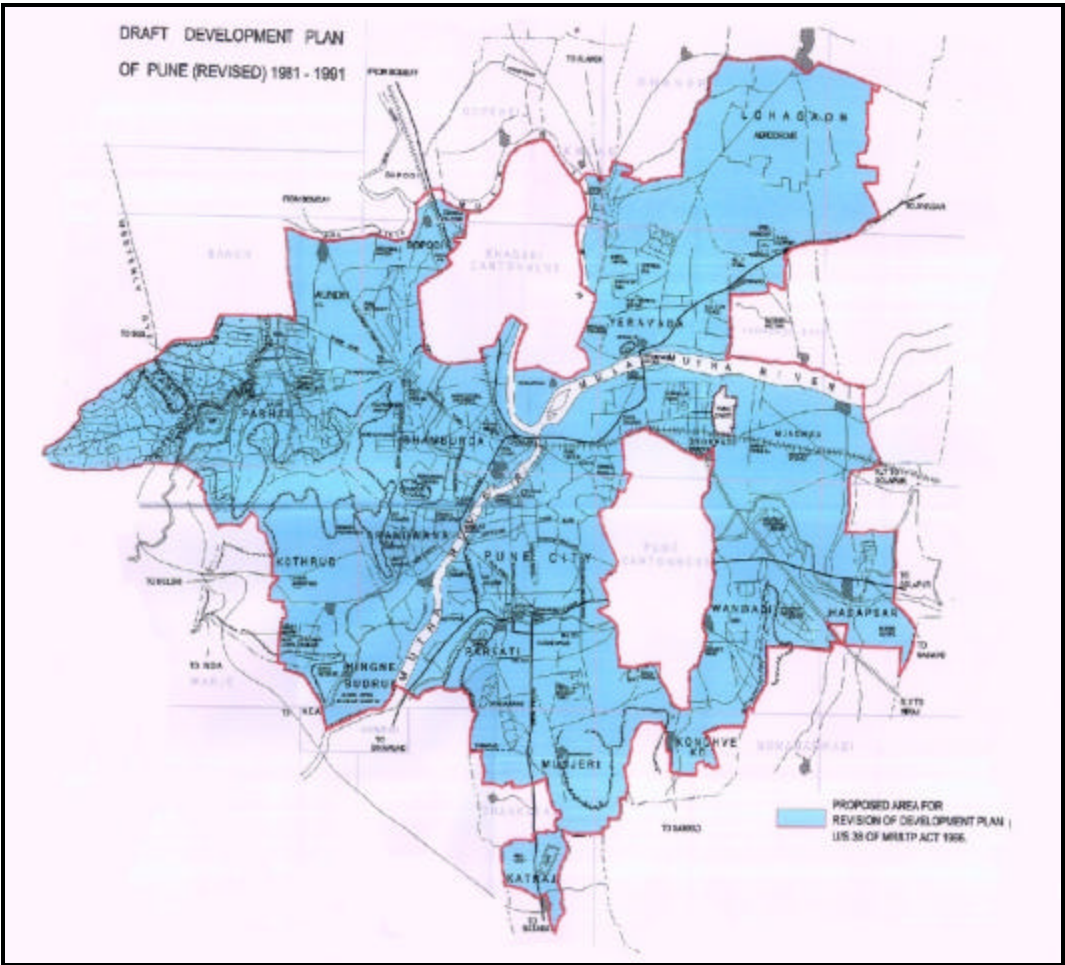


Existing Land Use Plan of Old City Limit in Pune Municipal Corporation sanctioned in revised DP of Jan 1987



Report on Existing landuse survey of old limits of Pune Municipal Corporation included in sanctioned in revised DP of Jan 1987.

1. Preamble:

The revised sanctioned DP of old limits of PMC (5th January 1987) & the sanctioned development plan of Pashan area (1992), comprising 147.58 Sq.Km., both these development plans became due for revision under the provisions of section 38 of MR&TP act 1966, on 5 January 2007.

The General Body of PMC resolved vides resolution no. 512 Dated 23/02/2007 to revise these development plans an accordingly empowered the administration to take necessary actions in this regard.

1.1 Appointment of T.P.O. under section 24 of the MR&TP Act 1966.

The above resolution empowered the administration for carrying all such duties stipulated under section 21 to 26 of MR&TP Act.1966 Accordingly the State Government, Urban Development Department has approved the appointment of Shri. P.M.Waghmare, City Engineer as the TPO for this purpose.

1.2 Preparation of existing land use map after carrying out necessary existing land use survey of said area.

The PMC appointed a steering committee to monitor and guide the administration to carry out various surveys as stipulated under section 25 read with section 22 of the MRTP Act.1966 and have finalize a performa/format for this purpose. Annexed at the end of this report. It was also decided, looking to the quantum of the work, appoint some technical agency in this regard and issue tenders accordingly. The necessary process of issue of tenders and acceptance of tenders was completed and the work of this extraneous nature was entrusted to Government College of Engineering Pune, vide work order no.6533 dated 04/02/2008.

1.3 Preparation & up gradation of base map of the said area.

As stated above, since the revised development plan was sanctioned by govt. on 5th January 1987, the base map which was prepared for that purpose in 1978-79 was taken as an incidence for this purpose. Now since a latest techniques of GIS mapping etc was considered by the Committee. In order to have the data so collected through above GIS Format should be tabulated in various layers and themes in order to get the land use survey analyzed and mapped in up to date manner.

1.4.1 The Technical Teaching staff of the College.

It may be stated here that the M.Tech. Civil and T.& C.P. course contains the preparation of the Development Plans of the Towns and Cities and in this regards the method of carrying out of E.L.U. survey is a part of the curriculum. From that point also it is seen that each student is capable of doing this work and the expertise required in this connection is available with the College as the College is having expert Professors on their visiting faculties roll in M.Tech. T & C.P. The visiting faculties were also available to check the survey data collected and rectify the same as the case may be. These faculties consist of retired Director, Joint Director, Deputy Director, and Assistant Director of Town Planning. These faculties having vast experience in preparing the Development Plans, Regional Plans, Town Planning Schemes etc. Hence, as far as the expertise and guidance is concerned the College is quite equipped in this important task.

1.4.2 Selection of Human resource/ technical enumerators for carrying out of existing land use survey on site.

The Govt. College of Engineering is the old established technical college, which conducts courses of B.Tech. & M.Tech. in Civil Engineering and Town & country planning. Necessary program of carrying out of existing land use survey was chalked out. Teams have been formed consisting of two technical persons in each team. On going through the base map it was observed that about 60-65 thousand properties are included in the said limit. According to the legal provision of preparation of existing land use map months are stipulated. Hence the college has accordingly taken step to form teams for this purpose. Actual physical survey in this regard was started from 2009.

The PMC was supplying all such technical data development permission, lay out approved by the PMC required to be embodied in the base map to show that respective property is in particular land use

1.5 Completion of physical land use survey & mapping the same through the latest computerized / AutoCAD program.

Character of the existing land uses in the city:

Pune City is a metro city and also has attained a global character during last 3 decades. Hence, the character of the existing use of the land within the limit is of varied nature. The city is not developed in conventional manner, but it consists of such users which are of different nature than the normal corporation area. In 1987 DP, this multiple character of the city as metro city has been studied. Since 1965, when the city has the influence of the Industrial development occurred around the city, outside limits in the Pimpri-Chinchwad area due to MIDC developed a large Industrial Township and where heavy industrial areas were already existing because of the industries came from 1950.

In 1987 DP, this aspect has been studied and entire data of the existing land use was collected during the process of the survey of the existing land use and mapping the same for the purposes of the different findings and conclusions obtained after the detailed analysis of the existing land use was done and mentioned in the report. The same is given below for reference purposes.

Statement of the Existing Land use for Pune city in 1978-79
(As per 1987 Development plan report)

	Landuse	% of developable area	% of total area
1	Residential	14.19	11.27
2	Commercial	2.06	1.62
3	Office	0.36	0.29
4	Industrial	2.09	1.68
5	Public-semipublic	3.51	2.76
6	Public utilities	1.35	1.08
7	Transport	14.77	11.61
8	Developable open	37.57	27.76
9	Defence	23.17	18.21
10	Agricultural	0	17.74
11	Hills and slopes	0	5.24
12	Others (nala, river)	0.93	0.74
	Total	100	100

Above broad categories of the land use as on 1978-79 survey were considered in the future planning and formulating proposed land use.

Total PMC area has been divided into six sectors. Sector I consist of old Pune city located to the south- east of Mutha river. This area is the congested part of the city and consists of old pethas and the development taken place in this area is on the lines of gaothans that is the properties are adjoining to each other and there is no side margin in between two buildings. This area is subdivided in to 24 subdivisions, for the purpose of formulating 24 teams for E.L.U. survey. Each team was given a program of visiting about 25-40 property a day. The format book along with part base map of this area was with each team. All above teams were given necessary training and demonstration with power point presentation . This training was found to be most useful.

1.5.1 As stated above the city is divided in six sectors, we have discussed about sector I. However, remaining 5 sectors are also forming the part of the total E.L.U. survey.

Sector II to VI consists of non congested area and in each sector there are 5 sub-sectors which are formulated by the College for E.L.U. survey and sending teams on site. Basically these sub-sectors are based on prominent landmarks of the areas skirted by roads or so.

There is a color code for each land use, prescribed by the Govt. The same has been followed by the College by marking the land use site and recorded in the format. annexed at end of this report. By visiting each and every property on site, the technical team has taken care to distinctly inspect the said property and identify the use and mark on base map by color pencil. This is most correct and universal system in mapping the existing land use in respective use by accepted color code and collecting the property data in prescribed format in the book. Another aspect in this method is the data of the property including whether built-up or open is recorded as well as mapped. According to the latest GIS technique there are different layers numbering 17 which can be available for verification by simple clicking. This is the improvement in the preparation of DP and carrying out various surveys and determining the each user whether built-up, on each floor or vacant and also which user is predominant etc. In the earlier method, this type of user was to be shown on different base maps and connecting each land use in integration manner. Hence, this is the difference between earlier revised sanctioned DP (1987) and the methodology used presently in the second revision of the RDP(1987) in carrying out the E.L.U. (2009-2010).

The five sectors which are on all sides of the old core city, is the linear expansion of the city, during last 5 decades. Enclosed part plans of six sectors will give idea, how the city is existing and developed. The city consists of important water bodies of two rivers, viz. Mula-Mutha, right bank canal, Pashan Tank and major nalas flowing from various parts and finally meeting the rivers. City is also having hills-hilltops in the western and southern part. In the eastern part, small hill protrudes from southern side up to Ram Tekadi to the south of the Solapur rail and road corridor. These natural features are very important from the point of recording and mapping. These features carry environmental importance and from this point, this E.L.U. survey is very important.

1.5.2

The city also consists of few buildings of historical, architectural and heritage importance. The PMC has already prepared the list of the heritage buildings/structures and the Govt. has appointed the Heritage Committee to look into its development and control the same. The list of such heritage buildings/structures has been supplied by the PMC to be distinctly marked and shown in the E.L.U. survey. City is rich in this aspect.

1.5.3

The City is also the Head Quarter of the Southern Command. Even though, there is Pune Cantonment Board, which has got separate limit under their control, however some of the Defence users are in PMC limit. Actually the user is contiguous one, but partly in

PMC limit. Hence the care has been taken to distinguish the same categorically and then mark in the respective land in the PMC limit. Therefore it is recorded on the format book as also on the map. In the earlier DP of 1987, same method has been adopted. It is also observed that on some of the land there are residential quarters, firing ranges, testing grounds, Airport, Research Organizations etc. Even though the category is defense, but the users are different as mentioned above. Some portion of the lands forms part of the strategic users and required to be kept in semi-confidential nature. All these matters are very important from the E.L.U. survey point. In the sanctioned Regional Plan of 1976 and 1997, general policy has been adopted by the Govt. that when the Defence use was started, the same was on the outskirts of the city development. However when the city developed very fast since, 1950-1960 the development went beyond the then defence lands and therefore the mixed development occurred, it has to be shown and recorded accordingly. All these things have been done with great care. Though the E.L.U. survey/map is not according to ownership, it is as per use of the land, the defense user is a priority user than all other users shown in the DP. The Defense Dept. is also bound by the Development Control Regulations in this respect; the operational users are somewhat different than the normal civil users.

1.5.4

The City also contains Central Govt. Organizations and these are on the land either acquired or it is right from inception under their ownership. For example, the NCL is on the large stretch of land duly acquired at Pashan. Same is the case of ARDE, R and D at Pashan and on Alandi road. Their categorization has been considered distinctly within the ambit of the prescribed color code on the map and beside; it is recorded on the format.

1.5.5

The city has also few industrial areas earmarked in DP right from 1966 and that the industries have also come up on these lands, these have been marked distinctly on the map and also recorded in the E.L.U. format. It is also mentioned here that in order to promote socio-economic development in Pune City, the PMC thought that the development needs the location of industries in the city. Hence considering this aspect, PMC acquired some area at Hadapsar on Pune-Solapur road and developed this area into Hadapsar Industrial Estate in which Large Scale Industries like Indian Hume Pipe, Kirloskar Pneumatic etc. have come up on this estate and it has generated the jobs to help grow the people to find their survival. This area at that time was so selected which was lying at leeward in the eastern part of the city limit where there was no urban development and also this area was beyond Pune Cantonment limit. Taking advantage of this fact, another area beyond railway line near Ram Tekadi was also proposed to be developed as the Industrial T.P.Scheme No. 2 and accordingly this area with the help of Maratha Chamber has been finalized for the development of the small scale industry, which process is going on, hence this is the history of the location of the industrial areas in the PMC limit in the eastern part. Few such industrial pockets also were earmarked in the 1952 Master Plan in Erandawana – Kothrud area, where in there was residential development at that time. For example, Kirloskar Cummins at Kothrud and Kirloskar Kisan on the Karve Road, Dewal Industry, Ayurved Rasashala on Karve Road. Few such pocket plots got developed as small scale industries in between the residential zone. Considering such occurrence of the development taken place due to the earlier zoning of the land pockets in between the residential zone and that it is not desirable to have such type of industrial pockets in the form of the non-conforming zone, to change this situation a policy note in the 1987 DP has been formulated, that if the owner desires to discontinue the industries user, and convert it in the residential use. Such changed use will naturally come on the E.L.U. survey and recorded on the map.

1.5.6 The I.T. use considered as an industry, since, its nature is software with clean industry type and there is no nuisance, pollution of this user even though it is in the residential zone. There is a policy of the Govt. to promote this user in the residential zone with higher FSI as it promotes /generates extensive jobs. Besides such users are in

regular industrial zone, these have come up in the residential zone as per above stated policy. Hence, such users have been recorded on the format and mapped accordingly.

Cultural and religious places, structures in the city.

The Pune City is historical city, residential place of Maratha Empire Lord Shri Shivachhatrapati Maharaj, it contains various such places and structures at different locations. These are shown on the base map. Its verification and mapping and recording have been done properly.

Similarly, there are religious places either on hills or on the ground, they appear on the base map and therefore have been recorded and mapped.

1.5.8 Educational, Research and University organizations/institutions in the city.

The City is known as the educational place in the State in the past. Hence, there are old educational institutions having education right from KG to College (Arts, Science, and Commerce). However, for Engineering, Poly-technique, Medical, there were only Govt Institutions, controlling the admissions and departing the Degree as per Pune University Rules. However this picture got changed after May 1983, when the Govt. changed the policy to permit unaided Colleges in the private sectors for departing Engineering and Medical Education. This policy changed the character of the city and as many as about 33 College Institutions, have come up in the private sector. About 90,000 students are taking Engineering and Medical education in the PMC limit. This aspect has created impact on the city structure; various educational building complexes have come up in the city at various places. The catchments of these colleges are not only in the city state but outside state in the country. This major landmark of the state policy has created lot of avenues in the job structure in commercial, offices and such other ancillary uses. Hence the linear growth of the city has taken place and at one time city was having walking distance/ cycling distance, which is not remained. The traffic corridors have increased with the load of cycles, two wheelers, four wheelers, city buses, school/college buses etc. have created the criss-crossing of the students, vehicles and school/college buses including commercial vehicles. We can see that if this student community is dominating the city traffic and the parking of the vehicles, all these aspects warrants the attention of the E.L.U. survey. Besides this the normal strength of the students, taking education from KG, to Secondary accounts to 8 to 9 lakhs Hence total student population almost is 1/3rd of the total population of the city structure. Similarly, supporting population on accounts of the students is also about 3 to 4 lakhs. Therefore impact of this activity on the housing, hostels, shops, Hotels, Restaurants etc. reflects in the city to account this on the E.L.U. survey of the properties, footprints etc. This aspect is naturally covered in the base map and therefore accounted in the format and on the map.

1.5.9 Recreational places, playgrounds, play fields, gardens, parks, tracks etc.

Prior to constitution of Pune Municipal Corporation in Feb. 1950, there were Municipalities existing for the city, viz, (1) Pune city municipality and (2) Pune Suburban Municipality. Under the provisions of the Bombay Town Planning Act 1915, The Pune Suburban Municipality has prepared 8 Town Planning Schemes. The Scheme layout includes the road network, recreational places, parks, gardens, play grounds, civic amenities like schools, dispensaries, nursing homes etc. In each scheme such places in the form of the reservations have been shown and all these sites have been vested with the Pune Suburban Municipality and as a part of the ownership of these sites transferred to the Pune Municipal Corporation what we see today the Peshwe Park, Neharu Stadium, Municipal Sports ground, Municipal Water Works at Swargate and on Sinhagad -road, Sambhaji Park, Kamla Neharu Park, Mahatma Phule Museum and PMC Offices/Press on Ghole Road, Fire Brigade at Bhavani Peth and Erandwana, Deccan

Gymkhana and PYC Grounds etc. are the sites which are available today as major amenities in City through the T P Schemes. Likewise, there are many such sites earmarked for various amenities and these sites have been vested in the PMC as owner. Hence, for this purposes, all sanctioned T P Scheme maps were studied to know exact location of these sites to be shown distinctly in the E.L.U. map and recorded in the format. This fact is most important from the E.L.U. survey and to find out the percentage at city level; from traffic point these lands attract the people movement from their residences as there are work centers.

Commercial areas in the city and also the location of A.P.M.C. Yard in the Bibewewadi area.

In the city, Budhwar Peth, Rawiwar Peth, Nana-Bhawani Peth, part of the Shukrawar Peth, Guruwar Peth etc. have been developed as the commercial areas. Particularly the Nana-Bhawani-Shukrawar Pethas were the areas where the commercial-trade and such transactions were taking place. Due to the movements of the people in this area from their residential places, it was seen that it was necessary to divide the trade-commerce into 2 parts, i.e. wholesale and retail to solve problems of the traffic congestion in the city. Therefore after the APMC Act, it was decided to setup APMC Yard in the Bibewewadi area. Entire wholesale market from Nana-Bhawani- Shukrawar Peth was shifted in the APMC Yard. Since this user has been shown on the base map due to its proper and established locations, it was found easy to carry out survey of these areas. It is necessary to have this commercial activity in the city properly accounted from survey.

Milk cattle colonies:

In city at various locations there is milch cattle colony activity. In fact in the 1987 DP, it was mentioned that the said user is non-conforming to the city as it is un-hygienic to the citizens. Hence, this user was proposed to be shifted on the outskirts of the developed area. During the period 1987 to 2007 large number of milk cattle colonies has shifted on the outskirts of the developed area. Hence this fact will naturally come out in the E.L.U. survey and it can be also revealed whether shifting has taken place of all the colonies or in part. On the basis of the E.L.U. survey and analysis and findings the matter will be clear for the purposes of the formulating the proposed land use in this respect.

Potters colony:

It is observed that the potters are scattered in the core city at few places and causes nuisance to the traffic movements. The survey will reveal whether the potters are shifted on the outskirts of the city or still they continue to be in the core city.

Dhobighat :

The Mula-Mutha rivers are passing through the city. At some places, this dhobighat activity has been found. This will appear in the E.L.U. survey can be will reveal whether they are in the locations allotted by the PMC.

Brick kilns activity:

In the 1987 DP few locations of the brick kiln zones were proposed. One of the zone was on Sinhagad Road. This zone has been modified and the residential activity has been proposed in this zone. Another zone was at Bopodi near Mula river and at Pashan. The E.L.U. survey has accounted the same and existing brick kiln users on respective lands have been shown. It will be now necessary to formulate policy whether these are non-conforming due to linear development of the further areas has taken place.

Traffic and Transportation Plan proposals considered in the E.L.U. survey:

In the sanctioned Regional Plan of 1976, there is recommendation of the preparation of the Traffic and Transportation Plan for the PMR, as the traffic conditions in the Region

are very serious and use of private vehicles is increasing and meager percentage of the Public Transport in the region, the situation is very serious.

On the basis of this recommendation, the Govt. have taken action to start a separate cell for studying the Traffic and Transportation patter, presence of the public transport system etc. This cell was under the Directorate of Town Planning, Pune, headed by the Deputy Director Of Town Planning, Traffic Expert. This cell prepared the T&T plan for the period 1975 to 2001. The proposals of this plan so far as PMC limit is concerned were embodied in the 1987 DP. Hence, the effect to implement these proposals has been given in 1987 DP, and whatever proposals are implemented these have appeared on the base map and has been surveyed accordingly and recorded in the format.

1.5.16 City Roads and Classified Roads in the city as a transportation road network.

Since the Pune City is major district place in the state and it also has rail corridor passing though it, the location alignments of the National/State highways, Express highways, Major Dist Roads and the city roads, they already appear on the map as per 1987 DP. It has happened that during 1982 till day some of the proposed DP roads, layout roads have been implemented as a part of the process of development the same have appeared on base map and also on site. Hence this aspect is very important from the point of E.L.U. survey and recording the same on the format.

2.1. Existing Land Use Survey analysis, findings and conclusions:

As stated above, the existing land use survey of the entire planning area under the old DP of 1987 and 1995 covering six sectors has been completed in all respect. Each sector has been considered as a planning unit.

We use digitized maps based on DP sheets provided by PMC. These maps were in paper format therefore we faced wrapping problems. We tried to overcome this problem to the best of our efforts. The land uses on the site of reservation are shown as vacant if they are not developed on site & found barren/open while delineating hills, the major land uses such as institutions, slums are designated, however the reservation sites in hill slope zones are shown as hill slope zone only, pertaining the topography of that land. The area under different land uses have been calculated based on these maps. The river flowing through the city area are divided and their water body area is distributed among adjacent sectors.

For the purposes of the existing land use survey, total 17 categories of land uses have been considered. Mention of these special characteristics of this metro city on par with the global character is already made in the earlier paragraphs. Hence, this survey is of special kind by itself. Normally conventional uses are typical, but this city being known as the metro city has different type of users, mixed users etc. In this E.L.U. method 17 categories have been considered which finally seen that these covers all the existing uses in the city. List of these uses is as follows:

List of land uses		
1) Residential :	10)	Agricultural,
2) Mixed use,	11)	Water bodies,
3) Fully commercial,	12)	Hill top- hill slope,
4) Public semi public,	13)	Forest,
5) Public utilities,	14)	Vacant.
6) Defense,	15)	Slum,
7) Industrial,	16)	Under construction,
8) Transport,	17)	Roads,
9) Recreation,		

SECTOR- I

All these categories have been considered in each sector i.e. planning unit. Now the sector I is considered first as it is the core developed old portion of the city, which character is congested one on par with the gaothans in each town. Against each character the land use analysis gives the percentage of each use,

On perusal of the above survey analysis it is seen that this core city consists of the pethas with road system in grid iron pattern, i.e. north-south and east-west roads and properties fronting on it accordingly. Major north-south arterial roads are 1) Road from Balgandharv Bridge in city to join Tilak Road, 2) Bajirao Road in city from Shivaji Bridge to Tilak road Abhinav College chowk to further via Sanas Statue to Saras Baug and Mitramandal Chowk, 3) Shivaji Road from Shivaji Bridge to Swargate and further to Satara Road, 4) J.N.Road from Maldhakka to APMC Yard, While Major East-west arterial city roads are 1) Kelkar Road, 2) Laxmi Road, 3) Kumthekar Road, while other roads are existing but they do not emanate from the Sambhaji Bridge.

Actual core city is mainly of a residential character city, however, the percentage is 21.41% of the total core city area. It is also noticed that in mixed use of 34.34% almost 50% is residential and other is commercial/shopping, offices etc. Hence it may be considered that the residential use is about 38 % which is the predominant use.

The old city is getting redeveloped and after redevelopment the property is partly converted into commercial. Third dominant user is Public Semi Public(PSP), this is because of the large scale educational institutions existing in the core city. Similarly, Municipal hospitals and dispensaries added to the above the PSP user accounts the 3rd ranking. Due to road network and its widening taken place during last 4 decades, this user also ranks as the 3rd on par with the commercial one. In fact as a percentage goes at city level the transportation/road network shall be up to 23.76 % which is considered as satisfactory a better situation. It is however, assumed that all the roads where the widening has been proposed has not taken place till the survey date and since this process is continuous one this desired percentage may attain during next 5 years or so.

It is observed that this core city is quite old, aging more than even 100 years or so, some of the pethas like Kasba, Somwar, Mangalwar, Rawiar, Guruwar, Bhawan, Ganesh. Ganj, Shukrawar, etc. needs redevelopment on the lines of Narayan Shanwar, Sadashiv, Shukrawar (pt), Navi. The redevelopment taken place in above 5 pethas is due to Imposition of Urban Land Ceiling Act 1976, because the developed part containing old structures and buildings do not attract the ULC provisions as the vacant land. Why the above 7 to 8 pethas could not redevelop, because the plots in these pethas are linear and having very narrow frontage as low as 10 ft. or even less. Hence in this condition only option to find out the solution of urban renewal as stipulated in the MRTTP ACT 1966, sec. 33. Urban renewal schemes could be undertaken under JNNURM Scheme. This has been proved by the studies carried out at COEP T& CP students.

Another dominating user of PSP, due to presence of old educational institutions, since 37 % population is living in the core city and school going population is about 1 lakh. Core city population of 2007 is 3.42 lakhs as estimated by the GIPE. Hence these educational institutes are necessary and this user may have to be continued in the PLU. However, it is seen that due to inadequate facility of play ground these institutions are already having their lands in the outside core city in the sector II to VI (non-congested area), the expansion of school activity has taken place in the outside core city area which can be witnessed in the E.L.U. survey of non-cong. Area. Another important aspect is the core city do not have the adequate recreational space to the tune of 10 % and what percentage is available is only 0.84 % which is very less. From the point of view of human living conditions, there is a very serious deficiency of open spaces particularly in the old city area. The development plan may have to make proposals to provide sufficient land for open spaces to the desired level even in the city area. We see the movements of the city population for this use from core city to outside city places.

Vacant land is shown as 0.65 %, hence we may have explore the possibilities to increase the percentage of the recreational area from existing one by spotting out the open vacant lands (0.65 %) for this purposes. Estimated population of the core city by 2027 by GIPE is 5.03 lakhs, hence requirement of the civic amenity and facility, utility services etc. is a matter of consideration while formulating the proposals etc.

This is mainly of the existing nalas passing through city. This nala user i.e. existing water body is very important and it has to be maintained as it is. Boundaries of these nalas are required to be properly demarcated on site with the help of City Survey Department Surveyor and City Survey Sheets. If any encroachments are found by the adjoining property owners, those should be removed. During E.L.U. survey it has been observed that there are some encroachments by the adjoining property owners, at some places the retaining walls are broken, the city drain sewer line are let out in the nala. This situation is most unhygienic. Few slums are nearby these nalas, where the nala width is reduced and due to over flooding of the rain water the nalas are also over flooded. Particularly the Nagazari Nala is almost flowing through the central part of the city. Part of this nala has been trained in the TP Scheme No. III near Timber Market, Ramoshi Gate area. However, entire stretch of this nala till it joins to Mutha River near Kumbharwada, whole look of this ugly and unhygienic. Since, there is slum at some location along this nala, at that place, proper planning of the nala may have to be done during revision of the RDP(1987). In the REVISED DEVELOPMENT PLAN report of 1987, separate chapter for Environmental Planning is there. In this chapter the River, Improvement scheme, Nala canalization and improvement schemes have been mentioned along with the model sketches shown thereof.

One thing is sure that Nalas derive a main corridor for storm water flowing and act as the tributaries of the Mutha River. This function is disturbed due to debris dumped in the nala land and encroachments done. This needs to be stopped and clear passage to water flow maintained.

Problem of parking in the city.

During E.L.U. survey it has been observed that almost all the roads and by-lanes are full of parking of the four/two wheeler private vehicles. This result to make available the actual width for traffic movements, very less. Also results congestion of the vehicles and delay in reaching the destination. It is also seen that these vehicles are parked for whole night. Hence the road land is directly encroached upon. This is a severe problem in the core city. Solution for this has to be formulated at the time of formulating proposals of the RRDP.

Existing Road Pattern in the city:

As mentioned above the core city is a grid-iron pattern type urban development. The city further expanded outside the core limit in all directions. Hence the main destinations like Pune Railway Stations, S.T.Stand, Govt. Offices at Central Building, Collector Office, Camp area etc. have to be reached by crossing through the city roads. This problem of crises crossing the city has to be stopped while making traffic proposals so as to make available the outer roads for these purposes. This traffic pattern has to be changed and inner ring road proposed in the 1987 DP has to be improved with further widening shown to it from 45 meter to 60 meter. In case of other city roads, earlier widening proposed is on the way of implementation. However, due to increase in the two wheelers and four wheelers the situation is very severe. Hence all these roads need to be proposed with further widening by 10 feet to each road for the increased traffic conditions. Even though this general concept of proposing widening is not possible at this stage as the city is undergoing redevelopment at private sector level and whatever new buildings are coming up are on the basis of the widening proposed in 1966 DP and

1987 DP. In view of the trend of fast redevelopment in future this widening will come up in operation, but this decision is necessary at this stage.

Existing population estimated future population, the density pattern observed as on today and future as on 2027. This core sector-I admeasures 5541700 sq.m. i.e.554.17 ha. The population existing as on 2007 is 3.42 lakhs (GIPE), for 2027 estimated as 5.03 lakhs. The population/tenement density in the core city is therefore for 2007 is 618 persons per ha./124 tenements per ha., while the same at 2027 will be 908 persons per ha./ 182 tenements per ha. Permissible tenement density in core sector is 250 tenement per ha. i.e. 1250 persons per ha. If this trend of redevelopment in the city continues in future the city would attain congestion and traffic movements would be beyond control and sustainability would be over from education, recreation, services, road network point of view. This aspect needs to be considered at the time of formulating the proposals.

It would be necessary to reshape planning approach to all the important problems of the city during its planning process by preparation of meaningful development plan on the basis of major findings of the survey of existing land use highlighted in this report for the entire planning area as also for different planning sectors.

3 SECTOR II

3.1 This is because from this sector there is entry to the southern part of the Pune District and further to the Satara-Kolhapur-Bangalore etc. National Highway No.4 passes through the sector and the development is flanked with on both the side. On eastern side the Bibawewadi village-gaothan is located, while to the west the Parvati gaothan is located. Parvati village starts from Rajaram Bridge on Sinhagad Road up to Swargate and NH 4 and further up to Dhankwadi and Katraj Village . Bibewewadi Village is adjoining to the Parvati and hence, it is continuous entity for planning and elu survey. Entire sector is sub-divided into 5 sub-sectors i. e. Sec.II-A to II-E for the purposes of the elu survey on the basis of the important landmarks i.e. NH, City roads. Existing hills are skirting this sectors in both the sides' i.e western side and in eastern side, which is distinctly marked on the basemap. Western side hill is known as parvati – Taljai hill , while Eastern side hill is known as Bibewadi hill. There are few major nalas emanating from hill range and flows towards the north to meet the Mutha river. Ambil Odha and Nagzari Nala are these 2 major nalas. All other small nalas are part of these two main nalas and according to the natural geography-topography of this sector, there is a general slope from south to north. If we consider the Satara Road as Parwati the centre point, western side hill known as Parvati Taljai derives the slope towards east and north, same is the case of the Bibawewadi Hill, which derives the slope towards the west and north. Development taken place in the sector has not disturbed the contour nor it has been cut across to make in road alignments etc. After Panshet floods most of the rehabilitation of the flood affected persons has been done in this area at Senadutta Peth, Rajendra Nagar, Lokmanya Nagar, Sahakar Nagar, Padmawati, Laxmi nagar, Parwati Darshan, Maharshi Nagar etc. Besides this PMC has also done slum rehabilitation schemes in Upper and Lower Indira Nagar at Bibawewadi area on the acquired lands for this purpose through 1987 DP reservation.

3.2 Natural Features:

Since, presence of the hills in this sector, PMC water works along with the hill service reservoirs are existing in Parvati Hill and Bibawewadi Hill. Water purification plants at Sinhagad road, and Swargate. are existing. Percentage of this HTHS observed during elu survey is 7.24%. This percentage is required to be maintained as it is and no construction on the HTHS is permissible which slope is steeper than the 1:5. Hence as there is tendency of the people to go on the Parvati Hill for recreation purposes it is observed also that this trend would continue in future, also such facilities are also

required to be made available on the Bibawewadi hills together with environmental improvements and protection of the hills from any unauthorized development. Hence, the deficiency of the existing recreational user observed in this sector would be met which starts from Rajaram Bridge on Singhgad Road to Salisbury park touching the Pune Cantonment Board limit. Generally the development occurred in this area is planned and orderly development because of the TP Scheme proposals and the layouts of the lands approved by the PMC on the basis of the proposals of the 1st sanctioned DP of 1987.

3.4 . Development of slum

At some places however, slums are developed and it also constitutes major aspect of the development. Percentage of the slums in ELU survey is 4.90%. It is assumed that since, the SRA Act is applicable in PMC area and that the slums are to be redeveloped as per plans and norms prescribed under these schemes. These schemes would improve the living conditions of the slum Population at large.

3.5 . Educational and health Institute, APMC , Industrial use.

In part of the Dhankawadi and Katraj area, development has taken place according to the layouts approved. This area consists of major educational institutions like Shahu College, Maharashtra Vyayam Mandal, college Pune Vidyarthi Griha, Bharati Vidyapith at Katraj etc. Large complex of ESI hospital is also existing in Bibewewadi area. PSP is 8.22%. Another important feature which attracts large trips in commercial user due to presence of APMC Yard to the east of the Satara Road. Timber Market in Bhawani Peth, Few commercial uses are on Satara Road on both sides, this use is 4.54%. Co-operative Industrial Estates on Satara Road and at Gultekadi are existing. Besides few industrial uses are in the form of pockets on Sinhgad and Satara Road are existing. The elu survey percentage observed is 0.84% which is quite proper and tolerable in this sector. Hence such percentage should non-conceivable by the population in the sector. Another important point is that due to the note mentioned in the Govt. Gazette that if the owner wants to convert this industrial users into residential use, this is allowed that the tendency of such land owners is increasing to get converted there industrial land into residential use. This fact would ease out the future situation of creating industrial use in this sector controlled if not comes to zero.

3.6. Recreational Use

Recreational uses in this sector are mainly 1) Saras Baug, Peshwe Park, Municipal are yet to be implemented which may add to this. This fact of deficiency of the recreational users was also observed during 1987 DP. At that time it was thought that the lands under HTHS which are reserved for this user would serve the society from deficiency. Some Population would go for the use of the HTHS areas for their recreation purposes, as is done at Parvati and Talajai Hills. In fact in the extended limits of the PMC in Dhayari - Wadagaon- Narhe, Ambegaon part villages, the Parvati Pachgaon Kuran Park in the large areas which is developed by the Forest Department is available for the recreational use by the people of the Pune City.

3.7. Water bodies

Water bodies like Mutha River, Mutha Right Bank Canal, Ambil Odha, Nagzari Nala, Katraj Tank, upper and lower. Another nala near APMC Yard to its west and east near St. Joseph Tech. Inst which ultimately form the nagazari in Sector I. It is also seen that few small nalas having very narrow width are existing due to topographical situation on both the sides of the Satara Road. These are appearing on the base map and a small width is seen and is shown on the base map. One thing is sure that these small nalas are the tributaries of the main 2 nalas as mentioned above and hence, this corridor has to be maintained with a view to allow the storm water drained through these nalas. It is

also seen that while carrying out the development of the land and construction of the roads, side drains are carved out with a view to flow storm water through this drain as if the channelization of the nalas has been done. In any case the disappearance of the Nala should not happen. In the elu survey percentage of water bodies observed is 4.55%, which is quite considerable, proper considering the presence of the part of Mutha river, Mutha Right Bank canal and nalas as stated above. Hence, what is important from the point of proposals of the sectors during formulating the policy for RRDP, that no water body is disturb and plugged by the Development process. In fact it should be maintained as it is and as stated above if there are any encroachments in the nala bed-land those should be removed and flow is properly kept and if necessary canalized.

3.8. Features of the ELU survey.

As stated above the brief description of this sector given so as to have the feel of this sector with a view to now discuss the actual elu survey analysis observed as below: Total area of the sector is 20437400 sqm. i.e. 2043.74 ha. Residential use is predominant and is found to be 28.85 %. Mixed use is 6.12%, in which use nearly 50% is DCR and convenient shopping is permissible on these roads. This is accounted in the elu survey. Next considerable accounted user is PSP, which is 8.22 %. This sector contains considerable educational institutions mostly in private sector. Similarly the health/hospital/nursing home, dispensaries also accounts in this category. Shahu College, Gandhi Training Institute, Maharashtra Vyayam Mandal College, Bharati Vidyapeeth, Tilak Maharashtra Vidyapeeth are the major educational insts. Hence PSP user observed is 8.22%. In fact as the implementation of the DP Reservations would take place this percentage would increase. This increase would not affect anything in the proposals, only aspect would be relative increase in the trip pattern due to these institutions. This will require the efficient road network and the public transport efficiency increase as a totality in the Traffic and Transportation Planning of the city and while finding out the desire lines diagram due to existing trip pattern in the city. Public utility user is 1.83%. This is because of the Parvati water works and purification Plants, 2 HSRs, 1 at Parvati Hill and another at Bibvewadi Hill, Swaragate Water works. This is distinctly shown on the base map and is accounted in ELU survey. Next dominant user is Hilltop Hill slope as explained in the beginning paras on both the side of this sector, presence of Parvati Hill and Bibawewadi, Dhankawadi Hills which are contiguous up to Katraj. These hill ranges area distinctly marked on the base map and accounted in the ELU survey.

3.9.1 Transport user

Transport user is accounted as 1.15 %. This is because of the locations of the PMPL Bus Depot, pickup sheds. ST Bus Depot etc. and this percentage would remain as it is.

3.9.2 Roads

Another aspect observed in this sector of road percentage is 16.83%. This percentage is quite low considering the population, road network existing etc. Normally in the layout and sub-division of any land, the road accounts to more than 12% up to 20% as the case may be. Ideal percentage should be 20 to 25 % in the city like Pune. However, this matter is based on the T&T Plan proposals and which are the main arteries likely to be further widened to desired width etc. This aspect is required to be considered while formulating the proposals of the RRDP.

3.10. Vacant Lands

Since this sector is the gateway to the southern part of the district and State, any other important proposals deriving from the Traffic Plan may have to be consider. The map showing the location of sectors along with sub sectors is enclosed in appendix no.

4. SECTOR –III,

This sector in the PMC limit is situated in the western part of the limit, to the north of Mutha River. This comprises of villages, Shivaji Nagar, Erandawane, Kothrud and Hingane Bk.(Karvenagar).This sector is 3rd Planning unit of the PMC. Area of this sector is 22703000 sqm. i.e.2270.30 ha. This sector is developed almost in planned and orderly manner. This is because in this sector in the north-east portion from villages Shivaji Nagar and Erandawane has been included in the T P Scheme Pune No. I. This scheme has been prepared as back as in 1930 or so and entire scheme layout is technically from Town Planning point of view is proper and practical. More so it is implemented since then on site. The scheme boundary starts from the Ganeshkhind Road to Shivaji Nagar Gaathan up to river, further from JM Road, Model Colony, F.C,Road, Bhandarkar Rod, Prabhat Road, Karve Road up to SNTD and further area to the south of Karve Road up to Erandawane Gaathan. This is very large area under TPScheme and because of the proper layout prepared with adequate road network, amenity sites, etc. Hence, the TP Scheme Pune No I area is ideally developed for residential use and accordingly during last 7 to 8 decades, the development of this area is on planned and orderly manner. We can say almost half the sector in the north-east part up to river Mutha is occupied by the TPScheme proposals, and residential and commercial development has taken place. .Rest of the area from villages, Erandawane, Kothrud and Hingane Bk.(Karve nagar) is non-scheme area but covered by the proposals of 1952 Master Plan and 1966 D.P. Salient locations of the predominant development of residential commercial and educational institutions, health institutions ,recreation grounds etc. In the north point beyond Ganesh Khind Road, there is ICS colony and Bhosale Nagar, Ashok nager while to the south of GK Road, the Chatushringi Goddess Temple, MSEB Power house, Govt. Polytechnic, Vishrambaug, Laxmi Societies, Model colony, Deep Bungalow, Wadarwadi, Hanuman Nagar, Bharati Vidyabhavan etc. residential colonies are to the west of these residential colonies continuous range of Chatushringi Temple Hill is existing which runs upto Fergusson Hill Symbiosis Hill Balbharati Hill, Law college Hill Vetal Hill, Hanuman Hill, MIT Hill, ARAI Hill upto Chandani Chowk, SNTD Hill etc. to the south of this Hill range development of Fergusson college, BMC College, Marathawada Mitramandal college exists residential and at some places mixed Development along Fergusson Road, J.M.Road, Apate road, Ghole road, PMC offices, Modern college, J.M. temple upto Deccan Gymkhana, Pulachi wadi, Sambhaji Park, Balgandharva Rangmandir, entire development upto Shivajinager Gaonthan, PMC Office, June Tofkhana, river side road exists. Further to the south of this Development, area around Bhandarkar Road, Prabhat Road, Karve Road up to river Mutha entire part is developed.. Above development is from the villages Shivaji Nagar and Erandawane.

Another aspect in this area as stated above is, most part is covered by the TP Scheme Pune No. I. Therefore we find that the development is in planned and orderly manner. Not only that few public sites reserved in the TPScheme have been fully developed to its desired use and lands under these sites vest with the PMC. In this area only the development taken place to the west of Bapat Road in Shivaji Housing Soc.,Asha Nagar, Vaidu Wadi, Bahirat wadi, Gokhale Nagar etc. is also on the basis of the detailed layouts prepared by the respective agencies and approved by the PMC.

As stated above, the sector's western portion is from the villages Erandawane, Kothrud and Hingane Bk. This portion is having access through the Major District Roads to Paud and NDA Khadakwasala. Mutha left bank canal is passing through this area, which goes up to Agricultural College. However, this canal is not functioning at all and there is no

water in this canal. The development taken place in the Kothrud and Hingane Bk.i.e. Karve Nagar area is on the basis of the proposals of the sanctioned Dev.Plan of 1966 in respect of zoning, road pattern, reservation sites etc. It is observed that in Kothrud area few large layouts of Rambaug Colony, Ideal Colony, Happy Colony and Dahanukar Colony, Bhusari Colony, were approved by the Collector, Pune, prior to the PMC, however at that time Pune Suburban Municipality was existing. In this sector there are existing classified roads leading to outskirts villages. These are mainly Paud Road, NDA Road. These roads are the main arteries for extending the road network inside the main roads. Since the M.L.B.Canal is not functioning, area under this canal has been developed as a road and it is found that this road provided access in the adjoining lands.

Few industries like CDSS at Erandawane, Kirloskar Kisan, Cummins India, at Kothrud Dewal Industry etc. are existing and in few individual plots industrial use in the form of I.T.use etc. is going on. Persistent I.T.Industry is having their unit in Erandawane to the south of Nalstop Church. Hence, entire area in this sector is on the planned and orderly manner being a TPS area.

There are few slums existing which are listed by PMC. Prominent from this are Janwadi near Gokhale Nagar, Shirole Road slum, Khilare Vasti slum etc Erandawane, Wadar Wadi and Kele wadi slum on Paud Fata area. On Paud road large slum is there. This sector has been provided with entire infrastructure by the PMC in all respect.

4.1 During the elu survey, following observation is found as below:

The residential user is 28.85 %, while mixed user is 6.47%. Fully commercial use is 2.45%. Next predominant use is under PSP, which contains educational inst., health inst., etc. This use is accounted as 9.04 %. This use is going to be stable if not increased as and when the DP reservations for school, health purposes are implemented. Industrial use is accounted as 1.36 %. This use is very small. However, due to the policy such use may not be in the future as the land owners in this use may avail the facility of converting it into residential use. Hence this percentage may get reduced in future. Another advantage would be, since the industries generate jobs and attract trips from the various parts of the city, this burden of the various trips would get reduced.

Recreation user is accounted as 2.99%. This user is quite low compared to the standard and norms required to be observed. Minimum 10% shall be required to serve this amenity.. Layout open spaces left over as 10% as per D.C.Rules are not accounted in this percentage. Some of the reservations for Garden, Park, CPG, PG which are not acquired, may be acquired in future and may add the percentage. In any case the deficiency may have to be removed in future planning increase.

Hill Top and Hill Slope areas account to 18.26 %. This percentage may make good the deficiency. The Bhamburda Vanvihar developed by the Forest Dept. is available for recreation off the Patrakar Nagar and Gokhale Nagar in village Shivaji Nagar Bhamburda. In 1987 DP, HTHS were preserved for the recreation use and Water bodies in this sector accounts as 8.49 %. This is due to the nallas existing in this sector and are flowing from west to east to join the Mutha River. Long stretch of Mutha river abuts to this sector to its east.50 % of this stretch i.e. area under Mutha River is accounted in this percentage. one thing is vital that all the existing nallas in the city are required to be preserved as it is with its available width as per land record and no portion shall be reclaimed or filled with debris so as to obstruct the flow during monsoon and also water from Storm water drains to join this nallas and river ultimately. In 1987 DP nala Channelisation and improvement schemes have been proposed and this proposal has to be continued in RRDP.

Slum area is 4.14 % as per elu survey. Total population as on 2007 of this sector is 4,06,266.00. Normally slum constitutes 40% of the total population, hence 1,62,500 would be slum population occupying 4.14 % land i.e. 93.99 ha. Hence the density of 1

ha. land would be 1729 persons i.e 384 tenements per ha. This density is very thick and creates unhygienic conditions. SRA scheme are applicable to the Pune City, Hence, the rehabilitations done under this scheme may have to think for thinning out the slum population in future.

Transportation land use percentage is 0.02, which is very meager. This is due to only PMPL Depot in Kothrud area, while other pickup sheds or stops are accounted in road area. whatever T & T plan proposals may come in future for reservations of Depots etc. may have to be thought for.

In this sector Defense land is located at Kothrud behind Shikshak Nagar. This user is due to danger zone designated of tests carries out by ARDL at Pashan across the hill. This is a proposal of the 1966 DP and continued in the 1987 DP at the instance of the Defense Dept. It seems that now the said lands have been acquired by the ARDL and taken in possession.

Roads i.e. land under roads accounts to 9.74 %. This percentage is somewhat reaches the standards of 15 to 20 % which is desired on. Actually this sector is the gate way to Konkan area through the Paud road further via Tamhani Ghat to join the BKG road. Sum of the widening proposals of the DP roads and Paud road, NDA road are yet to complete, hence percentage may increase when the widening is over. T & T Plan proposals are yet to come and hence, in this percentage of roads may increase.

Vacant lands in this sector account hardly 4.62 %. These land would be needed for public utility lands account to 0.50 % . This is due to HSRs(2 no.) on Erandavane Hill and 1 STP plant at Erandavane near Mhatre Bridge. Agricultural use is only 0.29 %. However this would not remain as the tendency to convert such lands into residential zone is increasing due to demand of the open lands.

Another important aspect is, in 1987 DP at village Hingane Bk. behind Karve institute, Agricultural/ green zone was kept. since, the Gunthewari development in the form of unauthorized use has taken place on the land, the Gunethewari Act of 2001 provided for regularization of such type of development and as such the PMC has regularized these development and the green zone is converted into residential zone by modifying the 1987 DP.

The population of sector III as per (GIPE) in 2007 is 406266 lakh and that in 2027 is 503418 lakh. Normally the percentage of total city population to this sector is 19 % at 2001 to 2012, it will get reduced to 16, 17, 15 for respective years. The sector level density of persons per ha. at 2007 year works out to 180 persons per ha. For 2027 it would be 222persons per ha.

5 SECTOR – IV:

Sector IV comprises of villages, Shivaji Nagar, Aundh, Bopodi, Pashan including Sutarwadi. More specifically this sector is located in the north- western part of the PMC limit. This is 4th planning unit of the PMC. Area of this sector is 31762800 sqm. i.e. 3176.28 ha. This sector is linear form and having long distance from east to west. This sector is further divided into 5 sub-sectors for the purposes of the existing land use survey. Viz, III-A to III-E.

Modern college, Abhinav Kala Vidyalaya, at Pashan etc. are existing percentage of PSP user as per ELU survey is 6.71%. is comparatively sizable.

The next dominant user is Defense use having area of 62.25 ha. i.e. 1.96%. As earlier stated most of the Defense activity is located at Pashan and Bopodi to the east of Pune University. Simple reason for this is that this village of Pashan was on the outskirts of the developed area at Aundh, Bopodi etc. From the point of integrating the defense activity

this location has been selected. Moreover the NCL which is located in Pashan village is another reason to have entire public/defense activity at one end of the city. Geographically also Pashan is isolated by the existing hill ranges and the only access to the Pashan from Pune City is from the Ganeshkhind i.e. existing University square. Another access is from Chandani chowk at Kothrud. However this access was not commonly used.

Residential user is which accounts to 21.42 %, while mixed user is 4.80% and purely commercial user is 1.82%. According to the D.C.Rules, commercial user is permissible in R-2 Zone, as such above 3 users would account to 28.04 %. From the elu map it is observed that residential user is scattered at 4 places. 1) Shivaji Nagar gaothan area , model colony area, Both sides of Mumbai-Pune Road, 2) Bopodi area near gaothan etc, 3) Aundh village, Sindh housing colony, National Soc, Governor house, etc, 4) NCL residential colony, 5) Pashan gaothan and surrounding area, including Sutarwadi area. This entire area is well connected with DP Roads, however, due to presence of the large complexes of the NCL, ARDL, RDE, the accessibility detours for some area. In the ELU survey vacant land percentage is accounted as 3.43%. From this future residential development would take place. Population as on 2001 census is 2,04,102 while as on 2007 is 2,35,207. Projected for 2027 is 4,69,857. Since, existing residential area shown in 1987 DP is not totally consumed and there is vacant land, also the permissible FSI is not consumed, the projected population would accommodate in this. It is also clear that there is no scope to enlarge the residential area physically. In ELU survey vacant lands are seen, in which the future population would go.

There is continuous hills from Sector III up to Pashan, and thereafter beyond the Pashan Lake adjoining to the Western Express Highway, the percentage of HTHS is 13.56%. Residential user together with distinctly shown on the base map. Similarly Ram river flowing through the Bawdhan and Pashan village. It is impounded in Pashan with barrage to form the lake. There onwards it also flows from Baner village (which is the extended limit of the PMC) to further join to Mula river in the North. Mula river further coming from the Bopodi and Khadaki Cant. Board limit's western boundary, via Holkar Bridge, COEP College, District Judge bungalow and further it joins the Mutha river to make confluence of Mula-Mutha. To have a confluence in the city is a holy aspect in our civilization. Hence, Pune City is a holy city from the earlier past. Besides few nalas are existing which have appeared on the base map. These nalas are required to be protected from any urban development is a tributary of Ram and Mula river. Percentage observed in the Elu survey is 6.31%.

Another important landmark in this sector is Mumbai-Pune NH-4 is passing through PMC limit near Harris Bridge in Bopodi, further via Khadki, Shivaji Nagar (milk dairy onwards) known as the Dr. Ambedkar Road (former Wellesly Road) to join it to Solapur Road NH-9. This is a major classified artery of NH-4 carrying heavy traffic to and from Mumbai to Pune and back. Old Mumbai-Pune Road also pass through the Aundh area further known as G.K. Road to Shivaji Nagar and Pune Railway Stations. Important Rail link from Mumbai-Pune and further to Solapur and Miraj etc. also passing through this sector. On this track local trains are running between Pune to Talegaon-Lonawala to form the public transport facility by rail. The PCMC area is adjoining to the north-west portion beyond Bopodi village, and connected by the Harris bridge on Mula River, Dapodi village onwards. In fact the Dapodi village was formerly a part of the PMC limit, (was part of the 1987 DP), however it is excluded from PMC limit and included in the PCMC Limit. Aundh Road and Sus Road are links to join Western Express National Highway No.4 from Mumbai to Pune. Another classified road via Pashan to Sus also connects to Western Express Highway. Hence this sector is important from the point of connectivity corridors to north-western areas in the Pune Metropolitan Region.

Public Utility user in the sector is 0.37%, which is mainly the Pashan Water works of PMC, Drainage Pumping station at N.T.Wadi, and at Bopodi.

Industrial user in this sector is 1.01 %. This is mainly of the Kirloskar Oil Engine Factory at Khadki-Bopodi and Brick kilns at Pashan and Bopodi. This user has to be accepted as committed user, as the location of the Kirloskar Oil Engine is in isolation of the city development and this is not going to cause any hindrance to the transport user accounted in the elu is 0.02 %, this is of the S.T.D Depot at S'Nagar and PMPL Depot at N,T,Wadi and Aundh.

Recreation user as accounted is 2.22%. This percentage is quite low, however, here the residential user itself is only 21.42%. Population of 2001, is 204102, while it will increase to 4,69,857 by 2027. In this sector major development occurred in Model Colony to GK Road area, On Mumbai Pune Road, N.T.Wadi, Police line, opposite Modern College, in part of Agri.College in the beginning portion, Bopodi village area, Aundh village to the west of the GK road, near NCL, inside the NCL colony to the south of Pashan Road in horse shoe of hills (Vrindavan Soc.), Pashan village gaathan and adjoining area to the west of nala and also to the east of nala. And Someshwar Temple, Sutarwadi area and along both side of Sus Road. As seen from the elu survey some portion at Pashan, Sutarwadi and to the east of Someshwar Temple, some open vacant lands are seen.

Slums are accounted as 3.08%. Most of the slum is seen at Bopodi, near Governor house on Aundh Road. On Mumbai-Pune Road etc. Bopodi slum area some improvements under SRA have taken place.

Water bodies in this sector account to 6.31%. Mula river, to the north of Aundh Bopodi and Shivaji Nagar, Ram River and Pashan Lake, nalas in the Aundh, Bopodi, and Pashan villages, Model colony lake, Ram River to join Mula river. All these aspects are shown on the base map. These water bodies are to be maintained as it is without reducing the width etc.

Ram River is having its river bed width narrow. However by keeping green belt of adequate width on both the side, the flow can be channelised and greenery can be created by plantation of trees.

Percentage of vacant lands is 3.43%, construction is 0.11 % . These lands are distinctly shown on the map. These lands would be useful in formulating the proposals of the DP.

Agricultural use is 0.20%. This is mainly of the agricultural college, few lands near Someshwar wadi at Pashan. Botanical Garden etc. However looking to the practice of the Agriculturists to get converted their lands in the residential zones, This use may not continue in future, except Agricultural college as it is a part of the M.Phule Agri. University, and botanical garden.

6) SECTOR-V,

This sector comprises of villages, Kalas, Dhanori, Yerawada, Lohogaon, Wadgaon sheri and Kharadi both in parts. This sector is located in the north-eastern part of the Pune City to the north of Mula-Mutha River. Since this sector is across the Mula-Mutha river, not easily accessible to the old city because of the far off location. Bund Garden Bridge and Holdkar Bridge are the bridges which gives access to this large area and the new connecting road from Koregaon Park to Kalyani Nagar has been provided. Due to this situation, in this sector large size public users have been located at Govt. level long ago. Defense Airport, Central Jail, Mental Hospital, Deccan College, Golf Club etc. are existing in this sector, Area of this sector is 3154.26 ha. This sector is further sub-divided into 5 sub-sectors for the purposes of the elu survey. This is named as Sub-sectors A to E. This is a 5th planning unit of the PMC.

This sector is most important from the point of Defense user and other strategic users in the sector such as Mental Hospital, Central Jail, Deccan College etc. Another important aspect of this sector is 2 State Highways are passing, 1) Pune-Ahmednagar, 2) Pune-Alandi-Chakan-Nasik. These are major links to go outside the Pune City in the District and further. the impact of these two main traffic arteries have created a constant movement of people and vehicles. In the Defense Airport, since, the civil enclaves have been provided, the air traffic coming from outside is also causing the heavy movements on the Jail Road and further through Nagar Road, to the city via Bund garden bridge. Via Holkar bridge, there is a direct connectivity to the Kirkee Cant Board area and further to join the Mumbai-Pune Road at Bopodi naka. Defense activity of Tank Testing and Air force movements at Lohogaon Airport is a usual feature. Lot of open land at Dhanori-Kalas has been under the use of Defense activities. On Alandi road outside PMC limits, the vast area is under Defense activity use and movements of these activities are through the PMC limit. Vishrantwadi is location where the commercial activity is generated in large proportion.

As per elu survey the largest dominant activity of Defense Dept. accounts to 30.55 %, (area 963.63 ha). As stated above, since the Nagar road is the major artery to go to the north-east areas in the District, State and outside State, constant heavy traffic is seen on this State Highway. In 1987 DP the width of this road has been shown as 61 mt. and PMC has taken steps to widen this SH to 61 mt. , this has resulted in reducing the congestion to some extent.

Hence, as stated above this sector in PMC limit is the fifth Planning unit is very important for carrying out elu survey. Hence the teams were instructed accordingly to carry out survey with great care. Unauthorized development at both these villages along the Nagar road has taken place viz. Chandan Nagar etc. Few Industries have also come outside the PMC limit. In order to have the traffic going towards Mundhawa and Solapur Road the bridge near Mundhawa gaathan on Mula-Mutha river has been constructed, which has facilitated the traffic movements going towards the Solapur road are diverted from coming to the city. Now the area from Vadagon sheri, Kharadi has been included in the extended PMC limit and that the separate DP of these 23 villages have been prepared and submitted to Govt for sanction the co-ordination of 1987 DP that with new DP is being achieved and now the entire control of these village is with the PMC.

6.1 As per the elu survey the details of the various landuses are as follows:

Residential zone is only 9.94 %. This user is mainly around Yerawada gaathan area up to Golf club, Shastri Nagar, Nagpur chawal slum, Kalyani Nagar, Viman Nagar, Ramwadi, De Noblee College, Chandan Nagar, Air force quarters. On Alandi road, In S.No.129, Phule Nagar and surrounding, Ramnagar, Vishrant wadi, Tingare Nagar, Kalas and on Dhanori road, Sangamwadi and in the vicinity due to defense quarters. Population observed in 2007, is 2,56,589 and that estimated for 2027, is 6,37,663. Growth is expected to be 2.5 times. Considering the vacant lands available the same can be accommodated in this vacant land. In elu survey the percentage of vacant lands is 7.77%. Slum area is 2.49 %. In this area also the existing and projected population would be there. Mix land use observed is 1.55 %

Fully commercial use in the area is 1.56 %. This is mainly on Nagar Road, Jail Road, Alandi Road.

Industrial use observed is on Land, i.e. 0.69 %.

PSP user observed in this area is also considerable i.e. 12.65 %. Why this use is more the reasons have been mentioned in the first para.

Public utility user is 0.29 %.

Recreation user is observed as 3.45%. This percentage is quite low, however some of the population of the mental hospital, jail, air force quarters etc. is having there separate open spaces. As regards kalyani nager population due to TP Scheme yeravada would provide some reserved sites. However, considering the fast growth RREVISSED DEVELOPMENT PLAN may have to take care of the same.

Transport user is only 0.07 %. This is due to some bus depot and place of PMPL buses etc.

As regards the vacant lands it is already mentioned that it is 7.77 %. It would be needed for the future development proposals.

Water body is accounted as 2.36 %. This is due to the part of the Mula and Mutha rivers flowing by the side of this sector.

Roads user observed is as 5.62 %. This percentage is low because large bulk users of Defense, PSP etc. occupy 43.2% land and roads are skirting along their periphery. Agriculture use land is accounted as 19.10 % which is sizable.

7. SECTOR – VI,

This sector comprises of villages, Mali Munjeri, Ghorpadi, Mundhawa, Hadpasar, Wanavadi and Kondhawe Kh. Location of this sector is to the south of the Mula-Mutha rivers and to the north-west and south of the Pune Cant. Board. Area of this sector is 3569.60 ha. For the purposes of carrying out elu, this has been further divided into five sub-sectors i.e. Sub-Sector A to E. This sector is largest in the city and sixth planning unit. This sector has major transportation links of the Pune-Solapur NH-9, Pune- Saswad-Baramati S.H. Old Pune-Saswad SH through Kondhawa Kh. Via Bapdeo Ghat. Mumbai Pune-Solapur-Hyderabad etc.broad gauge railway line also passes through this sector from the northern side further to Ghorpadi Station. From Ghorpadi Station another branch of railway goes to Miraj, Goa etc. all these important features are shown on the base map distinctly. This sector consists of all users listed for elu survey so as to have the mixed development taken place. Here the physical barriers are due to railway line at two places, which requires to cross over by over bridge at various locations. Pune Cantonment area is also existing in the form pocket at Mundhawa to the north of Railway line and is accessed via Ghorpadi and PCB roads. Rest of the areas well accessed by city roads, DP roads, colony roads etc. Hence main accessibility to this sector is through the Pune Cant. Area. In this sector, 2 TPSchemes are existing. 1) TPScheme Sangamwadi Pune, 2) TPScheme Somwar Mangalwar area. First TPS is up to Koregaon Park area touching the Bhairoba Nala and railway line to the south and river Mutha to the north. Due to this TPS the development taken place in this sector is planned and orderly. Above 2schemes for residential use while 2 more TPSchemes are taken for Industrial Use. Both at Hadpsar village. Hadpsar Ind.II scheme is located beyond the Miraj Railway line, while No. I Ind. Scheme, is to the north of this railway line. This Ind. Scheme is totally developed and Kirloskar Pneumatic and Indian Hume Pipe like large industries are existing. Another two major industries like Bharat Forge and Siporex are existing to the north of Ind.Scheme No. I in Mundhwa village. Major water body in this sector is Mula-Mutha River and Mutha Right Bank Canal (old and New alignments). Major nalas like Bhairoba Nala and Hadpsar Nalas are flowing though the sector from south to north direction to meet to the Mula-mutha River. Pune Railway Station, Ghorapdi Yard/Station and Hadapsar Station are the 3 Railway stations. However, Pune Railway Station is a major junction in Central Railway and South-Central Railway line and mainly trains in the various parts of the country starts from this station. This railway line is double line for the convenience of the to and fro communication of the passengers. On this line Daund-Pune local trains are also running to provide mass transport through railway. Main drainage works and pumping stations are located in this sector. 1) At

Naidu hospital, 2) Bhairoba Nala Pumping station, 3) Mundhawa pumping station 4) At Wanawadi there is a pumping station. The treated effluent is further supplied by pipe line via sadesatra nali to Manjari village lands for the agricultural use. Large area is also under the use of Gliding Centre at Hadapsar on Saswad Road. Further details as observed through the elu survey in each category are detailed below:

Residential user as accounted is 20.78 %. This is the largest user in this sector. This residential development is seen at TPS Sangamwadi area up to Koregaon Park Somwar-Mangalwar Peth to the Railway line, Mundhawa gaathan and some development along gaathan road to the north of Railway line, Ghorpadi village area to the south of railway line accessible through the Solapur Road, Hadapsar Gaathan and surrounding area, Magar Patta, Behind Sadhana Vidyalaya, on Mohammad wadi road, Wanavadi village and surrounding up to SRP. Kondhawa area on both the side of old Saswad Road. According to the 2007 population the sector contains 3,63,501. For 2027 it is estimated as 6,37,663. Slum area is 69.73 ha. Which is 1.93% of the total sector. Mixed landuse is in 2.99% Commercial use is in 2.76%. In above three users some part of the population is existing. Since Vacant land is 11.63 %. Hence it seems the part of estimated population can be accommodated in vacant land in future development in the sectors. More so all these lands are owned by the PMC in the industrial TP-Sch. Hadapsar and leased out to concerned industry.

Public-semi-public user is 8.28 % This is mainly due to Govt. Offices at Central Building complex, SRP, Educational institutions on Bund Garden Road, Public Offices of MSEB, TMTC etc. This percentage would increase as the DP reservations would be implemented in future.

Recreation user observed as 5.80 % This is somewhat low percentage, However due to reservation for these purposes may increase some percentage. In this sector there is a Ram tekadi to the south of Railway line and solapur road. This can be available for recreation uses.

Transport and communication user is observed as 3.32 %. This is mainly of the PMPL depots and such other sheds under use. This percentage may increase due to some lands required for reservation etc. Under construction buildings have been accounted as 0.14 %. These are committed permissions and may have to be maintained as per policy.

Water bodies present in this sector are mainly due to Mutha River, Mutha Right Bank Canal (old and new alignments), Bhairoba Nala, Hadapsar Nalas, Kondhawa Nala etc. The area under this user is 11.16 %. This user is protected user from environmental point of view, hence it would be considered as necessary. Nala improvement schemes as suggested in 1987 DP shall be considered for guidance.

Agricultural use in this sector is 5.44 %. It is seen that this user may not be continued in future as there is a tendency of the Agriculturist. This is evidence from the Magarpatta lands which were in Agricultural zone in 1987 DP and subsequently converted into residential zone and is observed in the ELU survey. As regards the Mundhawa lands the Govt. has already directed the PMC to change the zoning of these lands to residential use.

Hill top hill slope zone lands are 2.71 %. As stated earlier this is due to the presence of the Ram Takadi hill up to Wanawadi on the eastern part of the this village. As per policy this user will remain as it is.

Public utility user is 2.30% . This is due to the existence of the Drainage Pumping stations and treatment plant as stated above.

8) Existing land use analysis for the city (Sectors I to VI) :

The total area of city as a whole old limit is 14758.35 ha. Now as seen from the total percentage of the listed users at city level, then it is found that the Residential User is 20.48 %. This shows the compact growth of the city and may have to be thinned out while formulating new development proposals it is also seen mixed land use that is commercial and Residential users i.e. about 5.26%

Next sizable PSP user is 9.19 %. Excluding defense. These users consists mainly of Educational institutions like University, school, colleges, **court offices** & institutions etc. are included.

Defense user is accounted as 8.41 %. This is due to the reasons that Pune City is the HQ of the Southern Command and the existence of the Lohagaon Airport, ARDL, ARDE, and such other defense organizations are included.

Hill top and hill slope user is 8.38% occupying. This user is considered important from the environment point of view and hence to be protected from any urban development.

Recreation user is 3.89% occupying. This is observed to be quite low. They include open spaces, garden, Parks, Playground, etc.

Vacant lands are accounted as 6.70 %. These will be the required for future development and 0.49% land under construction. There are of 3.01% slum area in the city.

Water bodies are accounted as 6.37 %. Land. Water courses need to be protected for free flow of rain water and storm water to avoid flooding and should not be allowed to be reclaimed.

Area under roads is 15.99 %. The Agricultural land is 5.52%. This land may not remain in the Agricultural use. Use because of the tendency to convert such lands into non-agricultural activities.

The area under Public utilities is 1.04%. This area consist of water treatment plant, sewage treatment plant, pumping stations MSEB etc.

Transport & Communication area is 0.92% which consist Bus depot, Bus terminus Parking, ST stands, railway stations etc.

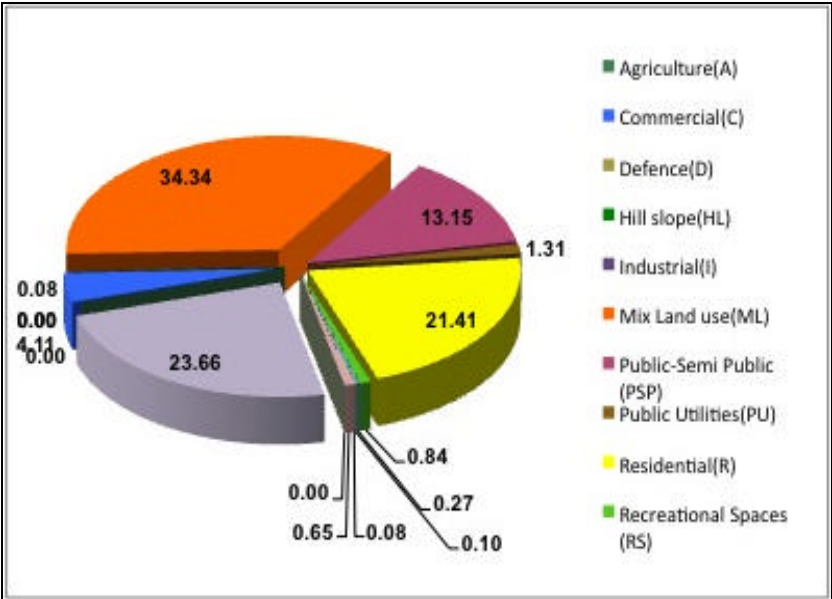
EXISTING LANDUSE SURVEY DETAILS . SECTOR I

EXISTING LANDUSE	
SECTOR I	
ZONE	%
Residential(R)	21.41%
Recreational Spaces(RS)	0.84%
Slum(SL)	0.27%
Transport & Comm(TC)	0.10%
Under Construction(UC)	0.08%
Vacant (VL)	0.65%
Water bodies (WB)	0.00%
ROADS (RD)	23.66%
Agriculture(A)	0.00
Commercial(C)	4.11%
Defence(D)	0.00%
Hill slope(HL)	0.00%
Industrial(I)	0.08%
Mix Land use(ML)	34.34%
Public-Semi Public(PSP)	13.15%
Public Utilities(PU)	1.31%



Location map

Pie diagram for Existing Landuse Sector-I.

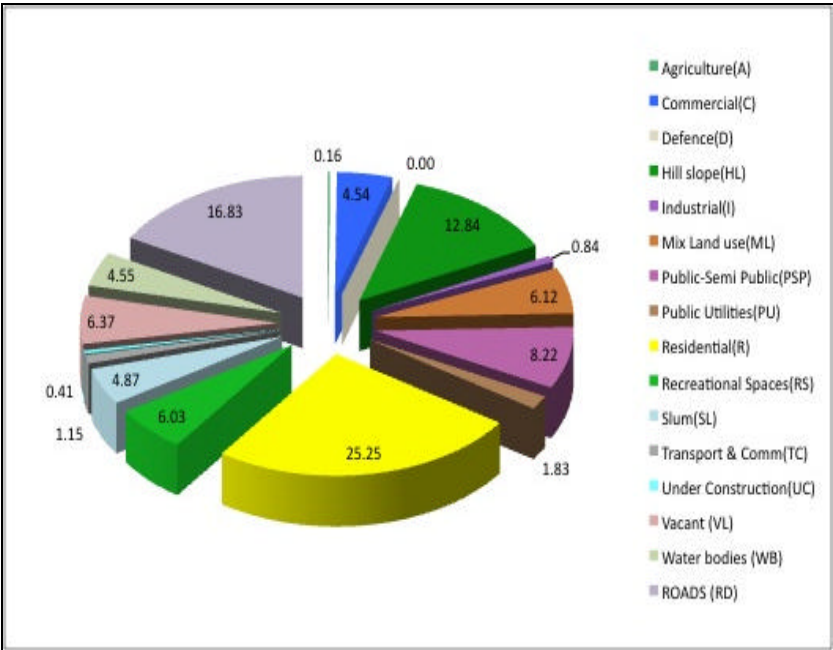


EXISTING LANDUSE SURVEY DETAILS - SECTOR II

EXISTING LANDUSE SECTOR II	
ZONE	%
Residential(R)	25.25%
Recreational Spaces(RS)	6.03%
Slum(SL)	4.87%
Transport & Comm(TC)	1.15%
Under Construction(UC)	0.41%
Vacant (VL)	6.37%
Water bodies (WB)	4.55%
ROADS (RD)	16.83%
Agriculture(A)	0.16%
Commercial(C)	4.54%
Defence(D)	0.00%
Hill slope(HL)	12.84%
Industrial(I)	0.84%
Mix Land use(ML)	6.12%
Public-Semi Public(PSP)	8.22%
Public Utilities(PU)	1.83%



Pie diagram for Existing Landuse Sector-II

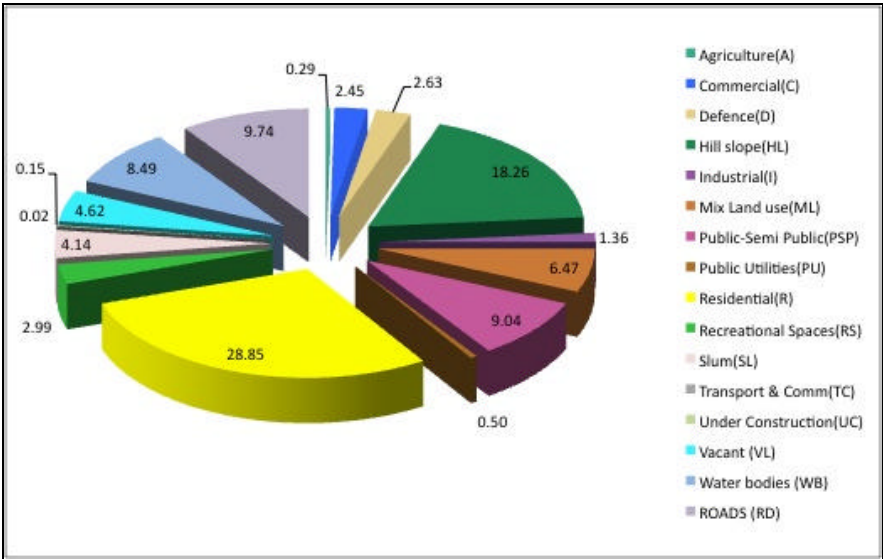


EXISTING LANDUSE SURVEY DETAILS SECTOR III

EXISTING LANDUSE SECTOR III	
ZONE	%
Residential(R)	28.85%
Recreational Spaces(RS)	2.99%
Slum(SL)	4.14%
Transport & Comm(TC)	0.02%
Under Construction(UC)	0.15%
Vacant (VL)	4.62%
Water bodies (WB)	8.49%
ROADS (RD)	9.74%
Agriculture(A)	0.29%
Commercial(C)	2.45%
Defence(D)	2.63%
Hill slope(HL)	18.26%
Industrial(I)	1.36%
Mix Land use(ML)	6.47%
Public-Semi Public(PSP)	9.04%
Public Utilities(PU)	0.50%



Pie diagram for Existing Landuse Sector-III

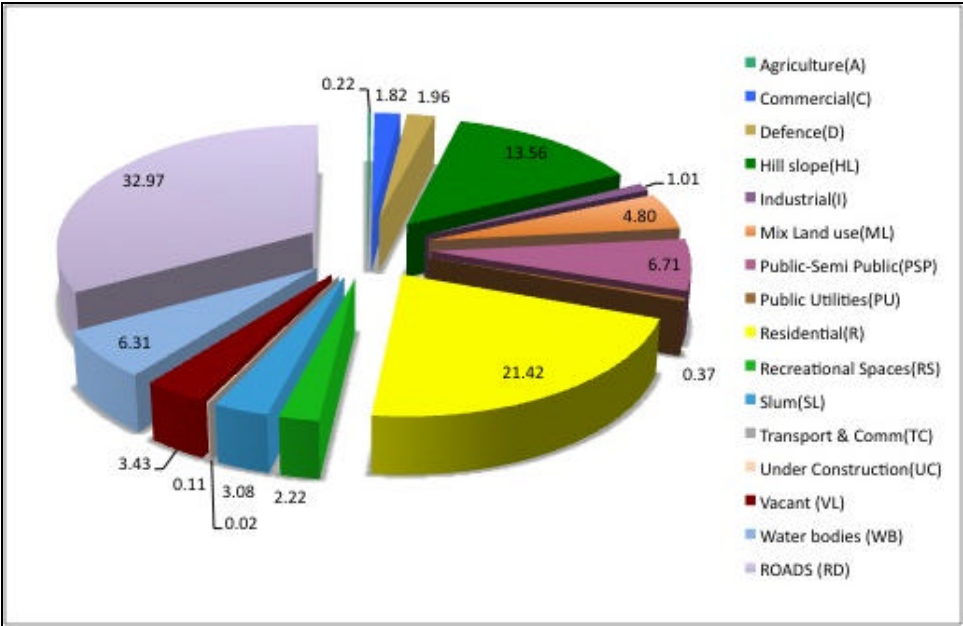


EXISTING LANDUSE SURVEY DETAILS . SECTOR IV

EXISTING LANDUSE SECTOR IV	
ZONE	%
Residential(R)	21.42%
Recreational Spaces(RS)	2.22%
Slum(SL)	3.08%
Transport & Comm(TC)	0.02%
Under Construction(UC)	0.11%
Vacant (VL)	3.43%
Water bodies (WB)	6.31%
ROADS (RD)	32.97%
Agriculture(A)	0.20%
Commercial(C)	1.82%
Defence(D)	1.96%
Hill slope(HL)	13.56%
Industrial(I)	1.01%
Mix Land use(ML)	4.80%
Public-Semi Public(PSP)	6.71%
Public Utilities(PU)	0.37%



Pie diagram for Existing Landuse Sector-IV

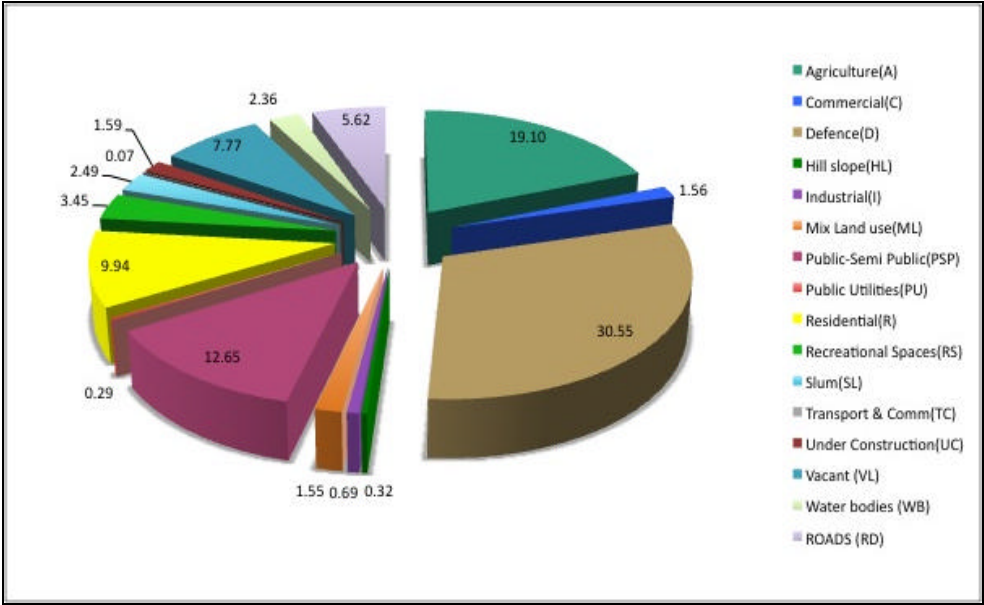


EXISTING LANDUSE SURVEY DETAILS - SECTOR V

EXISTING LANDUSE SECTOR V	
ZONE	%
Residential(R)	9.94%
Recreational Spaces(RS)	3.45%
Slum(SL)	2.49%
Transport & Comm(TC)	0.07%
Under Construction(UC)	1.59%
Vacant (VL)	7.77%
Water bodies (WB)	2.36%
ROADS (RD)	5.62%
Agriculture(A)	19.10%
Commercial(C)	1.56%
Defence(D)	30.55%
Hill slope(HL)	0.32%
Industrial(I)	0.69%
Mix Land use(ML)	1.55%
Public-Semi Public(PSP)	12.65%
Public Utilities(PU)	0.29%



Pie diagram for Existing Landuse Sector-V

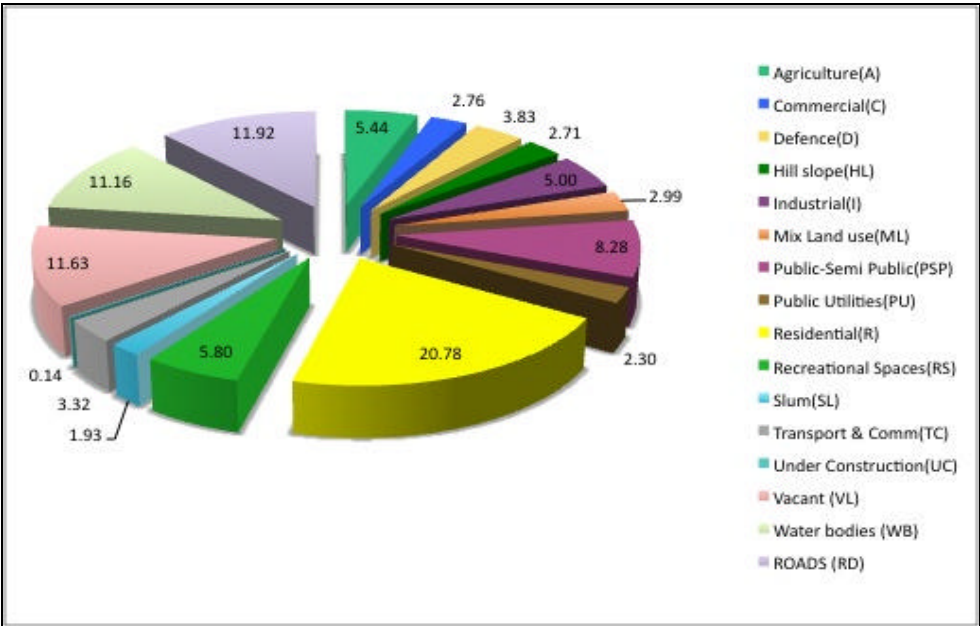


EXISTING LANDUSE SURVEY DETAILS . SECTOR VI

EXISTING LANDUSE SECTOR VI	
ZONE	%
Residential(R)	20.78%
Recreational Spaces(RS)	5.80%
Slum(SL)	1.93%
Transport & Comm(TC)	3.32%
Under Construction(UC)	0.14%
Vacant (VL)	11.63%
Water bodies (WB)	11.16%
ROADS (RD)	11.92%
Agriculture(A)	5.44%
Commercial(C)	2.76%
Defence(D)	3.83%
Hill slope(HL)	2.71%
Industrial(I)	5.00%
Mix Land use(ML)	2.99%
Public-Semi Public(PSP)	8.28%
Public Utilities(PU)	2.30%



Pie diagram for Existing Landuse Sector-VI



EXISTING LANDUSE SURVEY DETAILS - SECTORS I TO VI

EXISTING LANDUSE SECTORS I TO VI	
ZONE	%
Residential(R)	20.48%
Recreational Spaces(RS)	3.89%
Slum(SL)	3.01%
Transport & Comm(TC)	0.92%
Under Construction(UC)	0.49%
Vacant (VL)	6.70%
Water bodies (WB)	6.37%
ROADS (RD)	15.99%
Agriculture(A)	5.52%
Commercial(C)	2.54%
Defence(D)	8.41%
Hill slope(HL)	8.38%
Industrial(I)	1.82%
Mix Land use(ML)	5.26%
Public-Semi Public(PSP)	9.19%
Public Utilities(PU)	1.04%



Pie diagram for Existing Landuse Sector-I – VI

