDP has to be incorporated.
- 2) The boundaries of Municipal wards have been identified in the CDP.
- 3) To incorporate the changes in land use permitted by Govt. after the approval of CDP.
- 4) To amend the proposals already made in the plan wherever they are not feasible or redundant.
- 5) To review the building by laws and sub division regulations.

## 3.2 Proposed Projection

### 1. Geometric Method

$$P_t = P_o (1+r)^t$$

For 'r' we have

$$\log P_t = \log P_o + t \cdot \log (1+r)$$

$$\log (1+r) = \frac{\log P_o - \log P_t}{t}$$

$$= \frac{\log 364523 - \log 287233}{10}$$

$$= \frac{5.5617 - 5.4582}{10}$$

$$\log(1+r) = 0.01035$$

$$(1+r) = \text{Antilog. } 0.01035$$

$$(1+r) = 1.0241$$

$$r = 0.0241$$

Substituting value of (1+r) in the equation, we have

$$P_{2011} = P_{2001} (1+r)^t$$

$$= 364523 (1.0241)^{10}$$

$$= 462,539$$

$P_{2011} = 462,539$
----------------------

Similarly,

$$P_{2021} = 364523 (1.0241)^{20}$$

$$= \underline{586,911}$$

$P_{2021} = 586,911$
----------------------

## 2. Trend Method

$$y = a.b^x$$

Year	x	y	Log y	Log. xy	x <sup>2</sup>
1981	-1	196481	5.2933	-5.2933	1
1991	0	287233	5.4582	0	0
2001	+1	364523	5.5617	+5.5617	1
Σ	0		16.3182	+0.2684	2

$$Y = n.a + bx$$

$$\text{Log } y = n.\text{log}.a + \text{log}.bx$$

$$16.3132 = 3.\text{log}.a + \text{log}.b \times 0$$

$$\text{log}.a = (16.3132) / 3$$

$$= 5.4377$$

$$a = \text{Antilog. Of } 5.4377$$

$$a = 273989$$

Similarly

$$\Sigma xy = a.\Sigma x + b.\Sigma x^2$$

$$\text{log } xy = \text{log}.a.x + \text{log}.b. x^2$$

$$0.2684 = 0 + \text{log}.b (2)$$

$$\text{log}.b = 0.2684 / 2$$

$$= 0.1342$$

$$b = \text{Antilog of } 0.1342$$

$$b = 1.36207$$

$$\text{from } Y = a.b^x$$

$$P_{2011} = 273989 * 1.362072$$

$$= 508,314$$

$P_{2011} = 508,314$
----------------------

Similarly,

$$P_{2021} = 273989 * 1.362073$$

$$= 692,259$$

$P_{2021} = 692,259$
----------------------

## 3. Percentage of increase Method

$$\begin{aligned} \text{Increase between : 1981-1991} &= 46.18 \\ \text{1991-2001} &= \underline{26.65} \\ &72.83 \end{aligned}$$

Average of above : 36.41 %

$$\begin{aligned} P_{2011} &= 364523 + (36.41/100 * 364523) \\ &= 497,246 \end{aligned}$$

$$\begin{aligned} P_{2021} &= 497,246 + (36.41/100 * 497,246) \\ &= 678,293 \end{aligned}$$

## 4. TCPO Method

$$P_n = P_o (2000 + ng) / (2000 - ng)$$

where  $P_n$  = reqd pop 2011.2021 $P_o$  = base pop 2001

n = no. of years, 10, 20

g = base pop growth rate 26.65

$$\begin{aligned} P_{2011} &= 364523 (2000 + 10*26.65) / (2000 - 10*26.65) \\ &= 476,603 \end{aligned}$$

$P_{2011} = 476,603$
----------------------

Similarly,

$$\begin{aligned} P_{2021} &= 364523 (2000 + 20*26.65) / (2000 - 20*26.65) \\ &= 629,405 \end{aligned}$$

$P_{2021} = 629,405$
----------------------

## Population Projection by different methods

Sl.No.	Methods	2011 AD	2021 AD
1.	Geometrical Method	462,539	586,911
2.	Trend Method	508,314	692,259
3.	Pc.increase Method	497,246	678,293
4.	TCPO Method	476,603	629,405

Based on the projection, population of the city by 2021 AD is expected as 6.25 lakhs. But, taking into consideration of natural growth of the surrounding dependent villages and also immigration due to the new District Headquarters and also in view of the closing of major industry like the “Mysore Kirloskar Co. Ltd” located in Harihar town, the population is likely to be more than the projected. Keeping in view of these aspects the population of Davangere city is expected by 2021 AD is to be 6.75 lakhs.

Accordingly, area required to accommodate the projected population by 2021 AD is calculated as below, by assuming a density of 125 pph and works out to

$$675,000 / 125 = 5400 \text{ hectares.}$$

But while finalizing the conurbation boundary after considering the objections/suggestion on the provisional approved Master Plan and expansion of conurbation boundary on North-West corner based on the request of KIABD , the total conurbation area works out to 6229.78 hectares. Accordingly the actual density works out to.

$$675,000 / 6229.78 = 108.35$$

**say 109 PPH.**

### 3.3 Population Distribution

The population projected for 2021 AD is 6.75 lakhs. This has been arrived at after working through various methods as enunciated in the report.

A study of existing population distribution in various localities indicates the relative small concentration of the population in certain areas. This has lead to unhygienic, unplanned urban sprawl and slum conditions with high densities. These have to be reduced to planning norms to have hygienic environment.

The 6229.78 hectares Area of Davangere for the horizon year 2021 AD is divided into eight planning districts as indicated in the map.

It is observed that the planning district No 5 and 6 are relatively high dense areas as compared to the remaining districts. It is also observed that the distribution for the horizon year has taken care of this unequal distribution.

The additional population in district No 5 and 6 are limited by restricting to a lower density. The district No 5 is mostly residential.

In arriving the distribution of population, Gross density of 109 persons per hectares is considered and fixed the population to accommodate in each district.

### 3.4 Proposed Land Use – 2021

The revised master plan for the city of Davangere is aimed to achieve a balanced and integrated development of the city. The plan envisages a compact growth of the city to bring functional efficiency and spatial relationship minimizing the urban sprawl with various proposals. The plan has to help in improving the quality of life in the city and cause the creation of congenial environment for happy and healthy living.

#### Proposed Land Use Analysis-2021

LANDUSE	In Hectares	Percentage
Residential	2808.02	45.07
Commercial	292.70	4.70
Industrial	643.81	10.33
Public & Semi Public	422.09	6.78
Park & Open space	539.73	8.66
Public Utility	46.10	0.74
Transportation & Communication	1310.41	21.04
Water Sheet	166.91	2.68
<b>Total</b>	<b>6229.78</b>	<b>100.00</b>

**Proposed land-use analysis planning district wise and its overall landuse distribution is as follows;**

LANDUSE	District Wise Proposed Area								
	1	2	3	4	5	6	7	8	total
Residential	325.59	154.43	118.07	570.36	646.47	301.06	458.84	233.19	<b>2808.02</b>
Commercial	4.52	39.80	59.13	64.77	79.82	20.16	19.03	5.47	<b>292.70</b>
Industrial	160.96	135.68	53.25	119.67	45.26	115.25	0.00	13.73	<b>643.81</b>
Public & Semi Public	27.99	20.63	4.92	68.57	160.86	90.77	32.51	15.84	<b>422.09</b>
Park & Open space	27.18	47.84	66.53	133.33	87.79	86.91	49.84	40.31	<b>539.73</b>
Public Utility	5.79	0.01	7.23	1.61	31.46	0.00	0.00	0.00	<b>46.10</b>
Transportation & Communication	45.44	133.33	92.96	212.86	378.89	251.41	123.81	71.34	<b>1310.41</b>
Water	2.00	4.88	13.61	97.84	28.49	15.25	3.26	1.58	<b>166.91</b>
<b>Total</b>	<b>599.47</b>	<b>536.60</b>	<b>415.70</b>	<b>1269.01</b>	<b>1459.04</b>	<b>880.81</b>	<b>687.29</b>	<b>381.86</b>	<b>6229.78</b>



**i) Residential**

The existing Residential area in the developed area of the city was only 559.92 Hectares. The residential density ( Net density ) works out to 579 persons per hectares which is very high. This is proposed for decongestion by assuming fair residential densities so that 2808.02\_ hectares of land including the existing residential area is proposed for residential purpose for future projected population, for the horizon year 2021 AD.

**ii) Commercial**

Davangere city is functioning as an important trade centre in the region. The existing area of 118.00 hectares is under Commercial use. Regulated Market and APMC have proposals for the expansion of existing Market Yard. Commercial use is proposed along NH 4 bye pass and existing NH. The area so designated for commercial purpose is 292.70 hectares including the existing commercial area which is quite sufficient for the projected population by 2021 AD.

**iii) Industrial**

The Ultimate goal of planning is to achieve a better standard of living through optimum utilization of economic resources. Davangere city was primarily an Industrial cum Trade centre. With the closure of many cotton mills like, The Davangere cotton mills Ltd., Siddeshwar mills and oils mills , the city is not having the character of industrial town. Even though , with Anjaneya cotton mill , Ganeshar mill, many rice mills, Engg. Units Saw mills, with KIADB industrial area the existing industrial activities is spreaded over 209.35 hectares, is proportionately extended & reserved for the plan period of 2021AD works out to 643.81 hectare i.e 10.33% to the total conurbation area.

**iv) Public & Semi Public**

Under this Category, land use includes area under Govt and semi Govt offices, Educational, Health, Social & Religious and cultural Institutions.

Considering all the facts of Davangere as a new districts head quarters, an area of 422.09 hectares of land is designated for this purpose, which works out to 6.78 % of the total area including the existing area of 209.08 hectares.

**v) Parks, Play Grounds and Open Space**

The existing area under parks, play grounds and other open spaces is 163.73 hectares which is very small. To overcome this deficiency, an extent of 539.73 hectares of land including existing is earmarked for parks, play grounds, burial ground, buffer along nalas, tanks buffer under H-T line and other open spaces including a city level park which works out to 8.66 % of the total area.

**vi) Public Utilities**

The existing area under public utilities is 30.84 hectares which includes water treatment plant, sewage disposal site, KEB Grid and substations, TV stations. For future requirements an area of 46.10 hectares which is 0.74 % of the total area is earmarked for this use.

**vii) Transport and Communication**

The city has good regional transportation facilities. The passenger traffic is mainly met by KSRTC and Railway. Davangere has a Broad-gauge railway line passing through the city joining Bangalore and Hubli. Road pattern is mainly governed by National Highway No.4 passing through the center of the city. General pattern is Grid Iron coupled by radial roads. To cater the needs of the future population a network of roads is worked out with 12 m, 18 m, 24 m & 30 m. One inner ring road of 30 m width is proposed in the western part of the city joining NH 4 Bye pass and National Highway and passes all around Davangere city. This is to provide for through traffic. Jagalur road and Channagiri road are newly upgraded state highways that pass through the city. As the trend of development is along the NH4 Bye pass a bus terminal is proposed adjacent to 24 mtrs. towards west. Railway station located in the center of the city is the terminal for the railway traffic. KSRTC is having a new bus terminal constructed along old P.B. Road. A truck terminal is proposed in the eastern part of the city along NH. At the intersection of the ring roads with major roads, convenient bus shelters have been proposed. Thus the total area proposed under this category is 1310.41 hectares including the existing area to meet the needs of the future population. City bus service and rural bus service is provided by private transport.

**Proposed Land Use Analysis District Wise - 2021****Planning District No.1**

The Planning district No.1 is located on the north of Bangalore-Hubli Railway line on western part of the city is Proposed to accommodate 59,000 People by horizon Year 2021 AD this district has the total area of 599.47 hectares, This district has ward no. 1,2,9,10 and also has part ward no. 4,7,11, 8 this district consists Yaragune Karur and Dodda Budhihal Village.

An area of 325.59 hectare is earmarked for residential purpose which works out to 54.31% of the total area of the district including Yaragunta, Karur villages Devaraj Urs Layout, STJ Nagar and well covered Ashraya Colonies and Jantha housing layout to accommodate the further population with a fair residential density. About 4.52 hectors of land is earmarked for commercial uses to serve the future commercial activities of the district. About 160.96 hectors of land is earmarked industrial use which works out to 26.85 of the total area of the district. This includes lime Kilns near Yaragunta Village, LPG goodown and same Industrial site facing Koandajji road.

An area of about 27.99 hectares is earmarked for educational and office purpose this works out to 4.67% of the total area of district. Area reserved for park play ground is 27.18 hectares which works out to 4.53% of the total area of the district. An area of 5.79 hectare is earmarked for the Public Utilities which works art to 0.97% of the total area of the district this includes KEB, and sewage disposal plant. Area under transport and Communication. Is 45.44 hectares which work out to 7.59% of the total area of the district.

Water sheet area is 2.00 hectare which works out to 0.33% of the total area of the district. This includes Swimming pool.

Proposed land-use analysis Planning District No. 1

LANDUSE	In Hectares	Percentage
Residential	325.59	54.31
Commercial	4.52	0.75
Industrial	160.96	26.85
Public & Semi Public	27.99	4.67
Park & Open space	27.18	4.53
Public Utility	5.79	0.97
Transportation & Communication	45.55	7.59
Water	2.00	0.33
Total	599.47	100

### Planning District No 2

This Planning district is located to the mouth of P.B.Road (N.H.4) between Bethur Halla. The total extent of the district is 536.60 hectares.

An area of 154.43 hectares is earmarked for residential purpose which works out to 28.78% of the total area of the district. This Planning district consists of part of ward no 4,7,21,22,8 and ward nos 3, 5, 6, 11, 12, 13, 14, 15, 16, 17, Part of the old town is situated in this planning district consists of relatively high density area ie, Gandhinagar. Ajadnagar, Ahmednagar where very high density is seen. Proposals are worked out to reduce the congestion and to have a healthy living conditions as many new layouts in the north viz. Beedi workers layout, Mandakki Batti workers layout. The Mandakki workers layout is now considered as a home industry. The major function of this district is Commercial and industrial. The business activities are located in this district around municipal market, and along mandipet, kaipet Islam pet, Narasaraj pet, Maharajpet, Binny company road and Chowkipet road. Commercial activities are also carried along KR road and RMC link road including N.H-4. Wholesale and retail business are carried in RMC yard. Area earmarked for commercial use is 39.80 hectares which works out to 7.44% of the total area of the district.

Industrial use is another dominant use of this district. Many rice mills are located along Bellary road, Jagalur road and market road. Ginning mills, oil mills, saw mills including Distillery are also situated in this planning district. Mandakki Bhatti layout people have many tiny household industry producing mandakki or poha which is very popular in this region. An area of 135.68 hectares is earmarked for industrial purpose which works out to 25.29% of the total area of the planning district.

Government offices, Schools, Hospitals, Sub jail, temples, Chowltry, C-A sites comprise the public and semipublic use of the district. Area earmarked for this purpose is 20.63 hectares which works out to 3.85% of the total area of the district.

Parks, play grounds, Burial grounds, coconut garden and the Buffer left along side of the Bethur halla comes under the parks, play ground and other open space use. This accounts to 47.84 hectares which works out to 8.92% of the total area of the planning district.

Area under transport and communication works out to 133.33 hectares which is 24.83% of the total area of the district. This includes old Bus stand, Rural Bus stand, Head post office, Telephone exchange, Railway station & Railway yard. Part of Bethur halla comprises the water shut in his planning district which is 4.88 hectares.

### Proposed land-use analysis Planning District No. 2

LANDUSE	In Hectares	Percentage
Residential	154.43	28.78
Commercial	39.80	7.44
Industrial	135.68	25.29
Public & Semi Public	20.63	3.85
Park & Open space	47.84	8.92
Public Utility	0.01	0.00
Transportation & Communication	133.33	24.83
Water	4.88	4.91
Total	536.60	100.00

### Planning District No-3

The planning district no III is located in the North east part of the city to the north of Bangalore - Hubli Railway line. Total extent of the district is 415.70 hectares and is proposed to accommodate about 45000 people by 2021 AD. The district contains existing Regulated market yard and a cattle market, Chandrodaya Textile mill, Ravi vegetable oil mill area and Electric sub station is also located in this district.

An extent of 118.07 hectares of land is earmarked for residential use which works out to 28.40% of the total area of the district. This includes Davangere village pocket and Ashraya scheme layouts and Basavanagowda nagar. ward no 23 and part 15 comes in this district with very low density. Commercial use is one of the predominant use in this district with existing regulated market yard and cattle market yard including the proposals the area earmarked is 59.13 hectares which is 14.22% of the total area of the district .

Industrial use is the other important land use of this district, including the existing Chandrodaya textile mill, Ravi vegetable oil mill area, Rajana halli industries, prakash spun industries. Proposals for future industrial use including existing area earmarked is 53.25 hectares which works out to 12.81% of the total area of the district.

Area earmarked for public and semi public use in this district is 4.92 hectares which is 1.18% of the total area of the district. This include existing offices, Veterinary hospital, school, health centre, village panchayat office and educational association and proposals for Public & semipublic uses.

Area coming under parks, play grounds, Buffer area along side of Bethur halla, and under H.T lines comprises 66.53 hectares which is 16.00% of the total area.

Existing KPTCL sub station and proposal for UGD Treatment plant comes under the category of public utilities which is 7.23 hectares and is 1.74% of the total area.

Area coming under transport and communication use is 92.96 hectares which is 22.38% of the total area of the district.

Bethur halla is taken under the water sheet area which is 13.61hectares and work out to 3.27% of the total area.

Proposed land-use analysis Planning District No. 3

LANDUSE	In Hectares	Percentage
Residential	118.07	28.40
Commercial	59.13	14.22
Industrial	53.25	12.81
Public & Semi Public	4.92	1.18
Park & Open space	66.53	16.00
Public Utility	7.23	1.74
Transportation & Communication	92.96	22.38
Water	13.61	3.27
Total	415.70	100

**Planning District No 4**

Planning district no 4 is situated in the western part of the city between Bangalore –Hubli railway line and National -Highway Bye-pass . This district contains parts of Kundawada village, Bathi village, Karur, Yaragunta and Davangere Kasaba. This include municipal part ward no. 30 and part of ward no 26. Total area of this district is 1242.32 hectares and is proposed to accommodate about 1,36,700 people lay 2021 AD.

Residential is the dominant use of this district which has an area of 570.36 hectares which is 44.95% of the total area of the district. This includes Konduvada village pocket, existing layouts and proposals for future expansion.

Area under commercial use is 64.77 hectares which is 5.10% of the total area of the district. This includes existing commercial area along P.B.Road and proposals earmarked along NH4 bye pass road i.e in front of city level park.

Area earmarked for industrial purpose in this district is 119.67 hectares which is 9.43% of the total area. This includes existing industrial area along P B Road and new proposal of KIADB layout to the north of P B Road and IT/BT proposals in the western part of the district.

Area coming under public and semi public use in this district is 68.57 hectares which is 5.40% of the total area. This includes existing GMIT Engineering college, Temples, schools, Ashram and CA sites reserved in approved layout and future proposals.

Area under parks, play ground ,and open spaces in this district is 133.33 hectares which is 10.51% of the total area. A city level park between Kunduvada Tank and NH 4 Bye pass is the major proposal including buffer zone around this tank, buffer zone below H.T. line and open spaces, park and play ground proposals included in this land use.

Area earmarked for public utilities in this district is 1.61 hectares which is 0.13% of the total area. This includes water treatment plant besides Kunduwada tank and sewage treatment plant in KIADB layout.

Area under transport and communication is 212.86 hectares which is 16.77% of the total area. Kundawada tank is the major water sheet area in this district which is 97.84 hectares i.e 7.71% of the total area. This serves as a main source of drinking water to the city.

## Proposed land-use analysis Planning District No. 4

LANDUSE	In Hectares	Percentage
Residential	570.36	44.95
Commercial	64.77	5.10
Industrial	119.67	9.43
Public & Semi Public	68.57	5.40
Park & Open space	133.33	10.51
Public Utility	1.61	0.13
Transportation & Communication	212.86	16.77
Water	97.84	7.71
Total	1269.01	100

**Planning District No. 5**

It is the important central part of the city bounded by Bangalore Hubli Railway line in the north and N.H.4 bye pass in the south. This district has an total extent of 1459.04 hectares and assumed to accommodate about 160,500 people by 2021 AD. This district houses high density areas like municipal ward no 18,19,20,25, 26, 27, 28 ,29, 31,32, 33, 34, 37, 38, 39, and also part of ward no.21, 22, 24, 30, 35, and 36, This district contains various land uses like commercial, public, semipublic utilities. City levels facilities like hospital, stadium, medical college, engineering college, dental college, MBA, pharmacy, polytechnic, first grade college, arts & craft college, ITI, Law college, factories like Ganeshar textile, Lakshmi flour mill, various Govt. offices, KEB Grid, TV station, Water treatment plant, impounding tank, Vishveshwaraiah park, swimming pool, city level park to the south of Kunduvada tank, APMC, KSRTC new bus stand are also located in this district.

Area for residential use in this district is 646.47 hectares which is 44.31% of the total area of the district. This includes old town area like Nittuvalli KTJ nagar, KB extension and new extension like PJ extension, MCC A block, MCC B block, Vidya nagar, Saraswati nagar, Taralabalu extension and well planned S N Layout. City tends to grow in the south direction of this district.

Area earmarked for commercial use in this district is 79.82 hectares which is 5.47% of the total area. This includes APMC yard and commercial lanes along P.B Road and along Channagiri road.

Area under industrial use covers in this district is 45.26 hectares which is 3.10% of the total area. This includes Ganeshar Textile Mills, Lakshmi Flour mill and many small service industrial units.

Public and semipublic use is the other dominant land use in this district with an area of 160.86 hectares which is 11.02% of the total area. Many colleges like first Grade college, Law college, AVK College, Mothi Veerappa college, DRM College, Arts & crafts College, College of management studies, pharmacy college, JJM medical college, UBDT Engineering college, Bapuji Engineering college, DRR polytechnic, Bapuji polytechnic, ITI College are situated in this district offices of CMC, DDPI, ZP office, AC office, PWD office, CTO office, DUDA, Social forestry office, court complex, CG Hospital, schools, temples, matt, hospitals come under this use.

Area under parks, play grounds & open space comes in this district is 87.79 hectares which is 6.02 % of the total area. This includes city Level Park proposed in the southwest part of this district. Buffer around water Impounding tank in the south and Buffer zone under the H.T lines. Park in front of CG hospital, District level stadium, various playgrounds, Police parade ground, existing Coconut gardens, Municipal high school playground and Burial grounds come under this use.

Area earmarked for public Utilities in this district is 31.46 hectares which is 2.16 % of the total area, KEB, Grids, Main receiving station, O & M station, TV station, Water treatment plant come under this use.

Area of transport and communication in this district is 378.89 hectares which is 25.97 % of the total area of the district. National Highway No.4 in the north and NH 4 bye pass road in the south of the district, Channagiri road, upgraded state highway in the center of the district, New KSRTC bus stand, P & T office are including proposed road cover under this use.

Water impounding tank, which is in 28.49 hectares area, is the major water sheet area in the district, which is 1.95 % of the total area of the district.

#### Proposed land-use analysis Planning District No. 5

LANDUSE	In Hectares	Percentage
Residential	646.47	44.31
Commercial	79.82	5.47
Industrial	45.26	3.10
Public & Semi Public	160.86	11.02
Park & Open space	87.79	6.02
Public Utility	31.46	2.16
Transportation & Communication	378.89	25.97
Water	28.49	1.95
Total	1459.04	100



### Planning District No. 6

Planning district No. 6 is bounded by the Bangalore - Hubli railway line and NH 4 Bye-pass in the north and village boundaries of Pamena halli and Tolhuse in the south. Total area of the district is 880.81 hectares. It is proposed to accommodate about 96,800 people by 2021 AD. This district houses Municipal part ward no. 41, 35, 36, with low density of population.

Area earmarked for residential use in this district is 301.06 hectares which is 34.18 % of the total area. This includes existing Mahatma Buddha, Bheema Nagar and Ashraya scheme( SSM Nagar ) and future proposals.

Area earmarked for commercial use in this district is 20.16 hectares which is 2.29 % of the total area. Future proposals are done along the NH bye pass.

Area earmarked for Industrial use in this district is 115.25 hectares which is 13.08% of the total area. This includes existing KSSIDC layout, existing cotton mill and Rice mills and KSRTC workshop and Depot. Future proposals are made in view of accommodating Industries coming in future. Area earmarked for public and Semi public use in this district is 90.77 hectares which is 10.31 % of the total area. This includes existing Hi-tech hospital and Cancer hospital, Schools and temple and future proposals. Area reserved for parks and playgrounds. buffer zone along nala and the HT line cover under this use, which is 86.91 hectares and is 9.87 % of the total area of the district.

Area earmarked for transport and communication. use in this district is 251.41 hectares which is 28.54 % of the total area of the district. Truck terminal is proposed in the eastern part of the district Existing Davangere Tank and Bhadra Canal come under the water sheet area, which is 15.25 hectares and is 1.73 % of the total area of the district.

Proposed land-use analysis Planning District No. 6

LANDUSE	In Hectares	Percentage
Residential	301.06	34.18
Commercial	20.16	2.29
Industrial	115.25	13.08
Public & Semi Public	90.77	10.31
Park & Open space	86.91	9.87
Public Utility	0.00	0.00
Transportation & Communication	251.41	28.54
Water	15.25	1.73
Total	880.81	100

### Planning District No.7

Planning district No.VII is bounded by NH 4 bye pass in the north and village boundaries of Shabanur and Hale-Kunduvada village in the south. This planning district covers village pockets of Shabanur and Hale – Kunduvada. Residential use is predominant. It houses part of Municipal ward No.40. This has an total area of 687.29Hectares and proposed to accommodate 75,600 people by 2021 AD.

Area earmarked for residential purpose in this district is 458.84 hectares which is 66.76 % of the total area of the district. This includes the J.H Patel layout developed by DUDA, village pockets of Shabanur, Hale-Kundavada and future proposals. Area earmarked for public and semi public use in this district is 32.51hectares hich is 4.73% of the total area.

Area reserved for parks, play grounds, Garden, buffer under HT line came under this use, ich is 49.84 hectares and is 7.25 % of the total area.

Area under Transport and Communication use is 123.81 hectares, which is 18.02% of the total area.

#### Proposed land-use analysis District No. 7

LANDUSE	In Hectares	Percentage
Residential	458.84	66.76
Commercial	19.03	2.77
Industrial	0.00	0.00
Public & Semi Public	32.51	4.73
Park & Open space	49.84	7.25
Public Utility	0.00	0.00
Transportation & Communication	123.81	18.02
Water	3.26	0.47
Total	687.29	100

### Planning District No.8

Planning district No. VIII has an extent of 381.86 hectares and is situated in the southeast part of the city and is bounded by NH 4 bye pass on the north and village boundaries of Pamenahalli and Naganur in the south and houses part of Municipal ward No.40, 41. It is proposed to accommodate about 42,000 people by 2021 AD.

Area earmarked for residential land use in this district is 233.19 hectares, which work out to 61.07 % of the total area. This includes existing residential layouts and future proposals. Area proposed for Commercial land use in this district is 5.47 hectares which is 1.43% of the total area.

Area proposed for Industrial purpose in this district is 13.73 hectares, which is 3.60 % of the total area, is along Lokikere road. Area reserved for public and semi public use in this district is 15.84 hectares which is 4.15 % of the total area. This includes a existing school along Naganur road.

Area reserved for Parks, Playgrounds and open space under the HT line is 40.31 hectares, which is 10.56 % of the total area of the district.

Proposed land-use analysis District No. 8

LANDUSE	In Hectares	Percentage
Residential	233.19	61.07
Commercial	5.47	1.43
Industrial	13.73	3.60
Public & Semi Public	15.84	4.15
Park & Open space	40.31	10.56
Public Utility	0.00	0.00
Transportation & Communication	71.34	18.77
Water	1.58	0.42
Total	381.86	100

### 3.4 Proposed Circulation Pattern - 2021

The provisions made in the approved Master Plan (CDP) have been reviewed, with reference to the existing situation and the feasibility or otherwise of the various provisions.

The proposed Master Plan (Final ) provides the following category of roads.

Category Roads	Road width in meters
1. Residential	9.0 to 12.0
2. District road, Radial road and chord road	18.0
3. Major roads	24.0
4. Outer ring road	36.0
5. Bye pass road	45.0

The following aspects have been taken into consideration formulating the circulation plan for the city.

- i) Regional and city traffic segregation.
- ii) Proper linkages for surrounding areas in the region.
- iii) Provision for higher order roads for intra city traffic.
- iv) Suitability of road pattern for mixed for mixed type of vehicular traffic.

### Outer Ring Road

On the western side of the city, an outer ring road of 36m width is proposed in continuation of partially developed at northern part. This road links NH 4 bye pass with existing NH 4 and Bellary and Jagalur road.

### Link across the Poona bangalore railway line

The circulation pattern of the city will be incomplete, if the crossings across the railway line are not improved. To make existing crossing more efficient, road under bridges in the following cases are proposed.

- 1) Along Poona Bangalore road near DCM mills at the existing level crossings (work under progress).
- 2) Along Ashoka road at the existing level crossing.
- 3) Along Kondajji road at the existing level crossing.

The existing road under bridges are proposed to be improved by increasing the head way.

- 1) The under bridge near the city Railway station.
- 2) The under bridge near Vasantha Talkies.

An over bridge to the railway line is proposed in the Ring Road near DUDA office which completes the circulation pattern of the Ring Road.

Building lines have been proposed for the following roads.

Sl.No.	Road Names	Building line from center of the road. ( In Mtr.)
1	Mandipet Road	7.5
2	Chowkipet Road	7.5
3	Chamarajpet Road	10.5
4	B.T.Galli	6.0
5	Islam Pet	6.0
6	Vijaya Lakshmi Road	7.5
7	Mahatma Gandhi Road	7.5
8	Narasarajpet Road	7.5
9	Binny Company Road	7.5
10	. Akka Mahadevi Road up to State highway	12.0
11	CG Hospital Road up L.F.Mill	13.5
12	Nittuvalli Road	7.5
13	Jagalur Road (Krishna Rajendra Road)	21.0

14	Channagiri Road	21.0
15	Kondajji Road	15.0
16	. Kunduvada Road	15.0
17	Shammnur Road (Laxmi flour Mill to Samudhaya Bhavan)	12.0
18	Ring Road	21.0
19	Poona Bangalore Road	23.0
20	Bye Pass to NH4 (four lane Road) which includes service road	75.0

Recently Jagulur road and channagiri road are upgraded to state highways. Kondajji Road were upgraded to major district roads. Development Authority found that the earlier building line fixed as 23m from center of the road for Shamanur road was not practicable and hence reduced the building line to 12m. As the width of Ring Road is 36m a building line of 75m from the center line of the existing road NH4 proposed for the bye- pass road as per National Highway Authority of India ,New Delhi letter No. DO.NO.NHAI:12025:6:98-P1 DT.10/11/1/2000.

## LAND REQUIREMENT

In order to contain the population of the city by 2021 AD, The following additional area (excluding the existing) has to be developed under various uses.

Sl.No.	Landuse	Area in hectar
1.	Residential	2248.10
2.	Commercial	174.70
3.	Industrial	434.46
4.	Public & Semi public	213.01
5.	Park, Play Ground	376.00
6.	Public Utility	15.26
7.	Transport & Communication	518.47
	Total	

A total of 3903.77 hectares of land have to be developed under various land uses as above. The approximate estimate involved in acquisition of land reserved for public uses as required under section 12(2) of the KTCP Act 1961 is worked out on the basis of prevailing rates (market rate) of land of the area concerned.

The approximate cost of the acquisition of land reserved for public uses,

- i) Area reserved for Public & Semi public use (excluding existing) is 213.01 hectares.
- ii) Area reserved for Parks, Play grounds & other Open Space (excluding existing) is 376.00 hectares.

Assuming an average market rate of about Rs.10 Lakhs per hectare, The total cost of acquisition will be  $1917.8 * 10$  lakhs = 19,178 lakhs. The cost of land development will be  $1917.8 * 2.5$  lakhs per hectare = Rs. 4,794 lakhs. The development of road network (including asphalting) including the ring roads of about 100 Kms. works out to Rs. 3825 Lakhs.

The development of city level park near Kunduvada tank will require huge amount. The acquisition of land and related development activities are to be carried out by various agencies like CMC, KHB etc including the Urban Development authority as part of their schemes.

### 3.5 CITY DEVELOPMENT PROGRAMME

Any city to be developed on a scientific way has to have a development programmed and its execution. The local bodies responsible for the development of the city area

- i) The City Corporation
- ii) The Urban Development Authority
- iii) The Grama Panchayats within the LPA of Davangere-Harihara.

Apart from the above, the other agencies at the State Level responsible for the development of The city and the Karnataka Housing Board, the K.I.A.D.B., the Slum Clearance Board. KIADB. Karnataka housing Board has completed the construction of residential buildings at four locations in the city. It has a scheme proposal along NH 4 bye pass road near Kunduvada village in Planning District 7. Land acquisition process is in progress.

The Development Authority has completed many Schemes like Devraj Urs layout, Sri.Nijalingappa extension, Beedi Workers layout and Mandakki Bhatti layout. Recently it has launched a scheme near Shabanur village namely J.H.Patel Nagar in an area of 63.72 hectares with 1372 plots of different sizes providing UGD, water supply, Electricity.

Apart from above, the UDA has other schemes. Identified already to develop land on the north and north east of the city limits. Outside the Corporation limits, the identified lands are already notified to take up the schemes. Among them, one is TRUCK TERMINALS at the junction of the P.B.Road and the taking off the bye pass near Davangere.

The City Corporation has taken up following schemes within their limits.

1. Bharathi Colony
2. Shekarappa Nagar
3. Gandhi Nagar
4. Suresh Nagar
5. M.C.C. ' A ' Block {Near Church}

The Slum Improvement Board has declared the following eight area as Slums ;

1. Shekarappa Nagar
2. Korachara Hattie
3. Bharathi polony
4. Area near Sri Kallappa Rice Mill
5. Shastri Khana
6. Slum Clearance near Kirwadi factory
7. Slum clearance near A.K.Hatti, Anekonda
8. Slum Clearance near Holehonnur Temple.

Apart from these departmental agencies, a few philanthropic institutions have also program to develop land for purposes of education and quarters. To mention, the Bapuji Educational Institutions, Sri.Tarala Balu Jagadguru Vidhya Peetha have programme to develop by Expanding their institutions and quarters.

The management of the existing industrial units like Davangere Cotton Mills, Chandrodaya Mills, Ravi Oil Mills etc. have also ventured and provided accommodation for their staff and workers. Private developers have developed a new township in the premises of sized Industrial units of DCM mills. KIADB is also developing an industrial area to an extent of 102 acres in Karur village lands adjoining the P.B.Road. KIADB is providing space for Textiles Park for DC office Complex. As specific programming of the various developments is not possible at this stage, in view of the lack of initiative by the various developing agencies, a program of phasing of development is worked out in two phases viz., 2011 and 2021 A.D.

**The area covered in each phase is shown in the map.**

- 1. Area in 1<sup>st</sup> Phase 3419.97 hectares 2011**
  - 2. Area in 2<sup>nd</sup> Phase 2809.81 hectares 2021**
- Total 6229.78 hectares**

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**STATEMENT SHOWING THE PARTICULARS OF SURVEY  
NO'S FOR WHICH CHANGE IN LAND USE HAS BEEN  
ACCORDED BY GOVERNMENT**

# **HARIHAR**

**SCHEDULE – I****List of villages and towns included in the Local Planning Area of Davangere – Harihar**

Sl.No.	Name of Town/Village	To which Taluka it belong	Extent of area included
1.	<i>Davangere</i>	Davangere	Entire CMC area
2.	<i>Bethur</i>	-----do-----	-----do-----
3.	<i>Anekonda</i>	-----do-----	-----do-----
4.	<i>Basapur</i>	-----do-----	-----do-----
5.	<i>Chikkanahalli</i>	-----do-----	-----do-----
6.	<i>Avaragere</i>	-----do-----	-----do-----
7.	<i>Voddanahalli</i>	-----do-----	-----do-----
8.	<i>Honnur</i>	-----do-----	-----do-----
10	<i>H. Kalpanahalli</i>	-----do-----	-----do-----
11.	<i>Tholahunse</i>	-----do-----	-----do-----
12.	<i>Pamenahalli</i>	-----do-----	-----do-----
13.	<i>Siramagondanhalli</i>	-----do-----	-----do-----
14.	<i>Belavanur</i>	-----do-----	-----do-----
15.	<i>Naganur</i>	-----do-----	-----do-----
16.	<i>Nittuvalli</i>	-----do-----	-----do-----
17.	<i>Kundavada</i>	-----do-----	-----do-----
18.	<i>Halebathi</i>	-----do-----	-----do-----
19.	<i>Agasanakatte</i>	-----do-----	-----do-----
20.	<i>Neelanahalli</i>	-----do-----	-----do-----
21.	<i>Doddabathi</i>	-----do-----	-----do-----
22.	<i>Karur</i>	-----do-----	-----do-----
‘3.	<i>Yaragunte</i>	-----do-----	-----do-----
24.	<i>Avaragolla</i>	-----do-----	-----do-----
25.	<i>Busvanahatti</i>	-----do-----	-----do-----
26.	<i>Devarahatti</i>	-----do-----	-----do-----
27.	<i>Chikkabudihal</i>	-----do-----	-----do-----
28.	<i>Doddabudihal</i>	-----do-----	-----do-----
29.	<i>Mittalakatte</i>	-----do-----	-----do-----
30.	<i>Doggalli</i>	Harihar	-----do-----
31.	<i>Guttur</i>	-----do-----	-----do-----
32.	<i>Bakkapura</i>	-----do-----	-----do-----
33.	<i>Harlapura</i>	-----do-----	-----do-----
34.	<i>Amaravati</i>	-----do-----	-----do-----

35.	<i>Sherapura</i>	-----do-----	-----do-----
36.	<i>Harihar Town</i>	-----do-----	Entire Municipal area
37.	<i>Mahajenahalli</i>	-----do-----	-----do-----
38.	<i>Hanagavadi</i>	-----do-----	-----do-----
39.	<i>Harganahalli</i>	-----do-----	-----do-----
40.	<i>Halasabalu</i>	-----do-----	-----do-----

## SCHEDULE – II

Running boundary of the Davangere Harihar Local Planning Area The eastern boundary starting from the North-eastern corner of Bethur village runs further south along the eastern boundary of the Bethur village till it meets with the north-east corner of Basapura village ,turns South along the northern boundary of Avaragere village till it meets the north-eastern corners of Avaragere village turns south and runs along the eastern boundary of Avaragere village till it meets the north-west corners of Voddanahalli shifted village, turns south-east and runs along the northern boundary of Voddanahalli and Honnur village turns south at the north-eastern corners of Honnur village and runs along the eastern boundary of Honnur village up to its south eastern corner-turns west and runs along southern boundary of Honnur village crosses the National Highway No.4 and runs further west along the Southern boundary of Honnur and H.Kalapanahalli village touches the eastern boundary of Tholahunse village turns south and runs along the eastern corners turns west and crosses the Poona Bangalore Railway line and Davangere Bada road and runs further west along the southern boundary of Tholahunse Pamenahalli and Belavanur village crosses the Davangere-Lokikere Road and Davangere Channagiri Road runs further west along the southwest corners of Naganur village, turns along with the western boundary till it meets with south-eastern corners of Mittalakatte village of Harihar taluka, turns west and turns along the southern boundary of Mittalatte village crosses Davangere-Devarabelakere road runs further west till it meets with the southwest corners of Mittalakatte village turns north and runs along the western boundary of Mittalakatte village till it meets with the southern boundary of Kunduwada village, turns north-west and runs along the southwestern boundary of Kunduwada village crosses the Davangere Belludi road and runs further north west along south western boundary of Kundavada and Halebathi village till it meets with the southern top of Agasanakatte village runs south-west and runs along the south eastern boundary of Hanagawadi village,till it touches the eastern boundary of Sulakere halla- turns north-west and runs along the eastern Boundary of Sulekere halla until it meets the south eastern corners of Naragananhalli village, Turns west and runs along southern and western boundary of Haraganhalli village and runs further west till it meets the south west corners of Haraganhalli village and runs further until it meets the north-east corners of Halasabalu village runs along eastern boundary of Tungabhadra river until it touches the south-west corners of Harihar Town, turns north and runs along western boundary of Haralapura and Guttu village until it reaches northern-eastern boundary of Guttur village further crosses Harapanahalli road runs along north-eastern boundary of Guttur village reaches north eastern corner of Bakkapura village and turns south and runs along eastern boundary of Bakkapura village

until it reaches north eastern corner of Amaravati village runs south along north east corner of Amaravathi village and touches the north western corner of Doggalli Village turn east and runs along with the northern boundary of Doggalli village and reaches north-west corner of Avaragolla village turns north east runs along northern boundary of Avaragolla village crosses Davangere Kondajji Road and runs further east and runs along northern boundary of Avaragolla Basavanahatti and Devarahatti village crosses Davangere-Harapanahalli Road and runs further east along the northern boundary of Devarahatti and Bethur village till it meets with the north eastern corners of Bethur village, the Starting point

## **CHAPTER - I**

### **Introduction**

Harihar is second bigger town after Davangere in the district. Harihar has been identified as an Industrial Town. It is situated on the right bank of river Tunga-Bhadra and is about 277 Kms. From the State Capital Bangalore and 15 Kms. From the District Head-quarters Davangere. The town is well connected by Poona -Bangalore National Highway No. 4 and Shimoga-Bellary state Highway No. 25. Broadgauge Railway line Connecting Bangalore Hubli passes through Harihar town. Harihar is a taluk Headquarters and has got a CMC as local body.

Harihar is situated on Tunga-Bhadra basin and can be located on 14° – 30' North Latitude and 75°-45' East Longitude. The land generally slopes towards West and North. Harihar is located at a height of 1788 feet or 545.12 meters above M.S.L. Climate is moderate. Even in the months of hottest summer, the temperature varies between 36 C to 38 C. The extreme Maximum and minimum are 38.5°C and 20.7°C respectively.

The average annual rainfall is 639.9 mm The precipitation of rain is mostly due to South-West monsoon. The maximum rainfall is recorded during the month of September. December to February is the cold season with clear bright weather. Summer starts in March and lasts upto the beginning of June. The South-West Monsoon stretches between June and September.

Winds are generally moderate. In South-West monsoon they blow mainly from South Western and Western directions in the rest of the year, they are predominantly from eastern directions. The wind roses shows the percentage number of days of directions of wind blow to total months-during any month of the year and the wind volunaries during the different months of the year are appended.

Relative humidity is high during the month of July and August. In the rest of the year particularly in summer months, the relative humidity are low and come down to less than 30% in the afternoon. During the period from June to October, sky is generally heavily clouded to over cast. In rest of the year the sky is clear and rarely clouded.

Harihar is also called 'GUHARANYA KSHETRA' and described as behind under a Gaint Guhasura Hari and Hara combined to take incarnation of "Harihar" to destroy Guhasura. There is a famous ancient temple on the banks of Tunga Bhadra of 'Hari Hareshwara' built in Hoysala style in 1223 A.D. by Polalve minister of Hoysala King. Narasimha II, under chalukyan rule, it was an Agrahara in the Nolambavadi premier. There are inscriptions recording the benefactors made to

the temple by Hoysalas, Yadavas and Vijayanagar Kings. It was ruled by Tarikere chiefs, rulers of Keladi and lastly by rulers of Mysore. In 1868 a bridge across Tungabhadra river was built which is used till now.

There is a 'Samartha Narayana Ashrama' of the holy tradition of Samartha Ramdas here. There is a temple of Sri Rama, Dattatreya and Eshwara. Temples of Pratapa Maruthi, Dasa Maruthi and Kamadhenu. Town has become important because of Industrial development made here, even before independence, during the rule of Mysore Maharaja.

## CHAPTER - II

### Demographic Studies

The study of population Growth of Harihar has shown that the population which was 5,783 in 1901 has increased to 87,744 in 2001. It is found that the town has recorded a fall in its population from 5,783 in 1901 to 5408 in 1911. It is noticed that during the decade 1941 to 1951 a sudden raise of population is due to the establishment of Mysore Kirloskar Ltd. During 1971 and 1981 also increase in population is recorded which is due to establishment of Polyfibre industry.

The population figures during the various census years and the corresponding percentages of Increase / Decrease in population during each decades are as given below :

Sl No.	Census year	Population	Increase	Decrease	Percentage
1	1901	5,783	-	-	-
2	1911	5,408	-	375	-6.48%
3	1921	5,904	496	-	+9.17%
4	1931	6,884	980	-	+16.60%
5	1941	8,422	1,538	-	+22.34%
6	1951	15,920	7,498	-	+89.03%
7	1961	22,289	6,909	-	+43.40%
8	1971	33,888	11,054	-	+48.44%
9	1981	52,325	18,437	-	+54.40%
10	1991	66,647	14,322	-	+27.37%
11	2001	87,744	21,097	-	+31.65%

Harihar has recorded a population of 87,744 during 2001 and by population size belongs to Class II.

**A conurbation area is proposed to locate the projected population of 1,50,000 in 2021 AD with a Density of 100 to 125 persons per hectare.**



## Occupational Pattern, Sex Ratio And Literacy

According to 2001 census 30603 persons were working in different occupations accounting for 34.87% of the population out of this 23,559 are Male and 7044 are Female. Which works out to 76.98% and 23.02% respectively. 619 persons are cultivators and 1064 are agricultural Labour s 2898 workers are in household Industry and 22,653 are other workers. The occupational pattern of the workers in the city is shown as below :

### Occupational Pattern of Workers in Harihar City 2001

Occupation	Total	% of Total Workers
Cultivation	619	2.02
Agricultural Labour	1064	3.48
Household Industry	2898	9.46
Other Workers	22653	74.02
Marginal Workers	3369	11.02
Total	30603	100%

### Sex Ratio :

The figures of Sex ratio and literacy in 2001 of Harihar town are shown as below :  
Year 2001 – 950 Females per 1000 Males

Harihar Town literacy as per the 2001 is a following ;

Male	Female	Total	
34,086	28318	62404	
38.84	32.28	71.12	% of Total Population

## **CHAPTER - III**

### **Economic Base And Its Regional Importance**

The present Economic base of the town is Industrial and this can be seen from the occupational structure that major part of the total workers are working in the manufacturing Industries. To retain the economic base of the town as an industrial one. New Industries have to come up or the existing Industries have to be expanded so that more and more employment opportunities are given to the people for the plan period 2021.

The Kirloskar Industry has been closed which was a major economic base of Harihar town. Harihar poly fibres on western bank of Tungabhadra river in Haveri district is another major Industry. There are also some small light industries like Saw Mills, Rice Mills in addition to some household industries. There are many ancillary industries to supplement the requirements of major industries. They are grouped in the Industrial Estate along Hospet road opposite to Mysore Kirloskar Ltd. They manufacture Sheet Metal Parts, Chain Pulley Blocks, Manhole Covers, Pipe Joints, Castings for Flour Mills, Ball Bearings, Faver for Machine Tools etc.

Harihar polyfibres started in the year 1972 on the western bank of Tungabhadra river in Haveri district. They manufacture Rayon gradi pulp and Viscose fibre. About 3400 workers are working in the plant they have been provided all facilities like School, Canteen, First aid and Medical Centre etc.

Ramco Industries located in the Karur Village in Ranebennur Taluk, Haveri District. Bhadra Sugar factory located near Dodda Bathi Village about 6 K.M. from Harihar town. It is a co-operative based factory producing sugar from the Sugar Cane grown in the Bhadra right bank Canal area.

The existing major industries are proposed to the retain industrial growth in the proposed plan. It is difficult to forecast or predict the type of Industries that may come up in future. As such the area required for Industrial purpose has been estimated and the same has been show in the proposed plan.

Harihar being mainly an Industrial town has not shown much development in the field of Trade and Commerce. The activities in trade and commerce are limited to meet the requirements of the population of Harihar town and near by Villages.

Factors responsible for the non flourishing of Harihar town in trade and commercial

activity are that (1) the commercial activities are concentrated in Davangere which is near by (2) The existing major Industries do not depend on local marketing activity because the rare materials are being brought directly from outside and the products produced in the major industries are being exported directly from factories to other areas and not brought to the local market for wholesale business.

Retail business is being carried out in the shops that are developed on either side of Shimoga - Bellary road, Poona-Bangalore road and Harihareshwara temple road, parking in these areas are not planned resulting in obstruction to smooth traffic flow. In addition weekly shopping on every Tuesday being held on along Bellary - Shimoga road on Southern part of the town, where people from surrounding villages assemble in order to sell or exchange their goods.

Wholesale business of Agricultural products is being carried out in the existing APMC premises along Shimoga road. The main products that are being transacted are paddy, Groundnut and Ragi etc.

## **CHAPTER - IV**

### **Housing**

Harihar town has both open and a compact type of housing developments. The open type of development i.e. houses with separate compounds and having small open space for gardening purposes are seen in new extensions.

The town can be conveniently divided into two parts viz. (1) Old town located to the west of Shimoga-Bellary road (2) The town extensions on the east of Shimoga-Bellary road.

In the old Town area the developments are of compact type. Most of the houses do not have separate compounds. The structures are close to each other. Slum areas are existing. The problem of housing has become very acute due to the development and expansion of major industries people have migrated from other neighboring districts seeking employment in these industries. Due to this fact population has increased considerably resulting in increase in demand for housing. But the house building activities have not kept in demand. The existing industries have provided residential accommodation for their staff, reducing considerably the housing problem.

As per 2001 census, there are about 16,742 households in Harihar town and only 15,449 dwellings. The local building materials that are commonly used are burnt bricks, Concrete, tiles, bamboo and wood. In addition following institutions have provided residential accommodations. Karnataka Housing Board : Has developed a colony along Bellary road. It provides 100 EWS and 50 MIG housing. Municipal Quarters : Are located near water treatment plant on the right bank of Tunga Bhadra to accommodate staff of Municipality. 6 quarters are there. Police Quarters : Police quarters are located beyond railway guest house in Harlapur. 38 quarters are there. PWD quarters : There are II PWD and 15 Irrigation department quarters along Shimoga road. KEB quarters : KEB provides 23 quarters for its staff. Railway staff quarters : As Harihar is a railway junction, Southern railways provide 142 residential quarters and a rest house for English drivers. NES staff quarters : It provides 18 quarters located along Bellary road adjacent to railway station. In addition. The employees of Mysore Kirloskar and the Harihar polyfibres have formed registered Housing Co-operative societies in providing housing accommodation

## **Chapter V**

### **Infrastructure**

#### **(a) Social :**

##### **Education :**

Education is very much essential in the growth of Society and in turn growth of the Town. In Harihar town there are 46 primary/secondary schools and 8 high schools run by Government and private Institution Shree Shanta Vageesh Panditaradhya Institution runs a junior college. First grade Degree College and a B.Ed. College in the town. There are no Engineering or Medical college in the town. Davangere which is near by provides facility for higher education.

##### **Health :**

Harihar town has two Government hospitals, one with 50 beds and in old area another with 25 beds. In addition to the above facilities there are two private Nursing homes run by qualified doctors and many clinics to serve the necessities of the town people and near by villagers.

The existing numbers of beds is not sufficient considering the population of the town and the surrounding villages the bed strength in Government hospitals is required to be enhanced.

##### **Recreation :**

Harihar town is not well equipped in out door recreational facilities. There are some packs and Play Grounds which are being maintained by town Municipality.

Park in Front of CMC,

Park in Rajaram Colony.

Park in Kirloskar Factory.

Municipal park in Harlapur.

Park in the premises of Taluka Development Board office.

Park in polyfiber factory colony.

### **Play Grounds In The Harihar Town Are :**

MKT play ground along Hospital road Play ground in front of Govt. High School in the Extension area along Shimoga road. Regarding religious buildings, there are 23 Hindu Temples, 3 Mosques and One Church. Four permanent Cinema Theatres and One Temporary Cinema Theatre are serving the public.

Recreational facilities are very less in the old town are and it is badly in need of swimming pools, picnic spots etc. In view of the above facts, sufficient area are ear marked for parks and play grounds in the proposal map.

There are three cemeteries or burial grounds in the town limits. One for Hindus and One for Muslims. Both are located along Harihar Hanagawadi road on the bank of the river Tungabhadra. Another Burial ground belonging to Christians is located adjacent to Mysore Kirloskar Ltd. Along Hospet road.

One public library is functioning in the Town. Twelve community centers, Eleven Kalyan Mantapas are there in the town. Three social clubs, One Rotary, Lion and Jaycee clubs are doing the Social Service.

Three Post Office branches, Two Police Stations and One Fire fighting Stations are functioning in the town.

### **(b) Economic Infrastructure :**

#### **Markets :**

Harihar being mainly an Industrial town, has not shown much developments in the field of Trade and Commerce. The activities in Trade and Commerce are limited to meet the requirements of the population of Harihar town and nearby villages. As the commercial activity is concentrated in Davangere city which is nearby and the existing Major Industries do not depend on local marketing activity and their products are not brought to local markets.

Due to above reasons, Retail business is carried out in the shops that are developed on either side of Shimoga-Bellary road, Poona-Bangalore road and Harihareshwara Temple road. As there is no planned parking in these areas, there is traffic movement problem. Every Tuesday

weekly shopping in being held on along Bellany-Shimoga road on the southern part of the Town, where people from nearby villages assemble in order to sell and buy necessary goods.

The wholesale business of Agricultural produces is being carried out in the existing APMC premises along Shimoga road. Main products that are being traded here are paddy, Ground Nut, Ragi etc. Irrigation facilities from Bhadra, Right Bank canal add flourishing business of agricultural products.

### **Industrial Area :**

Harihar polyfibres on western bank of Tungabhadra river in Haveri district is the major industry contributing for the Growth of Harihar town. Mysore Kirloskar Ltd. Which was another major Industry is now closed. Apart from these, there are some small/light industries like saw mills, rice mills, in addition to some household industries.

There are many ancillary industries to supplement the requirement of major industries. They are grouped in the Industrial Estate along Hospet road, opposite to Mysore Kirloskar Ltd. They are manufacturing Sheet Metal parts, Chain Pulley Blocks, Manhole covers, Pipe Joints, Castings for flour mills, Ball Bearings, Machine tools ect.

Harihar poly fibers started in the year 1972 on the western bank of Tunga Bhadra river in Haveri district, manufactures Rayon grade pulps and Viscose fiber. About 3400 workers are working in the plant. They are provided with residential accommodation, other facilities like School, Canteen and Medical facilities etc.

Ramco Industries located at Karur village (Ranebennur Taluka) started in 1974, 10 Kms away from Harihar, About 200 workers work in the plant. They are also provided with many facilities. Bhadra Sugar Factory located near Dodda Bathi village about 6 K.M. from Harihar town is a Co-operative based industry started in 1970.

Present economic base of the town is Industrial and this can be seen from the occupational Structure. To retain the economic base of the town as an industrial one, new industries have to come up or the existing industries have to be expanded. So that more and more employment opportunities are given to the people for the plan period 2021. It is difficult to forecast or predict the type of industries that may come up in future. As such the area required for Industrial purpose has been estimated and the same has been shown in the proposed plan.

**Power :**

Electricity is supplied through KPTCL by BESCOM. Power is mainly consumed by Harihar poly fibers and Industries in KIADB, other small scale industries are also using the power significantly. Town is having a direct line from Munirabad and has a separate substation for proper distribution. Total electrical supply to the town is 4.60 MW. Total consumption is 3.89 MKWH.

Harihar town is well connected by a Poona-Bangalore National Highway No. 4 and Shimoga-Bellary state Highway No. 25. A broad gauge railways line connecting Bangalore-Hubli passes through Harihar town. Harihar serves as a railway Junction. Nearest airport is in Hubli about 140 KMs away. Nearest Sea Port is Karwar which is about 225 KMs. Away.

**(c) Urban Infrastructure :**

It is very essential to provide utilities such as protected water supply, Drainage, Power and Communication to the inhabitants residing in the town, so as to have healthy development of Town. Water supply to Harihar is from river Tungabhadra. At present the capacity of water supply is 12.32 MLD. This has to be increased to meet out the future demand as the perennial river Tunga Bhadra is flowing by the side of the town. There are five over head tanks in different localities. In the areas not covered by Municipal water supply, Bore wells are sources of water supply. Some parts of the town has UGD. In remaining areas buildings have separate sump pits. About 20 tones of garbage is generated daily in the town which is carried in tractors and disposed off by dumping in far off place.



## **CHAPTER - VI**

### **Traffic And Transportation**

The existing circulation pattern of the town specially in old town area, i.e., on South-West part shows that streets are laid out without giving due consideration to the planning. The roads are irregular and not properly maintained.

Bangalore-Poona National Highway No. 4 is the only major road running in the middle of the town. Shimoga-Bellary road is another important road running along North-South of the town. National Highway No. 4 is an important road of Harihar Town. Many commercial units and important buildings like Telephone Exchange, PWD, Taluk Offices, Hospital, Municipal Office, Bus-Stand, Railway Station are situated besides this road. So there is heavy traffics on this road.

A Bye-pass to the National Highway No. 4 passes about 1.4 K.M. away from the town on the Southern side of the town. This will release some traffic congestion on the PB Road.

A Broad Gauge railway line connecting Bangalore-Hubli passes through Harihar town which serves as a railway junction. This railway line contributes a major share in passenger and goods transportation. Two level crossings to the NH4 pose problem to vehicular traffic as the vehicles are lined up near level crossing during Shunting Operations.

Some of the existing road junctions are not suitable to meet the rapidly changing needs of motor and other vehicles traffic. Existing roads do not cater to the desirable standard. Specially the roads in the old town are required to be widened. Considering all the facts, the proposed circulation system worked out and is shown in the map.

## CHAPTER - VII

### Existing Land Use

Present land Use surveys were taken up during 2004. Survey was conducted by using the computerized base Maps prepared with reference to the city Survey office and land records department.

#### Existing Land Use Pattern – 2004

Land Use Category	Area in Hectares	Percentage
Residential	126.88	18.68
Commercial	43.68	6.29
Industrial	131.05	18.88
Public & Semipublic	28.84	4.36
Parks, Play grounds and Open space	43.53	6.47
Public Utilities	6.49	0.01
Transport & Communication	224.03	32.33
Vacant	89.39	12.98
<b>Total</b>	<b>693.89</b>	<b>100.00</b>
Water Sheet	8.67	
<b>Grand Total</b>	<b>702.56</b>	

It may be seen from the table that area of about 126.88 hectares is under residential use. Which accounts for 18.68% of the total developed area. Most of the new residential developments have come up in the southern part and eastern part of the city. 6.29% of the developed area comes under commercial use with an extent of 43.68 hectares central business district is located in the old part of Harihar in planning district no 2,3 & 4 small commercial establishments and petty shops are found all along P. B. Road Shimoga-Bellary road and along temple road APMC market is situated along Shimoga road.

Major industry namely Mysore Kirloskar Ltd is now closed. Industrial estate developed by KIADB and remaining existing Light Industries like saw mills, rice mills and other service industries in town occupy about 131.05 Hectares which is about 18.88% of the total developed area this shows Harihar is still a industrial town.

Area under public and semi public use is 28.84 hectares which is about 4.36% of the total developed area This includes. various Govt. offices, hospitals, places of worship and buildings for public and semipublic use and educational institutions.

Area under parks and play grounds and open spaces is 43.53 hectares which is 6.47% of the total developed area there (3) parks are developed and maintained one in Kirloskar factory, one in front of Town Municipal Council and another one at Rajaram colony most of the educational institutions are not having play grounds and in the case of those having they are in adequate.

Area coming under Public utilities include KPTCL service station, Telephone Exchange, post telegraph Telecom, Microwave station, water treatment plant etc this area amounts to 6.49 hectares which is 0.01% of the total-developed area.

Transportation and communication has occupied an area of 224.03 hectares which is 32.33% of the total developed area. Most of the existing roads are narrow. To cope up with the present day traffic These roads have to be widened. P. B. Road and Shimoga, Bellary roads also need to be widened in the town limits. Railway Station and Bus stand are situated in the eastern part in planning district no. 2. of the town. Harihar railway station which is a junction needs expansion to cater the needs of the growing traffic. Vacant land within the developed area boundary is 89.39 hectares which is 12.98% of the developed area and is reserved for various purpose in the master plan. For the purpose of proper planning of the Harihar town, the area is divided into three planning districts.

### **District Wise Existing Land Use Analysis Is As Follows :**

#### **Planning District No. I :**

This P.D. consists some part of Harihar and Harlapur and Guttur Villages this district is bounded by Lashka road in east Tungabhadra river in west, Railway line and Planning District No.2 in south and houses municipal ward no. 1, 2 and part of wards no 3 & 4.

This planning district houses, Mysore Kirloskar Ltd premises which is now closed. KIADB Area, Industrial Estate and new residential extensions and educational institutions.

The Existing Land use analysis is as follows :

LANDUSE	In Hectares	Percentage
Residential	32.43	12.18
Commercial	0.03	0.01
Industrial	85.37	32.07
Public & Semi Public	1.17	0.43
Park & Open space	23.06	8.66
Public Utility	0.00	0.00
Transportation & communication	79.66	29.93
Vacant Area	44.32	16.65
Water Sheet	0.09	0.03
Grand Total	266.14	100

### Planning District No. II :

This planning district covers some part of Harihar, Mahajena Halli and Amaraarathi Villages and houses municipal ward Nos', 3, 4 and partly, 7, 9, 10, 11, 18 ,22, 23, 24, & 25 KSRTC Bus stand, Railway station along P. B. road, Telephone exchange, KPTCL station Court, ESI Hospital Ashraya layout in Amaraavathi village and old part of the town are in this district. Land use analysis of planning district no II is as follows :

The Land use analysis is as follows :

LANDUSE	In Hectares	Percentage
Residential	32.38	25.10
Commercial	7.40	5.74
Industrial	3.10	2.40
Public & Semi Public	5.26	4.08
Park & Open space	5.30	4.11
Public Utility	1.56	1.20
Transportation & communication	55.09	42.70
Vacant Area	17.13	13.27
Water Sheet	1.78	1.37
Grand Total	129.00	100

### Planning District No. III :

This planning district is bounded by serapura, Agasana Ratti Village boundaris in the east Tunga Bhadra river in west NH 4 Bye pass in South and Railway line in North. This planning district covers same part of Harihar Mahajinahalli and same R. S. Nos of Belludi Village and houses municipal ward nos 5, 6, 8, 12, 13, 14, 15, 16, 17, 18 partly 19, 20, 21, 22 part, 24 part, 25part, 26, 27, 28, 29, 30 and 31.

This planning district houses old part of the town and new residential developments have along Shimoga road and retail shops along important roads and APMC market is situated along Shimoga road. St. Marys Church, Harihareshwar temple, PWD office, Taluk Office, water works, Ganeral hospital Govt Highschool are situated in this planning district. Some light industries like, Saw mills and rice mills along Shimoga road are situated in this planning district. This district houses a Muslim burial Ground and a burning yard.

The Land use analysis of the Planning District III is as follows :

LANDUSE	In Hectares	Percentage
Residential	62.07	20.19
Commercial	36.25	11.79
Industrial	42.58	13.85
Public & Semi Public	22.38	7.28
Park & Open space	15.17	4.93
Public Utility	4.93	1.60
Transportation & communication	89.28	29.04
Vacant Area	27.94	9.09
Water Sheet	6.80	2.21
Grand Total	307.42	100

This planning district houses, Mysore Kirloskar Ltd premises which is have closed. KIADB Area, Industrial Estate and new residential extensions and educational institutions. The Land use analysis is as follows :

## CHAPTER - VIII

### Problems And Potentials :

Following problems are observed in Harihar town.

#### Slums :

Establishment of industries have caused shortage of houses. Due to imigration of people to the town slums are created lacking basic facilities.

Following are the slums declared by the Government.

Sl.No.	Area	Owned by	Area In Hectares	Population
1	Slum behind Bharat Oil Mills	TMC	3.75	997
2	Slum in Harlapur Extension	TMC	0.04	1095
3	Slum in Church road	Private	0.32	1302
4	Slum Near water Tank	Private	0.87	1858
5	Slum Near Tahsildars old quarters	TMC	0.05	306
6	Slum near Gurusiddappas Hostel	TMC	0.15	459
7	Slum near Benki Nagar	TMC	0.16	2141

Slum clearance board has done improvement works in these areas by providing necessary amenities.

**Railway Crossings :** There are two level crossings on N. H. 4 Distances between the level crossings is about 2.5 km which causes traffic congestion when the gates are closed. A proposal has been made in master plan by proposing road parallel to the time connecting these two points which will relieve the congestion.

**Low lying area :** The low lying area noticed in between the bridge on N. H. 4 And the famous Harihareshwara Temple on the eastern bank of the river Tunga Bhadra is on the western side of the Town. This area is at the times of floods during rainy season. Hence this area is proposed to the kept open is green butter in the Master Plan. Inadequate

**Infra Structure areas :** In the Old Town areas, there is lack of Public amenities due to high density. Earlier the development in these areas was not planned. To rectify this to some extent, civic amenities have been proposed in nearby areas.

**Missing Link :** The Benkipura extension, Rajaram Colony are not having direct access to National highway no. 4, Hence this can be rectified by providing a missing link in between N. H. 4 and the Rajaram Colony as shown in problem map.

## **CHAPTER - IX**

### **Strategy For Future Development And Conceptual Plan And Priorities:**

Out line development plan for Harihar town was approved by Government in its notification No. HUD:318:TTP:89 dated 11-02-91. The plans prepared were based on the surveys conducted during 1988. Master plan (Revised 1) is to be prepared, keeping in view, the proposals made in the CDP and it shall consist a series of maps and documents indicating the manner in which the development and improvement of the entire planning area within the jurisdiction of the development Authority is to be carried out and regulated.

### **The Revised Master Plan Shall Include The Following :**

A comprehensive zoning of Land use for the planning area together with zoning Regulations. Road pattern indicating the major and minor roads. National and State Highway and traffic circulation pattern for meeting immediate and future requirements. Area reserved for parks, play grounds and other recreational uses, open spaces, public buildings and institutions and areas reserved for such other purposes as may be expedient for new civic development. Major road improvements. Areas for new housing. New areas earmarked for future developed and expansion. The stage by which the plan is to be carried out.

### **The Review Of The Provision Of The ODP Is Necessitated In View Of The Following Reasons.**

The Approvals accorded to subdivision of land and the realities that are existed after the approval of ODP have to be incorporated. The boundaries of municipal wards have been identified in the Master plan. To incorporate the changes in land use permitted by Government after the approval of ODP. To amend the proposals already made in the plan wherever they are not feasible or redundant. To review the Building byelaws and sub division regulations.

For the purpose of working out the zonal development plan the entire conurbation area has been divided into 3 planning zones or viable planning districts to provide district level community and civic amenities on the basis of the following considerations. The population to be housed in each district and its extent. The city municipal ward boundary. The size of zonal development plan for the purpose of handling.



The conurbation area earmarked for Harihar town in the finally approved Master Plan was 2230.00 hectares. Now while reconvening area for future planning, the following factors have been taken into consideration for future requirements.

**Plan period :** The plan period is 20 years. Accordingly the revised Master Plan has been prepared for the year 2021.

**Population projection :** Population projections have been made for the year 2021. A gross residential density of 110 persons per hectare is considered to accommodate the projected population of 1,50,000.

**Trend of Growth :** Looking into the past two decade development, almost no developments have taken place in the northern and eastern part of the town. The trend of development is towards the south eastern part of the Town.

**Suitability of land :** Which selecting the land for future urban growth, agriculturally production lands like deep black cotton soils, marshy lands and low buying areas are avoided instead hard and red soil lands have been proposed in view of the reduction of cost of land development and the stability of the buildings.

On the basis of the above consideration and to include the potential areas of development and the areas that are very close to the existing conurbation limit the conurbation boundary has been extended and it will be about 2100 hectares.

## Population Projections :

### Geometric Method

$$\begin{aligned}
 P_t &= P_o (1+r)^t \\
 \text{For 'r' we have} \\
 \log P_t &= \log P_o + t \cdot \log (1+r) \\
 \log (1+r) &= \frac{\log P_{2001} - \log P_{1991}}{t} \\
 &= \frac{\log 87749 - \log 66647}{10} \\
 &= \frac{4.9432 - 4.8237}{10} \\
 \log(1+r) &= 0.01194 \\
 (1+r) &= \text{Antilog. } 0.01194 \\
 (1+r) &= 1.0278 \\
 r &= 0.02788
 \end{aligned}$$

Substituting value of (1+r) in the equation, we have

$$\begin{aligned}
 P_{2011} &= P_{2001} (1+r)^t \\
 &= 87749 (1+0.02788)^{10} \\
 &= 1,15,532
 \end{aligned}$$

$$P_{2011} = 115,532$$

Similarly,

$$\begin{aligned}
 P_{2021} &= 87749 (1.02788)^{20} \\
 &= 152,113
 \end{aligned}$$

$$P_{2021} = 152,113$$

### Trend Method :

$$y = a \cdot b^x$$

Year	x	Y	Log y	Log. xy	x <sup>2</sup>
1981	-1	52325	4.7187	-4.7187	1
1991	0	66647	0	0	0
2001	+1	87749	4.4932	4.4932	1
Σ	0		0.2245	+0.2245	2

$$\begin{aligned}
 Y &= n \cdot a + bx \\
 \log y &= n \cdot \log a + \log bx \\
 14.4856 &= 3 \cdot \log a + \log b \times 0
 \end{aligned}$$

$$\begin{aligned}\log.a &= (14.4856) / 3 \\ &= 4.8285 \\ a &= \text{Antilog. Of } 4.8285 \\ a &= 67380\end{aligned}$$

Similarly

$$\begin{aligned}\Sigma xy &= a. \Sigma x + b. \Sigma x^2 \\ \log xy &= \log.a.x + \log.b. x^2 \\ 0.2245 &= 0 + \log.b (2) \\ \log.b &= 0.2245 / 2 \\ &= 0.11275 \\ b &= \text{Antilog of } 0.11275 \\ b &= 1.2949 \\ \text{from } Y &= a.b^x \\ P_{2011} &= 67380 * 1.2949^2 \\ &= 112,980\end{aligned}$$

$P_{2011} = 112,980$
----------------------

Similarly,

$$\begin{aligned}P_{2021} &= 67380 * 1.2949^3 \\ &= 1,46,298\end{aligned}$$

$P_{2021} = 146,298$
----------------------

### Percentage of increase Method :

$$\begin{aligned}\text{Increase between : } & \quad 1981-1991 = 27.37 \\ & \quad 1991-2001 = \frac{31.66}{59.03}\end{aligned}$$

Average of above : 29.515 %

$$\begin{aligned}P_{2011} &= 87,749 + (29.51/100 * 87749) \\ &= 113648\end{aligned}$$

$P_{2011} = 113648$
---------------------

$$\begin{aligned}P_{2021} &= 113648 + (29.51/100 * 113,648) \\ &= 147,191\end{aligned}$$

$P_{2021} = 147,191$
----------------------

**TCPO Method :**

$$P_n = P_o ( 2000 + ng ) / (2000-ng)$$

where  $P_n$  = reqd pop 2011,2021

$P_o$  = base pop 2001

$n$  = no. of years, 10, 20

$g$  = base pop growth rate 31.65%

$$P_{2011} = 87749 (2000 + 10*31.65) / (2000-10*31.65)$$

$$= 120,742$$

$$P_{2011} = 120,742$$

Similarly,

$$P_{2021} = 87749 ( 2000 + 20*31.65 ) / (2000-20*31.65)$$

$$= 169,015$$

$$P_{2021} = 169,015$$

**Population Projection by different methods :**

Sl.No.	Methods	2011 AD	2021 AD
1.	Geometrical Method	115,532	152,113
2.	Trend Method	112,980	146,298
3.	Pc.increase Method	113,648	147,191
4.	TCPO Method	120,742	169,015

The projected population of the town , by 2011 & 2021 AD is expected as 115,000 & 150,000 respectively.

Accordingly, area required to accommodate the projected population by 2021 AD is calculated as below, by assuming a density of 125 pph and works out to

$$150,000 / 125 = 1200 \text{ hectares.}$$

Though the area required to accommodate the projected population of 1,50,000 is worked out to as 1200 hectares. But , while deciding the conurbation limit the total extent of land is arrived at 2099.81 hectares. This is due to the inclusion of major areas which were already with in the earlier conurbation boundary as per approved master plan (ODP) of Harihar town.

Accordingly, the gross density of populations works out to 72 PPH . Because of the existing huge industrial area. (major area belongs to the Mysore Kirloskar Ltd.,) gross density i.e 72 PPH is appears to be on the lower side when compared to normal standard density of 100-125 PPH.

## Population Distribution :

The population project i.ed for 2021 AD is 150,000 This has been arrived at after working through various methods as indicated in the report.

A study of existing population distribution in various location indicates the relative concentration of the population in certain areas. This has lead to unhygienic, unplanned urban sprawl and slum conditions with high densities. These have to be reduced to planning norms to have hygienic invironment.

Municipal Wards	Population 2001	Built up area in Hectares	Gross density PP/Hectare
1	2382	99.36	23.97
2	2729	76.07	35.87
3	1822	102.85	17.72
4	3391	13.27	255.54
5	2806	14.89	188.45
6	2835	13.72	206.63
7	2418	72.26	33.46
8	1693	8.41	201.31
9	2200	4.47	492.17
10	2426	54.3	44.49
11	1944	31.69	61.34
12	1820	2.21	823.53
13	1777	4.15	428.19
14	1342	17.42	77.04
15	1719	6.47	265.69
16	1889	3.16	597.78
17	2137	2.28	937.28
18	2250	14.48	155.39
19	2556	5.28	484.09
20	2343	7.28	321.84
21	2050	3.58	572.63
22	2398	18.51	129.55

23	1758	3.31	531.12
24	2286	5.33	428.89
25	2136	17.31	123.40
26	1998	8.11	246.36
27	3608	13.78	261.83
28	2808	59.55	47.15
29	3357	62.23	53.95
30	2076	52.48	39.56
31	4403	23.07	190.85
TOTAL	48655	821.28	

The conurbation area of Harihar for the horizon year 2021 AD is divided into three planning districts as indicated in the map. It is observed that the planning district no III have relatively high dense areas as compared to the remaining districts. It is also observed that the distribution of various facilities is in favour of this district.

The additional population in district No. III are limited by restricting to a lower density. The district No. II is mostly residential. In arriving the distribution of population, Gross density of persons per hectares is assumed and fixed the population and accommodation in each district.

## CHAPTER - X

### Proposed Land Use

The Master Plan (Revised I) for the city of Harihar is aimed to achieve a balanced and integrated development of the city. The plan envisages a compact growth of the city to bring functional efficiency and spatial relationship minimizing the urban sprawl with various proposals. The plan has to help in improving the quality of life in the city and cause the creation of congenial environment for happy and healthy living.

#### Proposed Land use Analysis – 2021

LANDUSE	In Hectares	Percentage
Residential	1042.67	49.66
Commercial	110.16	5.25
Industrial	195.54	9.31
Public & Semi Public	111.86	5.32
Park & Open space	216.67	10.32
Public Utility	20.20	0.96
Transportation & communication	392.67	18.69
Water Sheet	10.04	0.48
Total	2099.81	100.00

#### Residential :

The existing residential area in the developed area of the city was only 126.88 Hectares. The residential density (net density) works out to 125 persons per hectare. Which is high, this is proposed for decongestion by assuming a fair residential densities, so that 1042.67 hectares of land including the existing residential area is proposed for residential purpose for future projected population for the horizon year 2021 A.D.

#### Commercial :

Harihar City has to function as an important trade centre in the region. The existing area of about 43.68 hectares is under commercial use. Commercial use is proposed along NH4, Bye-pass road, along Hospet road and in the planning districts wherever required. The area so designated for commercial purpose is 110.16 Hectares including the existing Commercial area which is quite sufficient for the projected population by 2021 AD.

**Industrial :**

The Ultimate goal of planning is to achieve a better standard of living through optimum utilization of economic resources. Harihar city is primarily an industrial Town. Harihar poly fibers has its influence on the conservation area. Mysore Kirloskar Industry even though closed presently land use is retained as industrial. KIADB has set up an layout along Hospet road. Industrial estate is also situated along Hospet road. There are many light industries along Shimoga road. There is possibility of industries coming is the northern and Southern part of the town. Considering all these factors, an industrial area of 195.54 hectares is earmarked in the Master Plan (R – 1) which works out to 9.31% of the total area. This includes the existing industrial area of 131.05 hectares.

**Public and Semi Public :**

This category of Land use includes area under Government and semi government offices, Educational use. Health, Social, Religious and Cultural institutions. Considering the requirements for the future, an area of 118.86 hectares of land is designated for this purpose. Which works out to 5.32% of the total area including the existing area of 28.81 Hectares.

**Parks, Play Ground and Open Spaces :**

The existing area under Parks, Play Grounds and other Open Spaces is 43.53 hectares which is insufficient. To overcome this deficiency, an extent of 216.67 hectares of land including existing area is earmarked for parks, play grounds, Burial Ground, Buffer Zone for lane lying area, which works out to 10.47% of the total area.

**Public Utilities:**

Existing area under public utilities is 6.49 Hectares which includes water treatment plant, KEB Grid, KEB sub stations. P & T office. For future requirements, an area of 20.20 hectares which is 1% of the total area is earmarked in Master Plan.

**Transportation and Communication :**

Existing area coming under this use is 224.03 hectares. The city has Good regional transportation facilities. Passenger traffic is mainly met by KSRTC and Railway. The town has a Broad Gauge railway line passing through the town. A helipad is existing along the Hospet road. To cope up with the growing demand, the Bus terminal and Railway Yard need expansion. Therefore proposals are worked out to be 329.76 Hectares is retained.



## District Wise Proposed Land Use Analysis Is As Follows :

### Planning District No. I :

This Planning District is located on the north of Bangalore Hubli railway line on the northern part of the City. This is predominantly industrial in use. Mysore Kirloskar factory situated in this district and KIADB layout and Industrial estate mark major land use.

An area of 316.47 hectares is earmarked for residential purpose which works out to 48.51% of the total area of the district including Guttur and Harlapur Village pockets proposed to accommodate the future population with a fair residential density. About 9.76 hectares of land is earmarked for commercial uses to serve the future commercial activities of the district.

Mysore Kirloskar industry is locked out. But the land use is retained as industrial hoping the industry might be re-opened. About 89.30 hectares of land is earmarked for industrial use including the existing which works out to 13.69 % of the total area of the district. An area of about 38.52 Hectare is earmarked for educational and Govt. office purposes and this works out to 5.95 % of the total area of the district.

An area reserved for Parks, Play Grounds Buffer along Canal and Burial ground is 84.64 Hectares including Existing area which works out 12.98 % of the total area.

Area earmarked under transportation and Communication use is 113.22 Hectares. This includes existing Helipad, which works out to 17.36 % of the total area of the district.

### District No. I Proposed Land Use Analysis 2021

LANDUSE	In Hectares	Percentage
Residential	316.47	48.51
Commercial	9.76	1.50
Industrial	89.30	13.69
Public & Semi Public	38.82	5.95
Park & Open space	84.64	12.98
Public Utility	0.00	0.00
Transportation & communication	113.22	17.36
Water Sheet	0.08	0.01
Total	652.29	100.00

**Planning District No. II :**

The planning district No. 2 is located in the eastern part of the town. This consists of Amaravathi village pocket. NH4 and Broad gauge line passes through this district. It is proposed to accommodate people in this district by 2021 AD. Total extent of this district is Hectares.

This is predominant in residential use. This district houses Amaravathi village pocket and on Ashraya Layout. Area earmarked for residential use is 329.03 hectares which works out to 55.60 % of the total area of district. This includes the existing residential area.

Commercial activities are concentrated along NH4 and along Shimoga road. Area earmarked for commercial activities is 15.36 hectares which includes existing commercial area and works out to 2.68 % of total area of district.

There are some industrial units along NH4 near level crossing and near Bus Stand and are included in the area earmarked for Industrial use. Which is 35.13 Hectares and works out to 5.94 % of total area of district.

In the area earmarked for public and semipublic use, important offices of CMC, Court, ESI hospital, Govt. school, Guru Bhavan, Library are situated Including this an area, of 44.55 hectares which is 7.53 % of total area is reserved.

The area earmarked for parks, play grounds and open spaces which is 47.23 hectares and works out to 7.98 % of total area of the district. Open space near KSRTC Bus Stand parks near ESI hospital and in the lay outs, Buffer proposed along D.B. Right canal and Buffer along Railway line came under this use. Area under public utilities use include KEB Grid which is 15.34 hectares which works out to 2.59 % of total area of district.

Area under transport and communication use is 103.41 hectares which is 17.47 % of the total area of district. This includes KSRTC Bus stand, Railway station, Railway yard. Telephone Exchange, Existing and proposed roads. This also includes the proposed of road along Railway line to avoid two level crossings.

**District No.II Proposed Land Use Analysis 2021**

LANDUSE	In Hectares	Percentage
Residential	329.03	55.60
Commercial	15.36	2.68
Industrial	35.13	5.94
Public & Semi Public	44.55	7.53
Park & Open space	47.23	7.98
Public Utility	15.34	2.59
Transportation & communication	103.41	17.47
Water Sheet	1.22	0.21
Total	591.77	100.00

**Planning District No. III**

Planning district No. 3 has an extent of Hectares. It is in the southern part of the town. It consists of Mahajenahalli village pocket. NH4 Bye pass road and Shimoga Bellary road are the major roads in this district. It is proposed to accommodate people in this district by 2021 AD.

Even though this district consists of mixed land uses. Residential is the major Land use. Near residential layouts have come in this district. Old town area, New Rajaram Colony, KHB quarters, High School extension area, residential Layouts behind canal sub division office are the major residential areas. Area earmarked for residential use is 397.17 hectares, which works out to 46.41 % of total area of the district including the existing area.

Commercial activities are concentrated along major roads. APMC constitutes major part of this use. New proposals are made along the NH4 Bye Pass road. Area earmarked for commercial activity is 84.54 hectares. This includes the existing area and works out to 9.88 % of the total area of the district.

There are some light industrial units like, Rice mill and Saw Mills along Shimoga road. Area earmarked for industrial use along Shimoga road is 71.11 hectares. This includes the existing area and works out to 8.31 % of total area of the district.

PWD office, taluk office, General Hospital, Govt. High School, Canal Sub division office. Temple come in the area of public and semipublic use. Including this an area of 28.49 Hectares, is earmarked for P & SP use which is 3.33 % total area of this district. Buffer zone along Sulekere Hall, along Tungabhadra river, buffer around Industrial proposals Burial grounds, play grounds, parks, come under this category. Area earmarked for

parks, play grounds and open spaces including existing is 84.80 hectares and works out to 9.91 % of the total area of the district.

Area reserved under public utilities use is 4.87 hectares. This include the existing water treatment plant and works out to 0.57 % of the total area of the district.

Area under transport and communications use is 176.03 Hectares which is 20.57 % of the total area of district. This includes existing and proposed roads.

#### **District No.III Proposed Land Use Analysis 2021**

LANDUSE	In Hectares	Percentage
Residential	397.17	46.41
Commercial	84.54	9.88
Industrial	71.11	8.31
Public & Semi Public	28.49	3.33
Park & Open space	84.80	9.91
Public Utility	4.87	0.57
Transportation & communication	176.03	20.57
Water Sheet	8.75	1.02
Total	855.76	100.00

## CHAPTER - XI

### Proposed Circulation

The approved ODP of Harihar city provides for a hierarchy of roads starting from major roads of 18 meters wide up to 45 meter wide NH4 Bye pass road. An outer ring road of 24 meter is proposed in the eastern part of the city which connects Shimoga Bellary road, NH4 and NH4 Bye pass road and interlink outer parts of the City.

The provisions made in the approved ODP have been reviewed with reference to the existing situation and the feasibility or otherwise of the various provisions.

The proposed Master Plan (Revised I) provide for the following sized roads.

Sl.No.	Category of Roads	Road width in Meters
1	Residential Road	9.0 m and 12.0 m
2	District road, Radial Road And Chord road	12.0 m and 15.0 m
3	Major Roads	18.0 m
4	Outer Ring Road	24.0 m
5	Bye Pass Road	45.0 m

The following aspects have been taken into consideration in formulating the circulation for the future city :

- Regional and City traffic segregation.
- Proper linkages for the surrounding areas in the region.
- Provision for higher order roads for Intercity traffic
- Suitability of road pattern for mixed type of vehicular traffic.

#### **OUTER RING ROAD :**

On the eastern side of the City, on outer ring road of 24 meter width is proposed which connects existing Shimoga Bellary road, NH4 and NH4 Bye-pass and outer parts of the city.

The circulation pattern of the city will be incomplete, if the crossings across the railway line are not improved. A road under bridge is proposed for the outer ring road across Bangalore Hubli railway line near the level Crossing of NH4 and Railway line. As the two level crossings along the Nation Highway No.4 causes traffic congestion and results in waste of time and fuel, a road of 36 meter width is proposed along Railway line in the southern side Connecting the level crossing points. This facilitates smooth passage of traffic.

**Building Lines Proposed For Various Roads Is As Follows :**

1. Existing National Highway No.4 (P.B.Road)

- 21.00 Mtr from center of road (Inside Municipal limits )
- 75.00 Mtr from center of road (Outside of Municipal limit)

2. Shimoga Bellary road (State Highway)

- 21.00 Mtr from center of road (Inside Municipal limits )
- 40.00 Mtr from center of road (Outside of Municipal limit)

3. NH-4 Bye Pass Road.

- 75.00 Mtr from center of road

## CHAPTER - XII

### Phasing Of Development

In order to contain the population of the city by 2021 AD the following additional area (excluding the existing ) has to be developed under various use.

LANDUSE	In Hectares
Residential	916.89
Commercial	66.48
Industrial	66.49
Public & Semi Public	83.05
Park & Open space	176.27
Public Utility	13.71
Transportation & communication	164.40
Total	1485.30

A total of 1485.30 Hectares of land have to be developed under various land uses as above.

The approximate estimate is valued in acquisition of land reserved for public use as required under 12(2)(v) of Karnataka Town & Country Planning Act 1961 is worked out on the basis of prevailing rates (market rate) of land of the area concerned.

The approximate cost of the acquisition of land reserved for public uses Area reserved for public & semi public use (excluding existing) is 83.05 Hectares. Area reserved for Parks, playground and open spaces (excluding existing ) is 176.27 Hectares Assuming an average market rate of about Rs 5lakhs per hectare, the total cost of acquisition will be  $259.32 \times 5$  Lakhs = Rs. 1296.6 Lakhs Cost of land development will be  $259.32 \times 2.5$  Lakhs per hectare = Rs. 648.30 lakhs The development of road network of about 35 Km. Work out to be Rs.1050 Lakhs Total cost of development of plan proposed will be approximately about Rs. 2994.4 Lakhs.

Acquisition of land and related development activities are to be carried out by various agencies like city Municipal council, The Karnataka Housing Board, etc, including the DUDA as part of their schemes. Any city to be developed on scientific way is to have a development program and its execution. Since there is no city improvement in Harihar Town, following local bodies are responsible for the development of the city.

- ❖ TMC of Harihar Town
- ❖ DUDA.
- ❖ Mandal Panchayats within the Local planning area of Davangere & Harihar.

Apart from the above the KHB, Slum clearance board and the KIADB are also responsible for the development of the city.

KHB has colonies along the Hospet Road and also has a new proposal near Amaravathi village along old P.B.Road. The Slum Clearance board has also taken some of the slums for improvement as already stated in the report.

**The program of phasing of development is worked out in two stages viz 2011 and 2021 AD. The area covered in each phase is shown on the map.**

**The first Phase 2011 ----- 718.42 Hectares**

**The first Phase 2021 ----- 1374.56 Hectares**



## ZONAL REGULATIONS

### Zonal Regulations

*In order to promote public health, safety and the general social security welfare of the community, it is necessary to apply control and reasonable limitation on the development of land and buildings. This is to ensure that most of appropriate, economical and healthy development of the town takes place in accordance with the land use plan, and its continued maintenance over the years. For this purpose, the town is divided in to a number of use zones, such as residential, commercial, industrial, public and semi public etc. Each zone has its own regulations, as the same set of regulations cannot be applied to the entire city.*

Zonal Regulations protects residential areas from the harmful invasions of commercial and industrial uses and at the same time promotes the orderly development of industrial and commercial areas, by suitable regulations on spacing of buildings to provide adequate light, air, protection from fire, etc. It prevents over crowding in buildings and on land to ensure adequate facilities and services.

Zoning is not retrospective. It does not prohibit the uses of land and buildings that are lawfully established prior to the coming into effect of these Zonal Regulations. If these uses are contrary to the newly proposed uses, they are termed non-conforming uses and are gradually eliminated over years without inflicting unreasonable hardship upon the property owner.

The Zonal Regulations and its enforcement ensure proper land use and development and form an integral part of the Master Plan - 2021. It also ensures solutions to problems of development under local conditions.

This Zonal Regulations for Davangere - Harihar Local Planning Area prepared under the provisions of and clause (iii) of sub-section (2) of section 12 of the Karnataka Town and Country Planning Act, 1961 are detailed below,-

#### 1 Establishment of Zones and Zonal Maps

- i. The area is divided into use zones as shown in the enclosed maps.
- ii. Zonal boundaries and interpretations of Zonal Regulations.
  - a) Where there is uncertainty as regards the boundary of the zones in the approved maps, it shall be referred to the authority and the decision of the authority in this regard shall be final.
  - b) For any doubt that may arise in interpretation of the provisions of the Zonal Regulations, the Director of Town Planning shall be consulted by the authority.

c) Where there is uncertainty in identifying the alignment of Nalla, Canal, River, existing Public road, Railway line, high tension line and any temple position and also R.S.No. boundaries in the approved maps, It shall be referred to the actual positions on ground and decision taken by the authority in this regard shall be final.

**2 The Annexure-I appended to these regulations sets out the various uses of land**

- i. That are permissible and
- ii. That are permissible under special circumstances by the Authority in different zones.

**3 The regulations governing minimum size of plot, maximum plot coverage, minimum front, rear and side setbacks and maximum number of floors and heights of structures are set out in Annexure-II appended to these regulations.**

**Definitions**

In these **Zonal Regulations**, unless the context otherwise requires, the expressions given below shall have the meaning indicated against each of them.

1. **'Act'** means the Karnataka Town and Country Planning Act, 1961.
2. **'Amenity'** includes roads, street, open spaces, parks, recreational grounds, playgrounds, gardens, water supply, electric supply, street lighting, sewerage, drainage, public works and other utilities, services and conveniences.
3. **'Apartment'** means a room or suite or rooms, which are occupied or which is intended or designed to be occupied by one family for living purpose.
4. **'Balcony'** means a horizontal cantilever projection including a handrail or balustrade, to serve as passage or sit out place.
5. **'Basement story or cellar'** means any story, which is partly / wholly below the ground level. The basement height should not project more than one meter above the average ground level.
6. **'Building line'** means the line up to which the plinth of buildings may lawfully extend within the plot on a street or an extension of a street and includes the line prescribed, if any, in any scheme.
7. **'Chejja'** means a continuous sloping or horizontal cantilever projection provided over an opening or external wall to provide protection from sun and rain.
8. **'Chimney'** means a structure usually vertical containing a passage or flue by which the smoke, gas, etc. of a fire or furnace are carried off and by means of which a draught is created.
9. **'Corner Plot'** means a plot facing two or more intersecting streets.
10. **'Corridor'** means a common passage or circulation space including a common entrance hall.

11. **'Courtyard'** means a space permanently open to the sky within the site around a structure and paved / concreted.
12. **'Covered Area'** means area covered by building / buildings immediately above the plinth level, but does not include the space covered by;
- i. Garden, rocky area, well and well structures, plant, nursery, water pool, swimming pool (if uncovered) platform around a tree, tank, fountain, bench with open top and unenclosed sides by walls and the like;
  - ii. Drainage, culvert, conduit, catch-pit, gully-pit, chamber gutter and the like;
  - iii. Compound or boundary wall, gate, un-storied porch and portico, Chejja, slide, swing, uncovered staircase, watchman booth, pump house. The area covered by watchman booth / pump house shall not exceed three square meters;
  - iv. Sump tank and electric transformer.
13. **'First Floor'** means the floor immediately above the ground floor, on which second and other floors follow subsequently.
14. **'Flatted Factory'** means a premises having group of non-hazardous small industrial units having not more than 50 workers. These units may be located in multi-storeyed buildings.
15. **'Floor'** means the lower surface in a storey on which one normally walks in a building. The general term 'floor' does not refer basement or cellar floor and mezzanine.
16. **'Floor Area Ratio' (FAR)** means the quotient of the ratio of the combined gross floor area of all floors, except the areas specifically exempted under these regulations, to the total area of the plot, viz.

<b>Floor Area Ratio</b> =	<b>Total floor area of all the floors.</b>
	<b>Plot Area</b>

17. **'Frontage'** means the measurement of the side of any site abutting the road.
18. **'Garage'** means a structure designed or used for the parking of vehicles.
19. **'Ground Floor'** means immediately above the level of the adjoining ground level on all sides, sides or above the basement floor.
20. **'Group Housing'** means apartments or group of apartment and / or more than two buildings on a plot with one or more floors and with one or more dwelling units in each floor. They are connected by an access of not less than 3.5 m in width, if they are not approachable directly from the road.

21. **'Hazardous Building'** means a building or part thereof used for:
- i) Storage handling, manufacture or processing of radioactive substances or of highly combustible or explosive materials or of products which are liable to burn with extreme rapidity and / or producing poisonous fumes or explosive emanations;
  - ii) Storage, handling, manufacture or processing of which involves highly corrosive, toxic or noxious alkalis, acids, or other liquids, gases or chemicals producing flame, fumes and explosive mixtures, etc. or which result in division of matter into fine particles capable of spontaneous ignition.
22. **'Height of Building'** means the vertical distance measured in the case of flat roofs from the average level of the site to the top of the roof and in the case of pitched roofs up to the point where the external surface of the outer wall intersects a finished surface of the sloping roof and in case of gable facing the street, the mid point between the eave-level and the ridge. Architectural features, service no other function except that of decoration shall be excluded for the purpose of measuring height. Water tank, chimneys, lift room, stair case room, and parapet are also excluded for the purpose of measuring height.
23. **'High-rise Building'** means a building with ground floor plus four or more floors above the ground floor or a building exceeding 15 m or more in height.
24. **'Loft'** means a residual space above normal floor level, which may be constructed or adopted for storage purposes.
25. **'Mezzanine Floor'** means an intermediate floor between the ground floor and first floor only. The area of mezzanine floor shall not exceed 1/3 of covered area of ground floor.
26. **'Non Confirming Use'**
27. **'Parapet'** means a low wall or railing built along the edge of a roof.
28. **'Parking Space'** means an area enclosed or unenclosed, covered or open sufficient in size to park vehicles together with a driveway connecting the parking space with a street or any public area and permitting the ingress and egress of the vehicles.
29. **'Penthouse'** means a covered space not exceeding 10 sq m on the roof of a building, which shall have at least one side completely open.
30. **'Plinth'** means the portion of a structure between the surface of the surrounding ground and surface of the floor immediately above the ground.
31. **'Plinth Area'** means the built up covered area of the building / buildings immediately above plinth level.
32. **'Plinth Level'** means the level of the floor of a building immediately above the surrounding ground.

33. **'Porch or Portico'** means a roof cover supported on pillars or cantilevered projection for the purpose of pedestrian or vehicular approach to a building.
34. **'Road Width'** means the distance between the boundaries of a road including footways and drains measured at right angles to the centre of the plot. In case of roads having service roads in addition to the main roads, the width of road shall be the aggregate width of service roads and main roads for determining FAR and number of floors.
35. **'Room Height'** means the vertical distance measured between the finished floor surface and the finished ceiling surface. Where a finished ceiling is not provided, the under side of the joists or beams or tie-beams shall determine the upper point of measurement.
36. **'Row Housing'** means a row of houses with only front, rear and interior open spaces.
37. **'Semi-detached Building'** means a building detached on three sides with open spaces as specified in these regulations.
38. **'Service Road'** means a road / lane provided at the front, rear or side of a plot for service purposes.
39. **'Setback Line'** means a line prescribed under these Zoning of Land use and Regulations beyond which nothing can be constructed towards the plot boundary.
40. **'Staircase Room'** means a room accommodating the stair and for purpose of providing protection from weather and not used for human habitation.
41. **'Stilt Floor'**: It is a floor consisting of columns, used only as car parking, shall not exceed 2.2 m in height and shall not be covered by enclosures and shutters.
  - I) In case of a building with ground floor and up to 4 floors on stilts, the total height of the building shall not exceed 15 m, shall be provided with lift and shall not be construed as a high rise building
  - II) The stilt floor should not be considered as a separate floor and the same shall be exempted from the height of the building.
  - III) For a building on stilts, the floor immediately above the stilt shall be considered as ground floor.
42. **'Truck Terminal'** means the terminal that shall consist of the facilities of Truck parking bays, loading/unloading bays, Administrative offices, motor garage, workshops, retail and repair shops, night shelter, boarding /lodging, bank, restaurant, shopping, warehouse, cold-storage, petrol/diesel filling and service station, circulation areas, public conveniences and other essential facilities.
43. **'Zonal Regulations'** means Zoning of Land use and Regulations prepared under the Karnataka Town and Country Planning Act, 1961 prescribing the uses permissible in different land use zones, the open spaces around buildings, plot coverage, floor area ratio, height of the building, building lines, parking, etc.

## ANNEXURE - I

For the purpose of these regulations, the planning area of the town is divided into following use zones.

- 1) RESIDENTIAL
- 2) COMMERCIAL
- 3) INDUSTRIAL
- 4) PUBLIC AND SEMI-PUBLIC
- 5) PUBLIC UTILITIES
- 6) OPEN SPACES
- 7) TRANSPORT AND COMMUNICATIONS
- 8) AGRICULTURAL USE

Uses of land that are permissible and those that are permissible under special circumstances by the Authority in different zones of the local planning area shall be as follows.

### 1. RESIDENTIAL ZONE

#### a) Uses permissible

Dwellings, hostels including working women and gents hostels, old age homes, orphanages, dharmashalas, places of public worship, schools offering up to higher primary school courses, (with a minimum site area of 500 sq. mtrs for nursery schools, 1000 sq. mtrs for lower primary schools and 2000 sq. mtrs for higher primary schools) public libraries, post and telegraph offices, Karnataka Power Transmission Corporation Limited counters, milk booths, HOPCOM centres, computer training institutes, BWSSB counters, clubs, semi public recreational uses & ATM's.

#### b) Uses that are permissible under special circumstances by the authority

Municipal, statutory authorities state and central government offices, public utility buildings, colleges, cemeteries, golf clubs, banks, places of public worship nursing homes provided they satisfy parking

Norms prescribed in Table-16 and hospitals for human care except those meant for mental treatment (with a minimum site area of 750 sq. m. and the site is abutting a road of minimum 12 meter width), philanthropic uses, fuel filling stations, huller and floor mills (up to 10 HP), coffee grinding machines including service industries with power up to 5 HP (for all the above industries and those as per the list given in Schedule-I, power required for

air conditioning, lifts and computers are excluded from HP specified above), power loom for silk twisting (up to 10 HP) provided the noise generated shall be within the limit prescribed by the Ministry of Environment and Forest, Government of India., gas cylinder storage provided it satisfies all required norms of safety, neighborhood or convenience shops, software computer offices and information technology related activities/hardware assembly, health club provided the site is abutting a road of minimum 12 m width, chat / café centres, doctors consulting room, offices of advocates, other profession in public interest not exceeding 20.00 sq m. of floor area and pay & use toilets.

## **2. COMMERCIAL ZONE**

### **a) Uses that are permissible**

Offices, shops and service establishments like hair dressing saloons, laundries, dry cleaning and tailoring shops, hotels, clubs, newspaper or job printing, banks, places of amusement or assembly, community halls, convention centres, exhibition centres, restaurants, schools, colleges, cinema theatres, advertising signs conforming to relevant building byelaws, church, temple and other places of worship, educational, technical, research and other institutions, libraries, municipal, state or central Govt. offices any retail business or services not specifically restricted or prohibited therein. Fuel filling stations, nursing homes, residential buildings including orphanages and old age homes, warehouses, and Kalyana Mantapas, hard and software computer offices and information technology related activities and service industries listed in schedule-I up to 10 HP. (Power required for air conditioners, lifts and computers are excluded from the HP specified above) and all uses permitted in residential use zone.

### **b) Uses permissible under special circumstances by the authority**

Automobile workshop, garages, storages, junk yards, truck terminals and truck parking, manufacturing establishments employing not more than ten laborers and manufacturing goods to be sold by the manufacturer in retail with not more than 20 HP and uses permissible on appeal in the residential zone other than those specifically prohibited therein.

## **3. INDUSTRIAL ZONE**

### **a) Uses that are permissible**

Industries conforming to performance standard as given in illustrative schedule-II, those employing not more than 500 workers, with aggregate installed power not exceeding 100 HP, covered storage for industry warehousing and storage, ice manufacturing plants, public utility buildings, public utilities like, sewage and garbage disposal plants and related buildings, parking, loading and unloading requirements to be provided for all cases, essential staff like watch and ward Asst. manager and manager quarters with an area not exceeding 180, 216 and 240 sq. m. respectively.

Bus and truck terminals, fuel filling stations, taxi and scooter stands, canteen, all uses permissible in the commercial use zone except residential uses, and recreational facilities for

employees, dispensary, automobile service stations, , offices, shops, clubs, job printing, banks, restaurants, automobile service stations, information / bio-technology.

#### **b) Uses permissible under special circumstances by the authority**

Junkyards, dairy and poultry farms, slaughter houses and burial grounds, crematoria, obnoxious and hazardous industries away from predominant wind directions, ice and freezing plants. kalyana mantapa

Note: Industries are to be cleared by the Pollution Control Board wherever necessary.

### **4. PUBLIC AND SEMI-PUBLIC USES**

#### **a) Uses that are permissible**

Government and administrative centres, secretariats, district office, law courts, jails, police stations, government residence and institutional office, educational, college campus including hostel facilities for students, cultural and religious institutions including libraries, reading rooms and clubs, medical and health institutions, fuel filling stations and quarters for essential staff as per the norms specified in table - 20. cultural institutions like community halls, opera houses, etc. of predominantly non commercial in nature, convention centres, exhibitions, utilities and services, water supply installations including disposal works, electric power plants, high tension and low tension transmission lines, sub stations, etc. gas installation and gas works, fire fighting stations, banking institutions, institutional buildings and ashrama schemes.

All uses permissible under parks and playgrounds.

**Note:** Retail shops, filling stations, clubs, banks, canteens, staff quarters not exceeding 240 sq. mtrs. required for proper maintenance and functioning of public and semi-public uses in the zone may be permitted when they run on non-commercial basis in their own premises and ancillary to the respective institutions.

#### **b) Uses permissible under special circumstances by the authority**

Government printing press, retail shops, parking lots, parks, play grounds and recreational uses, stadium, cemeteries, recreational clubs, canteen, libraries, aquarium, planetarium, museum, horticultural, nursery and swimming pool, orphanages and old age homes.



## **5. PUBLIC UTILITIES**

### **a) Uses that are permissible**

Water supply installations including treatment plants, storage reservoirs, overhead tanks, drainage and sanitary installations including primary/secondary treatment plants and disposal works, drying beds, dumping yards, electric power plants, high and low tension transmission lines, sub-stations, gas installations and gas works, fire stations, milk dairies and such other public utilities.

### **b) Uses permissible under special circumstances by the authority**

Shops, canteens, offices, banking counter, clubs, indoor recreational use dwellings required for proper maintenance and functioning of public utility in their own premises and other ancillary uses, the area of such ancillary use not exceeding 5% of the total area.

## **6. PARKS, PLAYGROUNDS AND OPEN SPACES**

### **a) Uses that are permissible**

Parks, play grounds, stadium, sports grounds, swimming pools, children's play land inclusive of amusement spots such as Disney land type, toy trains and other recreational use, garden land, parkways, boulevards, cemeteries and crematoria.

### **b) Uses permissible under special circumstances by the authority**

Clubs, (non commercial nature), open air theatres, indoor recreational uses, dwelling for watch and ward, government dispensaries, milk booth, canteens, libraries, Hopcoms, public use ancillary to park and open spaces, the area of such ancillary use not exceeding 5% of the total area, aquarium, planetarium, museum, Bala Bhavan, art gallery, horticultural nursery, transportation terminals and swimming pool.

## **7. TRANSPORTATION AND COMMUNICATION**

### **a) Uses that are permissible**

Railway lines, railway yards, railway stations, railway workshops and sidings, roads, road transport depot, bus stations and bus shelter parking areas, truck terminals, dock yards, jetties, piers, airports and air stations, post offices, telegraph offices, telephones and telephone exchanges, television telecasting and radio broadcasting stations, microwave stations and offices in their own premises and residential quarters for watch and ward, filling station.

### **b) Uses permissible under special circumstances by the authority**

Shops, canteens, banking counters, clubs, godowns, indoor recreational uses, dwellings required for proper maintenance of the transport and communication services in their own premises as an ancillary, and other ancillary uses. The area of such ancillary use not exceeding 5% of the total area.

**Note:**

- i) Diesel generators equivalent to the quantity of power supplied by the Karnataka Power Transmission Corporation Limited (KPTCL) may be permitted as substitute to power cut and power failures in any zone after obtaining information on the quantity of power supplied to a premises and the capacity of generator required from KPTCL. However, in residential zone installation of diesel generators be discouraged and shall be given in exceptional cases after spot verification and obtaining No Objection Certificate from the people living within a distance of 100 m from the location point of generator.
- ii) In case of change of land use from the approved ODP/CDP/RCDP to other use, the F.A.R. and coverage shall be the least of the two uses.

**8. AGRICULTURAL ZONE****a) Uses that are permissible**

Agricultural, horticulture, children's play land inclusive of amusement spots such as Disneyland type, toy trains, farmhouses and their accessory buildings and uses not exceeding 200 sq m of plinth area in a plot areas exceeding minimum of 1.20 hectares and above only. Uses specifically stated in the land use plan like urban village, brick kilns, quarrying and removal of clay and stone up to three meter depth, gardens, orchards, nurseries and other staple crops, grazing pastures, forest lands, marshy land, barren land and water sheet, Highway amenities viz., filling stations, weigh bridges and check posts, cane crushers (seasonal), rice mills, dairy and poultry farming, milk chilling centres, sugar mills, jaggery mills, decorticator and any accessory activities to agriculture not transgressing any pollution norms and only suitable to local conditions.

**Note:** A buffer of minimum 45 m is assumed all along the flow of the river on both banks . Prior no objection certificate should be obtained from the concerned authorities in case of places abutting canal, lake, pond.

**b) Uses permissible under special circumstances by the authority**

Parks, open spaces and other public and semi-public, recreational uses not conducted for profit, storage, processing and sale of farm products on the property where they produce, the service and repairs of farm machinery and agricultural supplies, Ashraya houses for economically weaker section, institutions relating to agriculture like research station, residential schools / colleges / technical institutions with enough space for separate playgrounds as prescribed in Table 20 & 21, helipad, clubs of non profit nature, places of worship, hospitals, sports clubs, play grounds, cultural buildings, libraries, exhibition centres, may be permitted provided in any case the coverage cannot exceed 20% of the plot area. This excludes area meant for indoor sports, open-air sports, and playgrounds as prescribed in Table-20 and 21. Orphanages and old age homes, residential developments within the area reserved for natural expansion of villages and buildings in such areas should not exceed two floors (ground + one).

**NOTE:** All the uses permissible under special circumstances shall be considered after placing the subject before the authority.

**SCHEDULE – I**

**Illustrative list of service industries that are permissible in residential zone  
(as a part of residential building) under special circumstances by the  
Authority.**

Sl. No.	Description
1	Bread and bakeries
2	Confectionery, candies and sweets
3	Biscuit making
4	Ice cream
5	Cold storage (small scale)
6	Aerated water and fruit beverages
7	Flour mills with 5 HP in residential zone
8	Automobile two wheelers and cycle servicing and repairs
9	Furniture (wooden and steel)
10	Printing, book binding, embossing, etc.
11	Laundry, dry cleaning and dyeing facilities
12	General jobs and machine shops
13	Household utensil repair, welding, soldering, patching and polishing(kalai)
14	Photograph, printing (including sign board printing)
15	Vulcanizing
16	Tailoring
17	Handlooms (small scale)
18	Velvet embroidery shops
19	Art weavers and silk sarees printing and batik work
20	Jewellery, gold ornaments and silver wares
21	Mirrors and photo frames
22	Umbrella assembly
23	Bamboo and cane products
24	Sports goods and its repair shops
25	Musical instruments repair shops
26	Optical lens grinding, watch and pen repairing
27	Radio & T.V repair shop
28	Rubber stamps
29	Card board box and paper products including paper (manual only)
30	Cotton and silk printing
31	Webbing (narrow, fabrics, embroidery, lace manufacturing)
32	Ivory, wood carving and small stone carving
33	Coffee curing units

34	Candles and wax products
35	Household kitchen appliances
36	Washing soaps small scale only
37	Fruit canning and preservation
38	Electric lamp fitting, electrical rewinding & motor repair
39	Shoe making, repairing
40	Power looms (silk reeling unit up to 10 HP)
41	Areca nut processing unit
42	Beedi rolling
43	Agarbathi rolling
44	Audio / Video Library
45	STD / ISD counters

## SCHEDULE – II

### Illustrative list of industries permitted in industrial zone

Sl. No.	Description
1	Bread and bakeries
2	Confectionery, candies and sweets
3	Biscuit making
4	Ice cream
5	Cold storage (small scale)
6	Aerated water and fruit beverages
7	Floor mills and huller machines
8	Hats, caps, turbans including embroidery
9	Hosiery including knitted garments
10	Gold and silver thread
11	Shoe lace making
12	Toy making (earthen paper, wooden plastic metal and tin)
13	Cotton and silk cordage's, twine thread and thread ball making and cotton silk printing
14	Velvet embroidered shoes
15	Art wares and silk screen printing and batik works
16	Jewellery, gold ornaments and silver wares
17	Wood and ivory carving
18	Electroplating, mica plating, engraving
19	Photographs, printing (including sign board and painting)
20	Stone carving
21	Mirrors and photo frames

22	Umbrella assembly
23	Bamboo and cane products
24	Sports goods
25	Card board box and paper products including paper
26	Stationery items including educational and school drawing instruments
27	Furniture making (wooden and steel)
28	Musical instruments
29	Printing, book binding, embossing, photograph, etc.
30	Optical lens grinding watch and pen repairing
31	Steel wire products
32	Sheet metal works
33	Metal polishing
34	Laboratory porcelain wares
35	Radio assembly and parts (small scale)
36	Electric lamps, fittings, shades, fixtures, etc.
37	Automobiles, scooters, cycle service and repair workshop
38	Laundry and dry cleaners
39	General jobbing machine
40	Iron products (only when related to other industries using electricity)
41	Candles and Bags product
42	Brushes (household, sanitary and toilet)
43	Shoe making and repairing
44	Leather goods
45	Black smithy
46	Household utensils, repair, welding, soldering, patching, and polish (kalai)
47	Vulcanizing and tyre re-trading
48	Cement products
49	Chalk, crayon artist's colour
50	Tobacco products (cigarettes and beedies)
51	Cosmetics and hair oils
52	Cutlery
53	Cycle parts and accessories
54	Door and window fittings
55	Drugs and medicines
56	Lantern, torches and flash lights
57	Aluminium wires, cake and pastry moulds
58	Padlocks and pressed locks
59	Rope making
60	Mathematical instruments
61	Builder's hard wares

62	Tin products
63	Optical frames
64	Button clips
65	Wax polishing
66	Upholstery springs and other springs
67	Precision instrument of all kinds
68	Safety pins
69	Screws, bolts, nuts, pulleys, chains, gears
70	Conduit pipes fabrication (not exceeding 2" diameter)
71	Buckets and metal containers, plastic jugs and fixtures metal embossing
72	Oil stoves and pressure lamps
73	Paper mill (small scale) hand made
74	Washing soaps
75	Hand tools
76	Electric industries, computer software and hardware
77	Small domestic appliances and gadgets (room heaters, coolers, hot plates, iron lamps, etc.)
78	Manufacturing of trunks and metal boxes, suit cases, small containers
79	Scientific, educational and industrial precision instruments.
80	Clocks and watches, photographic equipments
81	Typewriters
82	Electrical instruments (including transistors)
83	Calculating machines (small machines only)
84	Copper wire and utensils
85	Sewing machines
86	Sanitary fittings (excluding sanitary wares)
87	Electrical appliances (room heaters, iron and room air coolers, small transformers, electric fans, fractional HP motors, cooking ranges, water heaters, etc.) computers and electric goods.
88	Electrical fans and industries permitted in light industrial zone.
89	Tailoring and garment making
90	Handlooms and power looms
91	Webbing (narrow fabrics, embroidery lace manufacturing
92	Rubber stamps
93	Fruit caning and preservation

**Note:**

No Objection Certificate from Pollution Control Board should be obtained, wherever necessary as insisted by Authority.

**ANNEXURE –II****Open Spaces, Coverage and Floor Area Ratio Limits****Residential buildings:**

Every room intended for human habitation shall abut on to an interior or exterior open space or open veranda. The open spaces to be left around building shall be as given in Table–1 &2.

**TABLE – 1****Front and rear set backs for residential building**

Sl. No.	Depth of site in meters	Min. front in meters	Min. area in meters
1	Up to 10	1.00	1.00
2	Over 10 up to 13	1.50	1.00
3	Over 13 up to 16	1.75	1.25
4	Over 16 up to 19	2.00	1.50
5	Over 19 up to 22	2.50	1.75
6	Over 22 up to 25	3.50	2.00
7	Over 25 up to 28	4.00	2.25
8	Over 28 up to 31	5.00	2.75
9	Over 31 up to 37	5.75	3.50
10	Over 37 up to 45	7.50	4.00
11	Over 45.	9.00	4.50

**TABLE - 2****Side Setbacks for Residential Buildings**

Sl. No.	Width of site in meters	Left set back in meters	Right set back in meters
1	Up to 7	---	1.00
2	Over 7 up to 10	1.00	1.00
3	Over 10 up to 13	1.00	1.50
4	Over 13 up to 16	1.25	2.50
5	Over 16 up to 19	1.50	3.00
6	Over 19 up to 22	2.00	3.00
7	Over 22 up to 25	2.50	3.50
8	Over 25 up to 28	3.00	4.00
9	Over 28 up to 31	3.75	5.00
10	Over 31	4.50	6.00

**Note:**

- i. When garage is proposed on the right side, the minimum set backs shall be 3.0 m;
- ii. For residential, commercial, public and semi-public, traffic and transportation, public utility buildings, above 10 m in height, the set backs shall be insisted as per Table – 3



**Table – 3**

**Exterior open spaces / setbacks for residential, commercial, public and semi-public, traffic and transportation, public utility buildings, above 10.00 meters in height.**

Sl. No.	Height of building in meters	Exterior open spaces / setbacks to be left on all sides (front, rear and sides) in meters
1	Above 10.0 up to 12.0	4.5
2	Above 12.0 up to 15.0	5.0
3	Above 15.0 up to 18.0	6.0
4	Above 18.0 up to 21.0	7.0
5	Above 21.0 up to 24.0	8.0
6	Above 24.0 up to 27.0	9.0
7	Above 27.0 up to 30.0	10.0
8	Above 30.0 up to 35.0	11.0
9	Above 35.0 up to 40.0	12.0
10	Above 40.0 up to 45.0	13.0
11	Above 45.0 up to 50.0	14.0
12	Above 50.0	16.0

iii. For residential sites up to 120 sq. m ;

- a) Open staircase shall be permitted in the side setbacks, but there shall be a minimum open space of 0.50 m from the side boundary and 1.0 m from the front and rear boundary of the site.
- b) Toilets minimum of 1 m x 1.5 m and not exceeding 1.4 percent of the plot area permissible in rear set back only;
- c) Front and rear setbacks must be as per Table-1 and side setbacks as per Table-2 subject to the limitations of coverage vide as per Table -4
- d) Ground + one floor may be permitted irrespective of permissible FAR on buildings exists before this zoning regulation comes into force;
- e) Steps may be permitted within the setback portion of sites of 9x12 Mts. ( 108sq.mt) and 6x9 m (54 sq m);

- f) When minimum set back of 1.5 m is left on the right side, a scooter garage may be permitted at the back side limiting the depth of the garage to 3.0 m;

**Table -4**

**Maximum Plot Coverage, Floor Area Ratio, Number of Floors, For Different Site Areas, And Road Widths for Residential Buildings.**

**Intensively developed area**

Plot area in sq m	Max. Plot coverage	F.A.R	Max. No. of floors	Max. height in Mts.	Road width in Mts.
Up to 120	80%	1.25	G+1	7	Up to 6
Over 120 Up to 240	75%	1.25	G+1	7	Over 9
Over 240 Up to 500	70%	1.25	G+2	11	Over 12
Over 500 Up to 750	65%	1.50	G+2	11	Over 12
Over 750 Up to 1000	65%	1.50	G+3	15	Over 15
Over 1000	60%	1.75	G+3	15	Over 15

**Other Areas**

Plot area in sq m	Max. Plot coverage	F.A.R	Max. No. of floors	Max. height in Mts.	Road width in Mts.
Up to 120	65%	1.00	G+1	7	Up to 6
Over 120 Up to 240	60%	1.00	G+1	7	Over 9
Over 240 Up to 500	55%	1.25	G+2	11	Over 12
Over 500 Up to 750	50%	1.50	G+2	11	Over 12
Over 750 Up to 1000	50%	1.75	G+3	15	Over 15
Over 1000	45%	2.00	G+4	17	Over 15

**Note:**

- ❖ Road width up to 6 meters (including drains and footpath) may be considered in sites/layouts, which have come up before these zoning regulations have come into force.
- ❖ For plot area up to 240 sq. m if road width is more than 9 meters ground plus two floors may be permitted but coverage shall be 70 percent.
- ❖ The list of items which are excluded from the computation of FAR is as given in the Table – 5.

**Table – 5**  
**Construction excluded from FAR computation**

The following constructions are excluded from FAR computation:

1. Car parking
2. Lift floor area in all the floors
3. Architectural features
4. Chimneys
5. Overhead tanks with its headroom not exceeding 1.5 m
6. Fire escape staircase
7. Garbage shaft
8. Staircase floor area in all the floors
9. Escalators, ducts, main sanitary duct, opening balcony, machine rooms.
10. For the following constructions 10% of the total floor area in all the floors is excluded from the computation of FAR. (Floor area in excess of the 10% would be taken for computation of FAR)
  - I) Meter room
  - II) Air-conditioning plant
  - III) Electric sub-station
  - IV) Pump room
  - V) Service ducts
  - VI) Generator room
  - VII) Watchman's booth
  - VIII) Lumber room
  - IX) Swimming Pool at any floor
  - X) Corridor
  - XI) Effluent treatment plant, parking under a building on stilts or in a basement or cellar floors.

## Group Housing

### Approval of Group Housing Project

The following norms shall be adopted while approving building plans for group housing;

1. The minimum area is 750 sq. m.
2. The approach road to a group housing project must have a minimum width of 12 m;
3. The layout plan showing the general arrangement of residential building blocks, and dimensions of the plots earmarked for each building block, access roads, parks, open spaces and civic amenity areas, shall be obtained prior to according approval to the building plan;
4. Set backs should be provided with reference to the depth and width of total plot area;
5. The floor area ratio (FAR) shall be with reference to the width of the public road abutting the property and the FAR shall be calculated for the net area of the plot as prescribed in Table - 6 after deducting the area reserved for the roads, parks, open spaces and civic amenities, etc. in the plot;
6. The coverage shall be with reference to the net area of the plot as prescribed in Table - 6 after deducting the area reserved for roads, parks, open spaces and civic amenities, etc. in the plot;
7. The distance between any two buildings shall not be less than half of the height of the taller building. 10% of the total area be reserved for civic amenities and open spaces.

**Table – 6**

**Maximum plot coverage, FAR, minimum setbacks and minimum road width for group housing.**

Plot area	Minimum road width in m	Maximum Plot coverage	Maximum FAR	Minimum setbacks in meters			
				Front	Rear	Left	Right
750sq.m- 0.40 ha	12	60%	2.00	5.0	4.5	4.5	5.0
Between 0.40 and 0.80 ha	15	60%	2.25	8.0	6.0	6.0	6.0
Above 0.80 ha	18	60%	2.50	9.0	8.0	8.0	8.0

**Note:**

1. Group housing are connected by an access of not less than 3.5 m in width, if they are not approachable directly from the existing roads.
2. In case, the height of group housing building exceeds 10.0 m, then setback to be left around the premises shall be as per Table –3.

**TABLE – 7**  
**Semi-detached houses**  
**(Back to back or side to side)**

01.	Minimum combined area of the neighboring plots	140 sq m
02.	Building coverage	As applicable to individual plots
03.	Floor area ratio	
04.	Maximum number of floors	
05.	Minimum road width	
06.	Front set back for back to back plots	Shall be equal to the sum of front and rear set backs of individual plots.
07.	Side set backs for plots joined at the side.	On a plot on which a semi-detached building is proposed, the side set back for each unit shall be the total of the left and right set backs to be left in case of individual plots.

**TABLE – 8**  
**Row Housing (Maximum 12 units, minimum 3 units)**

1	Minimum combined area of plot	210 sq m
	Maximum area of each plot	108 sq m
3	Building coverage	As applicable to individual plots
4	Floor area ratio	
5	Number of floors	
6	Minimum road width	
7	Set backs minimum	<b>Front</b> : 2.00 m <b>Rear</b> : 1.50 m <b>Side</b> : 2.00 m only for end units

**TABLE -9****Set Backs for Commercial Buildings****a. Intensively Areas**

Sl. No.	Plot area in sq m	Set backs in meters			
		Front	Rear	Left	Right
1	Up to 240	1.00	--	--	--
2	Over 240 up to 500	2.50	1.00	--	1.00
3	Over 500 up to 750	3.00	1.00	1.00	1.50
4	Over 750 up to 1000	5.00	2.00	1.50	2.00
5	Over 1000	7.00	3.00	3.00	3.50

**b. Other Areas**

Sl. No.	Plot area in sq m	Set backs in meters			
		Front	Rear	Left	Right
1	Up to 240	2.00	1.00	--	1.00
2	Over 240 up to 500	3.00	2.00	1.00	1.00
3	Over 500 up to 750	4.50	2.00	1.00	3.50
4	Over 750 up to 1000	6.00	3.00	2.00	3.50
5	Over 1000	8.00	4.00	3.00	3.50

**TABLE – 10****Maximum plot coverage, floor area ratio and number of floors for different site areas, and road widths for commercial buildings.****a. Intensively Areas**

Plot area in sq. m	Max. plot coverage	F.A.R.	Max. No. of floors	Max. height in m	Minimum road widths in m
Up to 240	80%	1.25	1+1	7	Up to 6
Over 240 up to 500	75%	1.25	1+1	11	Over 9
Over 500 up to 750	70%	1.50	1+2	11	Over 12
Over 750 up to 1000	60%	1.50	1+3	14	Over 15
Over 1000	55%	2.00	1+4*	17	Over 15+

**b. Other Areas**

Plot area in sq. m	Max. plot coverage	F.A.R.	Max. No. of floors	Max. height in m	Minimum road widths in m
Up to 240	75%	1.25	1+1	11	Up to 9
Over 240 up to 500	60%	1.50	1+2	14	Over 9 upto 12
Over 500 up to 750	55%	1.75	1+3	14	Over 12 upto 15
Over 750 up to 1000	50%	1.75	1+4	17	Over 15 upto 18
Over 1000	45%	2.00	1+5	17	Over 18

**NOTE:**

The following shall be considered while enforcing the set backs of all types of building:

1. The front and rear set backs shall be with reference to depth of the site.
2. Left and right set backs shall be with reference to width of the site.
3. No side set backs shall be insisted upon only in the case of reconstruction of existing building where traditional row housing type of development exists and in areas specifically provided under the byelaws.
4. The provision of set backs should be read with tables prescribed for floor area ratio, coverage etc., for different type of buildings.
5. When the building lines are fixed, the front set back shall not be less than the building line fixed or the minimum front set back prescribed whichever is higher.
6. In the case of corner sites both the sides facing the road shall be treated as front side and regulations applied accordingly to maintain the building line on these two roads and to provide better visibility.
7. In case where the building line is not parallel to the property line, the front and rear set backs shall not be less than the specified set backs at any point.
8. In case of building sanctioned prior to coming into force of these regulations which are abutting other properties on one, two or more sides, upper floors may be permitted by obtaining no objection certificates from the adjoining property owners or even without no objection certificates if the adjoining owner himself has put up such abutting floors provided that not less than  $\frac{1}{4}$  of the area is left as vacant space, open to sky, if the existing building is retained.
9. If the existing building is constructed or sanctioned prior to coming into force of these regulations, upper floors may be permitted subject to limits of maximum floor area ratio without referring to any other conditions.

10. In case of irregular plots set backs are to be calculated according to the depth or width at the points where the depth or width are varying. In such cases, average set backs should not be fixed as they may effect minimum set back at any point.
11. Set backs should be provided in the owners plot, public open space or conservancy lanes adjoining the plot should not be considered as setbacks.
12. In case of sites facing roads both in front and rear, both the sides facing roads should be treated as front and other two sides not facing roads should be treated as right and the set backs be applied accordingly.
13. The left and right set backs may be interchanged by the authority in exceptional cases due to existing structures like; open well and also considering the topography of the land.
14. **High rise buildings:** - Buildings with more than four floors i.e. ground floor plus three floors and above shall be considered as high rise buildings.
15. When sites face roads of lesser width than the one noted against them. Floor area ratio and maximum number of floor applicable to corresponding widths of roads only shall apply.
16. When site faces wider road than the one prescribed against it, the FAR shall be restricted only to the limit prescribed for the area of that particular site.
17. When coverage is less than the maximum prescribed, more number of floors and height may be permitted to utilise the full F.A.R.
18. The set backs and coverage are irrespective of road width.
19. The height of the buildings coming within the landing and takeoff zones of aircraft in the vicinity of aerodrome should not exceed the height shown in the Table-17 on 'height' limitation in the vicinity of Airports.
20. Minimum depth or width of a site for high-rise building shall be 21m.
21. Lifts: Lifts shall have to be provided for buildings with more than ground plus three floors.
22. **Parking space:** Adequate space for car parking shall be provided in the premises as per standards in Table-16.
23. **Ramp:** Ramp shall be provided with a minimum width of 3.5m and slope of not more than 1 in 10.



24. **Water supply:** Bore well shall be provided in all high rise buildings to provide alternative source of water supply where the Karnataka Urban Water Supply and Drainage Board so desires and the strata is capable of yielding water.
25. **Height of building:** In the reckoning of height of buildings, headroom, lift room, water tanks on terrace, pent house may be excluded.
26. **Corridor:** The minimum width of corridor for different building or type is as given in the Table 11.
27. Rainwater harvesting is compulsory in ground plus 2 floors and above buildings. The plans for rainwater harvesting should be got approved at the time of approval of building plans.
28. In case of commercial buildings or shopping centres and residential apartments, provision should be made for fire safety measures in accordance with the requirement as stipulated by Fire Force Authorities, before issue of occupancy certificate.

**TABLE – 11**

Sl. No.	Building use or type	Minimum width of the corridor in meters
1	Residential building	1.0
2	Assembly buildings such as auditorium, Kalyana Mantapas, cinema theatre, religious building, temple, mosque or church and other buildings of public assembly or conference.	2.0
3	Institutional buildings such as:	
a)	Government office	2.0
b)	Government Hospitals	2.4
c)	Educational Buildings such as Schools, Colleges, Research Institutions.	2.0
d)	Commercial buildings such as private office, nursing homes, lodges, etc.	2.0
e)	All other buildings	1.5

## **GARAGES**

1. For the buildings up to a height of 9.50 m, one garage may be permitted in the rear right hand corner of the plot without side and rear set backs, if the following requirements are fulfilled.
2. Height of the garage does not exceed 3.00 m from the ground level;
3. Not more than one upper floor is proposed over such a garage;
4. Height of the garage and the upper floor, if any, is limited to 6.50 m from the ground level;
5. No openings are provided in the garage and its upper floor towards the neighbouring buildings;
6. No other structures except one lumber room and a stair case are provided in the rear side of the garage;
7. Depth of the lumber room does not exceed 1.25 m;
8. Length of the garage including the lumber room and stair case does not exceed one third of the length of the site or 6.00 m, whichever is less;
9. Width of the garage does not exceed 4.00m;
10. In the case of corner plots, the garage is located at the rear corner diagonally opposite to the road intersection.
11. In cases of buildings constructed or sanctioned prior to the enforcement of these regulations, where space is not available on the right side, it may be permitted on the left side provided minimum set back exists in the adjoining property of the left side.
12. The garages shall not be constructed or reconstructed within 4.5 metres from road edge. This may be relaxed in cases where the garage forms part of the main building with minimum set back for that plot.
13. For cinema theatres the set backs and other provision shall be as per the Karnataka Cinematography Act and Rules.
14. In case of two or more buildings, proposed on a single site, the set backs shall be applied as they are on single common site.
15. In case of 'High-Rise buildings' i.e., building with Ground Floor plus four floors and above, the minimum set back all round the building shall be read with Table-3 and Group Housing Table.

16. For high-rise buildings, N.O.C.s from B.W.S.S.B., K.E.B., Fire Force, National Airport authorities and Telecommunication Department, shall be furnished.
17. For group housing with Ground+3 floors or below, N.O.C.s from B.W.S.S.B. and K.E.B. only be furnished, if the site area exceeds 4000 sq. m.

## APPLICATION OF LAND USE

The land use indicated towards the road side of a property shall be the land use for the entire property (one property depth) without identifying it for different uses by measuring as per the scale of the maps.

Different uses permitted in a given zone may be allowed in different floors of the building. In such cases, the regulations applicable to the use of the ground floor of the building shall apply to the entire building. When mixed land uses are permitted in the ground floor, the predominant use among them shall be considered as the use of the ground floor.

## EXEMPTIONS IN OPEN SPACE

The following exemptions in open space shall be permitted

1. **Cantilever Portico:** A cantilever portico of 3.0 m width (maximum) and 4.5 m length (maximum) may be permitted in the ground floor within the side set back. No access is permitted to the top of the portico for using it as a sit out. Height of the portico shall not be less than two metres from the plinth level. The portico when allowed shall have a clear open space of one meter from the boundary of the property.
2. **Balcony:** The projection of the balcony shall be measured perpendicular to the building up to the outermost edge of the balcony. Cantilever projection of the balcony shall be permitted not exceeding 1/3 of the setback subject to a maximum of 1.1 m in the first floor and 1.75 m in and above the second floor. No balcony is allowed at the ground floor level. The length of the balcony shall be limited to 1/3 of the length of each side of the building.
3. **Cross wall:** A cross wall connecting the building and the boundary wall may be permitted limiting the height of such wall of 1.5 m.
4. **Height limitation:** The height of the building shall be governed by the limitation of the FAR, coverage, setbacks and the width of the street facing the plot as stipulated in the respective tables.

If a building abuts two or more streets of different widths, then the height of the building shall be regulated according to the width of the wider road.

5. **Height exception for the structures on roof:** water tanks and their supports, lift rooms, roof structures like staircase room, pent house, chimneys, parapet walls and other architectural features shall not be included in the height of the building.

6. **Basement floor:** Basement floor shall not be used for purposes other than parking and for locating machines used for service and utilities of buildings.

If the plinth of the ground floor of the building is constructed leaving more set back than the minimum prescribed, the basement floor may extend beyond this plinth but no part of the set backs shall be used for basement.

In case of parking in basement floor, exclusively used for parking purpose projection up to a maximum of 2 m from the edge of the boundary to the site in question may be allowed in case if building are not already existing on the adjacent sites. However in case buildings on adjacent sites already exist, the following rules are to be followed.

If the adjacent buildings also have a basement floor, a minimum of 2mts. From the intended basement projection of the proposed building to the property boundary plus a minimum of 2mts. Form the property boundary to the projected basement of the adjacent building is to be left.

In case, the adjacent buildings do not have a basement floor, a minimum of 2mts. from the intended basement projection of the proposed building to the property boundary, plus a minimum of 2mts. From the setback boundary of the adjacent building is to be left.

In every case soil testing and adjacent building foundation has to be checked for the structural stability of the proposed building and existing building. A certificate to the effect has to be submitted along with the plans.

Every basement story shall be at least 2.4 m in height from the floor to the bottom of the roof slab / beam / ceiling (whichever is less) and this height of basement floor shall not exceed 2.75 m.

The basement story should not project more than 1.00 m above the average ground level. One additional basement (two) for all buildings exceeding five floors may be permitted for parking and machines used for service and utilities of the building.

The maximum of three basements in case of three Stars and above Hotels be permitted for parking and machines used for service and utilities.

### **MEZZANINE FLOOR:**

- I) Not more than one mezzanine floor shall be permissible in a building
- II) A mezzanine floor shall be accessible only from its lower floor
- III) It shall be considered for after calculations.

Minimum size of mezzanine floor if it is used as a living room shall be 9.5 sq m.

## **DISTANCE OF BUILDING FROM ELECTRICAL LINES**

No building shall be erected below an electrical line, as well as within the horizontal distance from the electrical line indicated in the Table-12. The vertical distance below the level of the electrical line and the topmost surface of the building corresponding to the minimum horizontal distance shall be as indicated in Table-12. The minimum vertical clearance is not applicable if the horizontal distance exceeds the minimum prescribed.

**TABLE – 12**  
**Distance of buildings from electrical lines**

Sl. No.	Electrical lines	Vertical clearance in m	Horizontal clearance in m
1	Low and medium voltage line service lines up to 11 KV	2.5	1.2
2	High voltage lines up to and including 11 KV	3.7	1.2
3	High voltage line above 11 and up to and including 33 KV	3.7	2.0

**Set back for high rise building:** (ground floor plus four floors and above) The minimum set back all-round for any high rise building shall be 4.5 m to enable the movement of fire engine and this shall be enforced irrespective of the minimum set backs prescribed in Table-1, 2 and 3.

In any commercial complex/neighborhood shops toilet block shall be provided compulsorily. The toilet shall be of 2 to 3 percent minimum of the total commercial area.

TABLE – 13

## Regulations for public and semi-public buildings

Minimum setbacks, maximum coverage, floor area ratio, and number of floors for different site areas, and road width for public and semi-public buildings.

Plot Area in sq m	Maximum					Minimum setbacks in m			
	Max.Plot Coverage	FAR	Max.No. of floors	Max Height in m	Road width in m	Front	Rear	Left	Right
Up to 240	70%	1.00	1+1	7	Up to 6	3.00	1.00	1.00	1.00
Over 240 Up to 500	65%	1.25	1+1	7	Over 6	3.50	1.50	1.50	1.50
Over 500 Up to 750	60%	1.50	1+2	11	Over 6	4.00	2.00	2.00	2.00
Over 750 Up to 1000	55%	1.50	1+2	11	Over 12	6.00	2.50	2.50	2.50
Over 1000	50%	1.75	1+4	16	Over 15	8.00	3.00	4.00	4.00

**Note:** Setbacks and coverage are irrespective of the road widths.

1. Floor Area Ratio and number of floors are with reference to road widths i.e. when site don't face the roads of required width, noted against each, the floor area ratio and number of floors applicable to corresponding width of roads are applicable.
2. The Note below table-10 given under the setbacks table shall be considered for public and semi-public.
3. Owner's desires of constructing the high rise buildings should plan their coverage at the ground floor so that they will eligible for the required number of stories with in the prescribed floor area ratio.
4. For plots more than 750 sq m bell mouth entrance shall be provided.

**TABLE – 14****Coverage, Floor Area Ratio and Open space for Industrial buildings**

Plot area in sq m	Max. coverage	Plot Floor area Ratio	Minimum Frontage in m.	Minimum Front setback in m	Other sides in m	Minimum Road Width In m.
Up to 230	80%	1.00	3.0	1.00	1.00	Upto 6
231 to 1000	60%	1.25	12.0	4.50	3.00	Over 6
1001 to 2000	50%	1.25	24.0	6.00	5.00	Over 9
2001 to 4000	40%	1.25	28.0	8.00	5.00	Over 12
4001 to 8000	35%	1.00	32.0	8.00	6.00	Over 15
Above 8000	30%	0.50	42.0	15.00	12.00	Over 15

**Note:** Whenever the minimum plot area is less than the one specified in the particular category the Zonal Regulation prescribed for the previous category should be adopted.

**TABLE-15****Regulations for flatted factories**

1	Minimum plot area	1000 sq. mtrs.
2	Maximum plot coverage	40%
3	F.A.R	1.50 up to 9 mtrs. road width, and 1.75 above 9 mtrs. road width.
4	Minimum set backs	a) Front 8.0 mtrs. b) Rear 4.5 mtrs. c) Sides 4.5 mtrs.

## Parking Regulations

### Parking space standards:

1. Each off-street parking space provided for motor vehicles shall not be less than (2.5 x 5.5m) 13.75 sq m area and for scooter and cycle parking spaces provided shall not be less than 2.5 sq m and 1.5 sq m respectively and it shall not be more than 25% of the car parking space leaving clear space round the building for the movement of vehicles.
2. For building of different occupancies, off-street parking spaces for vehicles shall be provided as stipulated below.
3. Space shall be provided as specified in table- 16 for parking vehicles.

**TABLE – 16**

### Off-street parking spaces

Sl. No.	Occupancy	Minimum one car parking space of 2.50 m x 5.50 m or every
1	Residential:	
	Multi-family residential	2 tenements each are having a floor area of 75 to 150 sq m Tenement exceeding 150 sq m floor areas
2	Lodging establishments, tourist homes,	8 guest rooms
3	Educational	250 sq m floor area or fraction thereof
4	Hospital Nursing homes	15 beds subject to minimum of 195 sq m 7 beds subject to a minimum of car parking space of 195 sq m
5	Assembly/Auditorium/Cinema theatre	40 seats of accommodation
6	Government or Semi public buildings	150 sq m floor area or fraction thereof
7	Retail business	100 sq m floor area or fraction thereof
8	Industrial	200 sq m floor area or fraction thereof
9	Storage	100 sq m up to 500 sq m area and every 200 sq m thereafter.
10	Kalyana Mantapa	30 sq m of auditorium floor area
11	Office building	100 sq m of floor area
12	Restaurant, establishments serving food and beverage	75 sq m of floor area
13	Hostels	15 rooms



**Note on off-street parking:**

1. Up to 150 sq m in the case of shops, parking spaces need not be insisted.
2. Off- street parking space shall be provided with adequate vehicular access to a street, and the area of drive, aisles and such other provision required for adequate maneuvering of vehicles shall be exclusive of the parking spaces stipulated in these bye-laws.
3. If the total parking spaces required by these byelaws is provided by a group of property owners for their mutual benefits, such parking spaces may be considered as meeting the off-street parking requirements under these byelaws, subject to the approval of the authority.
4. The spaces to be left for parking shall be in addition to the open spaces left out for lighting and ventilation purposes.
5. Setbacks are not to be taken as part of parking requirement. If provided a minimum of 3 m shall be left free from the building.

**AREAS OF SPECIAL CONTROL**

The historical monuments in any city reflect the past glory of the city. As they attract tourists both from inside and outside the country. While permitting developments around historical monuments, care has to be taken to see that their aesthetic environs are not affected, in order to preserve aesthetic environs around these monuments it is necessary to declare the areas surrounding these monuments as zones of special control and impose the following special regulations around these monuments.

1. Building up to and inclusive of first floor or up to a height of 7 m from ground level. Whichever is less are only permissible within a distance of 100 m distance from the boundary of the monuments.
2. Buildings up to and inclusive of second floor or up to a height of 10.5 m from ground level, whichever is less are only permissible between 100 m and 200 m distance from the boundary of the monuments.
3. Building up to and inclusive of third floor or up to a height of 14 m from ground level, whichever is less are only permissible between 200 m and 400 m distance from the boundary of the monuments.

**Note:** In any case no building shall be permitted within 400 m above the height of the declared monument.

**TABLE – 17**  
**Height restrictions near aerodromes**

Sl. No.	Limits of distance from the aerodromes point measured horizontally to building structures or installations.	Difference between the elevation of the top of the building/structure or installations and the elevation of the aerodromes (aerodrome reference point)
<b>A. International Civil Airports and their alternates:</b>		
1	Between 8534 m and 22224 m	Less than 152 m
2	Between 7315 m and 8534 m	Less than 122 m
3	Between 6096 m and 7315	Less than 91 m
4	Between 4877 m and 6096 m	Less than 61 m
5	Between 4267 m and 4877 m	Less than 49 m
6	Between 3658 m and 4267 m	Less than 37 m
7	Between 3048 m and 3658 m	Less than 24 m
8	Between 2438 m and 3048 m	Less than 12 m
9	Below 2438 m	*
<b>B. Other Civil Airports and Civil Aerodromes:</b>		
1	Between 7925 m and 22324 m	Less than 152 m
2	Between 6706 m and 7925 m	Less than 122 m
3	Between 6486 m and 6706 m	Less than 91 m
4	Between 4267 m and 6486 m	Less than 61 m
5	Between 3658 m and 4267 m	Less than 49 m
6	Between 3048 m and 3658 m	Less than 37 m
7	Between 2438 m and 3048 m	Less than 24 m
8	Between 1829 m and 2438 m	Less than 12 m
9	Below 1829	*

\*: Nil except with the prior concurrence of the local aerodrome authorities.

**Note:**

1. For Sl.No.7, 8 and 9, no trees shall be planted within the limits of the distance indicated thereto.
2. Irrespective of their distance from the aerodromes (that is behind 22224 m of the aerodrome /aerodrome reference point) no radio masts or such, similar type of line installations exceeding 152 m in height should be erected without prior permission of the concerned Civil aviation authority.
3. No buildings, structures or installations exceeding the height indicated in (A) and (B) should be permitted without prior consultation with the local aerodrome authority, and

4. The location of the slaughter houses and other areas of activities, like garbage dump which would attract high flying birds, like eagles, hawks, etc. shall not be permitted within a radius of 10 km from the Aerodrome reference point.

## **MEANS OF ACCESS**

The means of exclusive access which would be other than through public roads and streets shall not be of more than 30 m length from the existing public roads and streets. The minimum width of such access shall be 3.5 m. FAR and height of buildings coming up on such plots shall be regulated according to the width of public street or road. If the means of access exceeds 30 m in length, FAR shall be regulated with reference to the width of such access road. Construction of buildings on plots with common access / lanes from the public road / street shall be regulated according to width of such common access roads / lanes.

## **SECURITY DEPOSIT**

To ensure compliance with these regulations and directions given in the sanctioned plan and other conditions the applicant shall deposit a sum at the rate of Rs.10/- per sq m of floor area as refundable non-earning security and earnest deposit for the following categories of buildings, namely;-

1. Residential building, group housing / multi-dwellings / apartments, with three dwelling units and more;
2. Commercial buildings exceeding 200 sq m of floor area.

The security deposit shall be refunded two years after completion of the construction as per approved plan as certified by the Davangere Urban Development Authority. If the construction is not as per approved plan this deposit amount would be forfeited. The Authority will take action for removal of deviation as per law.

## SOLAR WATER HEATER REQUIREMENTS

Solar water heaters shall be provided as per the table for different categories of buildings.

**TABLE – 18**

### Solar lighting and water heater requirements

Sl. No.	Type of use	100 litres per day shall be provided for every unit
1	Restaurants service food and drinks with seating / serving area of more than 100 sq m and above.	40 sq m of seating or serving area
2	Lodging establishments and tourist homes	3 rooms
3	Hostel and guest houses	6 beds / persons capacity
4	Industrial canteens	50 workers
5	Nursing homes and hospitals	4 beds
6	Kalyana Mantapas, community hall and convention hall (with dining hall and kitchen)	30 sq m of floor area
7	Recreational clubs	100 sq m of floor area
8	Residential buildings:	
	(a) Single dwelling unit measuring 200 sq m of floor area or site area of more than 400 sq m whichever is more.	
	(b) 500 lpd for multi dwelling unit / apartments for every 5 units and multiples thereof.	
9	Solar photovoltaic lighting systems shall be installed in multi unit residential buildings (with more than five units) for lighting the set back areas, drive ways, and internal corridors.	

## SAFETY MEASURES AGAINST EARTHQUAKE IN BUILDING CONSTRUCTION

Buildings with ground plus four floors and above or buildings with a height of 15 m and above shall be designed and constructed adopting the norms prescribed in the National Building Code and in the “criteria for earthquake resistant design of structures” bearing No. IS 1893-2002 published by the Bureau of Indian Standards, making the buildings resistant to earthquake? The supervision certificate and the completion certificate of every such building shall contain a certificate recorded by the registered engineer / architect that the norms of the National Building Code and IS No.1893-2002 have been followed in the design and construction of buildings for making the buildings resistant to earthquake.

## FACILITIES FOR PHYSICALLY HANDICAPPED PERSONS

Public and semi public buildings having covered area of 300 sq m and above shall be designed and constructed to provide facilities to the physically handicapped persons as prescribed in the Schedule-IV of these Zonal Regulations.

## RAIN WATER HARVESTING

**Definition:** Rainwater harvesting means the collection and storage of falling rain on a site, a roof or any paved or unpaved area.

Recharge of ground water through percolation structures like pits and trenches or other appropriate devices or through open wells and bore wells is also defined as rainwater harvesting.

1. The following building construction submitted for the approval to the authority will have to make provision for rainwater harvesting.
  - a. Residential buildings with site area more than 100 sq. mtrs.
  - b. All commercial and non-commercial buildings.
  - c. All Institutional and Industrial buildings.

The above buildings shall have one or more water harvesting structures as detailed in Schedule –V.

2. The owner of every building shall ensure that the rainwater harvesting structure is maintained in good condition for storage of water for non-potable purposes or recharge of ground water at all times.

## SCHEDULE – IV

### Facilities for physically handicapped persons

1. These byelaws shall apply to the physically handicapped persons having the following disabilities.-
  - a. **Non-ambulatory disabilities:** Impairments that regardless of cause or manifestation, for all practical purposes, confine individuals to wheelchairs;
  - b. **Semi-ambulatory disabilities:** Impairments that cause individuals to walk difficulty or insecurity. Individuals using braces or crutches, amputees, arthritics, spastics, and those with pulmonary and cardiac ills may be sent ambulatory.
  - c. **Hearing disabilities:** Deafness or hearing handicaps that make an individual insecure in public areas because he is unable to communicate or hear warning signals.
  - d. **Sight disabilities:** Total blindness or impairments affecting sight to the extent that the individual functioning in public areas is insecure or exposed to danger.

2. **Access path / walk way:** The width of access path / walk way from plot entry and surface parking to the building entry shall not be less than 1.80 m. It shall not have a gradient exceeding 5%.
3. **Surface parking:** At least two car spaces shall be provided at surface level near entrance with maximum travel distance of 30.00 m from the building entrance.
4. **Space for wheel chair users:** Adequate space shall be kept for the free movement of wheel chairs. The standard size of wheel chairs shall be taken as 1050 mm x 750 mm the doors shall have a minimum width of 900 mm to facilitate the free movement of wheel chairs.
5. **Approval to plinth level:** At least one entrance shall have approach through a ramp. The ramp shall have a minimum width of 1.80 m with maximum gradient of 1:10
6. **Entrance landing:** Entrance landing shall be provided adjacent to ramp with the minimum dimension of 1.80 m x 2.00 m.
7. **Corridors:** The minimum width of corridors shall be 1.80 m.
8. **Staircase:** The minimum width of staircases shall be 1.50 m. The minimum number of risers on a flight shall be limited to 12. Size of treads shall not be less than 30 cm and the height of risers shall not be more than 15 cm.
9. **Lifts:**
  - i. Wherever lifts are required to be installed as per byelaws, provision of at least one lift shall be made for the wheel chair users with the following cage dimensions recommended for passenger lifts of 13 persons capacity by Bureau of Indian Standards.
    - a. Clear internal depth 1100 mm (1.10 m)
    - b. Clear internal width 2000 m (2.00 m)
    - c. Entrance door width 900 mm (0.90)
  - ii. The lift lobby shall have a minimum inside measurement of 1.80 m x 1.80 m.
10. **Toilets:** One special water closet in a set of toilets shall be provided for the use of handicapped persons with wash basin keeping in view the following provisions.-
  - I. The minimum size of toilet shall be 1.50 m x 1.75 m.
  - II. +The maximum height of the W.C. set shall be 0.50 m above the floor.
11. **Handrails:** Handrails shall be provided for ramps, staircases, lifts and toilets. The height of handrails shall be normally 800 mm above the floor level. If the building is meant for the predominant use of children, the height of handrails may be suitably altered.

11. **Guiding / Warning floor material:** The floor material to guide or to warn the visually impaired persons with a change of colour or material with conspicuously different texture and easily distinguishable from the rest of the surrounding floor materials is called guiding or warning floor material. The material with different texture shall give audible signals with sensory warning when person moves on this surface with walking stick. The guiding / warning floor material is meant to give the directional effect or warn a person at critical places. This floor material shall be provided in the following areas;

- I. The access path to the building and to the parking area;
- II. The landing lobby towards the information board, reception, lifts, staircase and toilets;
- III. At the beginning / end of walkway where there is vehicular traffic;
- IV. At the location abruptly changing in level and at the beginning / end of ramp At the entrance / exit of the building.

14. **Proper signage:** Appropriate identification of specific facilities within a building for the handicapped persons should be done with proper signage. Visually impaired persons make use of other senses such as hearing and touch to compensate for the lack of vision; where as visual signals shall benefit those with hearing disabilities.

Signs should be designed and located such that they are easily legible by using suitable letter size (not less than 20 mm size). For visually impaired persons, information board in Braille should be installed on the wall at a suitable height and it should be possible to approach them closely. To ensure safe walking there should not be any protruding sign, which creates obstruction in walking.

The symbols / illustrations should be in contrasting colors and properly illuminated so that with limited vision one may be able to differentiate amongst primary colors.

## **SCHEDULE – V**

### **Rain Water Harvesting**

All buildings having rainwater harvesting structures will adopt at least one of the systems prescribed hereunder:

- a.. If a bore well / bore wells exists on site design of rainwater harvesting structures will be made to channel and filter rooftop rainwater and recharge the bore well by leading the filtered rainwater into the bore well directly or indirectly.
- b. If an open well (whether yielding water or dry) exists on the site, rooftop rainwater will be channeled, filtered and allowed into the well appropriately to recharge the open well.
- c. If neither an open well nor a bore well exists on site then a storage structure like a sump tank or a ground level tank will be suitably constructed and placed in the setbacks mandatory for all buildings in terms of the byelaws. The storage system (closed to prevent mosquito breeding) will need to have a capacity to store filtered rainwater at the rate of 20 litres per square metre of plinth area of the ground floor of a building. In areas suitable a recharge structure like a recharge pit or a recharge well of the same capacity i.e. capable of recharging 20 litres per square metre of plinth area of the ground floor of a building can also be constructed. A 100 square metre plinth area on the ground floor of building will therefore provide for a minimum of a 2000 litre rainwater storage tank. Appropriate arrangements should be made to draw water from the rainwater tank easily for non-potable use. Appropriate arrangement should also be made to drain excess water to the storm water drain from the storage or recharge structure in case they overflow.
- d. All structures with sloping roofs shall make provision for rainwater gutters or other appropriate devices to collect and channel water to the ground to be led to the rainwater collection or recharge structure after filtering. Alternately collection on the ground in 'French drains' may also be designed.

All commercial complex, non-residential buildings, apartments and group housing shall incorporate a separate rainwater pipe, channel or drain to collect rooftop rainwater and led it into the rainwater storage or recharge structure as per design specified above. No other wastewater shall be allowed to be led to such a rainwater collection system.



## **SUB DIVISION REGULATIONS FOR RESIDENTIAL USE**

The purpose of these regulations is to guide the development of new areas in accordance with the land use plan. As long as this is done on sound planning principles with adequate space standards the future of the Town is assured. This will not necessitate costly corrective measures, which would be necessary, if sub-standard growth is allowed to take place. These sub-division regulations are confined to standards of size of plots, street widths and community facilities.

For planning purposes, the new areas proposed for development are conceived as self contained neighborhood each housing a population of 15,000 to 20,000. The lowest tier of urban complex will be 'Housing cluster' Containing a population of 750 to 1000 persons. It will have at its nucleus a nursery school with a tot lot. These housing clusters will form a residential unit, which could house a population of 4,000 to 6,000 persons around a primary school, a convenient shopping area and a small park. The next in order is the community centre at the centre of the neighborhood, which houses a population of 15,000 to 20,000.

In sanctioning the sub-division of a plot under section 17 of the Karnataka Town and Country Planning Act, 1961, the Authority shall among other things see that the following planning standards shall be followed for sub-division of plot.

### **Tree plantation**

As per forest department Specification a minimum plantation two trees has to be maintained in any given area. This plantation specification has to be followed with regard to guideline set by the forest department.

## SIZE OF PLOTS

No building plot resulting from a sub-division after these regulations come into force is smaller in size than 36 sq m in residential zone. In specific cases of sites for housing schemes for economically weaker sections, low income groups, slum clearance and Ashraya housing, the authority may relax the above condition.

**TABLE – 19**  
**Standards for roads**

Sl. No.	Streets in residential area category of streets	Minimum right of way in m
1	Cul-de-sac	9 m (maximum length 183 m with sufficient turning radius)
2	Loop street	9 m (maximum length 183 m)
3	Service road	9 m
4	Residential street:	
	a) Up to length of 500 m	9 m
	b) Above 500 m up to 1000 m	12 m
	c) Above 1000 m	15 m
5	Minor roads	9m – 12m
	Collector roads	12 m – 15m
6	Major roads (feeder streets)	15 m – 18m
7	Arterial roads	18 m – 24m
	Ring roads	30m – 45m
8	Commercial:	
	a) Retail	12 m
	b) Others	15 m
9	Industrial and Other non-residential areas	12 m

**Note:** Service lanes should be permitted only when absolutely necessary as in the case of row housing. No residential building shall be allowed to face service lanes, when permitted shall have right of way of 6 m.

**TABLE –20**  
**Civic Amenities**

Particulars	Population per unit	Area in ha.
<b>a) Educational Facilities:-</b>		
i) Nursery School ( age group 3 to 6 years)	1,000	Minimum 0.20(including play ground)
ii) Basic primary and Higher primary school (age group 6 to 14 years)	3,500 to 4,500	1.00
iii) Higher secondary school (age group 14 to 17 years)	15,000	Minimum 2.00 (including play ground)
iv) College	50,000	Minimum 3.0 to 4.0 (including play ground)
<b>b) Medical Facilities:</b>		
i) Dispensary	5,000	0.10
ii) Health Centre	20,000	0.40 (including staff quarters)
<b>c) Other facilities:</b>		
i) Post and Telegraph	10,000	0.15 (including staff quarters)
ii) Police Station	10,000	0.20
iii) Religious Building	3,000	0.10
iv) Filling Station	15,000	0.05

**Shopping facilities**

Neighborhood and convenient shopping (3,000 to 15,000 population)	3 shops per 1,000 persons	Up to 20 sq m area per shop
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**TABLE – 21****Parks play ground and open spaces**

Sl. No.	Category	Population per unit	Area in hectares
1.	Tot-lot	500	Minimum 0.50
2.	Children park	2,000	Minimum 0.20
3.	Neighbourhood play ground	1,000	Minimum 0.20
4.	Neighbourhood park	5,000	Minimum 0.80

**Areas for open spaces and civic amenities****1. Approval of Residential Layouts:**

The areas for open space and Civic Amenities while sanctioning of layout for residential purpose shall be subject to the following conditions:

- I) The area earmarked for residential sites shall be a maximum of 55% of the total extent.
- II) Balance area shall be earmarked for roads, parks, and playgrounds and civic Amenities and the area under parks and playgrounds shall not be less than 10% of the total extent.
- III) A maximum of 3% of the total area from out of the residential area may be earmarked for convenient shops on the request of the owner.
- IV) After providing for 55% of the residential area, 10% of the parks and playgrounds and roads as per planning standards, any area available for development in the layout shall be earmarked for Civic Amenities.
- V) Whenever there is a requisition for issue of commencement certificate for construction of residential buildings on unauthorized sites, which are not covered under the provisions of “Regularization of Unauthorized Construction in Urban Areas of Karnataka” the Act , but formed prior to the declaration of intention to prepare the ODP by the PA, without earmarking areas for parks, playgrounds and civic amenities, authority may collect a fee amounting to 10% of the registration value of the sites in lieu of parks and civic amenities. This shall be in addition to the fee under Section 18 of the Karnataka Town and Country Planning Act and other charges and shall be used for acquisition and development of lands earmarked for parks and playground in the ODP.

- VI) The area reserved for parks and open spaces, civic amenities and roads shall be handed over to the Authority / Local Authority free of cost through a registered relinquish deed before taking up development of the layout.

**I. Exemption for open space and civic amenities in sub-division of land.**

- I) Subject to the provisions of ODP/CDP/CDP(R) in respect of land use, proposed roads and minimum road width, whenever the total extent of land of the private residential layout for approval by the Authority is 4000 sq. m (0.40 hectares) and below, reservation of open space and civic amenities areas as per the Zoning Regulations/Sub Division Rules may be dispensed with.
- II) In lieu of this, the Authority may collect the market value of converted equivalent land as fixed by the Sub-Registrar.
- III) The value to be recovered from the land owner in lieu of open space and civic amenities shall be in addition to the fee to be collected under Section 18 of the K.T.C.P. Act, development charges and any other fees/charges prescribed by the Government from time to time.
- IV) The Authority shall deposit the amount so collected under a separate Head of Account and the amount shall be utilized only for acquisition of areas reserved as parks and open spaces in the approved ODP/CDP/CDP(R). The Authority shall, under no circumstances divert this amount for any other purposes.
- V) In case the land owner refused to pay the market value of the equivalent land in lieu of open space and civic amenity to be reserved, the Authority shall approve the Sub-Division in accordance with the provisions of prevailing Zoning Regulations and shall take possession of **such an extent of equivalent land** at free of cost from the land owner and the Authority may dispose the same through auction for the purpose decided by the Authority
- VI) These rules shall come in to force from the date of approval of ODP/CDP/CDP(R) by the Government and shall not be invoked from retrospective effect.

## II. Approval of non-residential private layouts.

a. If the private non-residential layout for approval consists of only one single unit, approval shall be given subject to the following conditions:

- I) 5% of the total extent of land shall be reserved for vehicle parking and this shall be in addition to the parking space prescribed in the Zoning Regulations as per the total floor area of the building.
- II) 10% of the total extent shall be earmarked as open space. The area reserved for vehicle parking and open space shall be maintained by the land owner and this land shall not be used for any other purpose by the land owner.
- III) The Authority shall collect the fee under section 18 of K.T.C.P. Act and development charges applicable and any other fees and charges prescribed by the Government from time to time.

b. If the private non-residential layout for approval consists of two or more number of **plots**, the following conditions shall apply:

- I) 5% of the total extent of land shall be reserved for vehicle parking and this shall be in addition to the parking space prescribed in the Zoning Regulations as per the total floor area of the building.
- II) 10% of the total extent of land shall be earmarked as open space.
- III) The area earmarked for parking and open space and roads shall be handed over to the local authority at free of cost for maintenance.
- IV) The Authority shall collect the fee under section 18 of K.T.C.P. Act and development charges and any other fees and charges prescribed by the Government from time to time.

## III. Approval of single plot for residential purpose.

Any extent of land can be approved as single plot subject to the following conditions.

- I) The land in question shall be converted for non-agricultural purpose.
- II) The land shall have access from the public road and the use of land shall be in accordance with the Zoning Regulations of the ODP/CDP/CDP(R).
- III) The necessary development charges shall be paid to the concerned UDA/Local Authority. This fee is in addition to recovery of fee under section 18 of K.T.C.P Act and other fees/charges prescribed by the Government from time to time.
- IV) If the owner of Single plot desires to sub-divide the plot at subsequent dates, he shall obtain approval by the Authority treating it as sub-division of land and the norms applies accordingly as prescribed in the Zoning Regulations.

**TABLE – 22****Building Line**

Building lines are prescribed for some important roads in Davangere city. Front setback is also prescribed separately for various types of buildings. The maximum of the setback / building line will have to be provided in the front.

Sl.No.	Road Names	Building Line in Mtr. from center of the road.
1	Mandipet Road	7.5
2	Chowkipet Road	7.5
3	Chamarajpet Road	10.5
4	B.T.Galli	6.0
5	Islam Pet	6.0
6	Vijaya Lakshmi Road	7.5
7	Mahatma Gandhi Road	7.5
8	Narasarajpet Road	7.5
9	Binny Company Road	7.5
10	. Akka Mahadevi Road up to State highway	12.0
11	CG Hospital Road up L.F.Mill	13.5
12	Nittuvalli Road	7.5
13	Jagalur Road (Krishna Rajendra Road)	21.0
14	Channagiri Road	21.0
15	Kondajji Road	15.0
16	. Kunduvada Road	15.0
17	Shammnur Road (L.F.Mill to Samudha Bhavan)	12.0
18	Ring Road	21.0
19	Poona Bangalore Road	23.0
20	Bye Pass to NH4 (four lane Road) which includes service road	75.0

**STATEMENT SHOWING THE PARTICULARS OF SURVEY  
NO'S FOR WHICH CHANGE IN LAND USE HAS BEEN  
ACCORDED BY GOVERNMENT**



**RESOLUTION PASSED BY THE AUTHORITY SHOWING THE  
PARTICULARS OF SURVEY NO'S FOR WHICH CHANGE IN LAND USE  
MADE FROM PROVISIONAL TO FINAL APPROVAL**

**ANNEXURES**