Planning Strategies for Development of Urban Fringe of Surat City

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Abstract: **An important development in urban settlement during the past few decades has been the rapid expansion of population and built-up area into the unincorporated suburb and in areas surrounding our large towns and cities. This recent finger like trend of development at the town margins has been made possible by the mechanised transportation and the extension of the public utility services such as electricity, water and sewage, etc. beyond the city's limit.**

Rural urban fringe is the most dynamic area lying between the city and rural area. The dynamic nature of the fringe can be detected by observing the changes in the city and vice versa. The changes at rural urban fringe depend up on the function and size of the city. The shape of the fringe belt varies from city to city, based on the physical, cultural, and economic personality of the city. Its shape is always changing in communication facilities. It is a process which helps to change the rural countryside into urban units. As the urban centre expand, the fringe belt does not remain static, it goes dynamically converted into a rural urban fringe and then merge with the parent urban center. Rural urban fringe signifies both urban and rural characteristics. The nature of fringe, as it neither purely resembles with the town characters nor with rural characters and the same time corresponds to both. The better way to identify the dynamic nature of fringe area is in terms of social, cultural, demographic and land transformation at different time periods. Urban encroachment is one of main problem prevailing in the environment of rural urban fringe. The urban impact has not only changed the socio-economic and demographic profile of the rural urban fringe but also the land use pattern of the area.

The emergence of the fringe zone; with its own complex problems of adjustment between rural and urban ways of life have assumed importance and have drawn the attention of planners and social scientists for many years. Yet the study of the urban fringe has been a neglected topic in area of urban research. Even in the developed countries a few studies have been undertaken in this regard though this developmental phase of urban morphology was experienced there in the very beginning of the 20th century. Urban fringe studies have not received much attention among Indians either from geographers or from scholars in any of the other disciplines, which is a part of metropolitan planning approach. Hence, we have one of the major gaps in geographical research in this area of urban studies.

Keywords: Urban fringe, Urban sprawl ,Urbanization SUDA,Surat

I.Introduction:

1. URBAN FRINGE

Urban fringe of the modern city is a significant area because it signifies both urban as well as rural characteristics. This should not be treated as two distinct zones as the city merges perceptibly into rural countryside by way of mixed land uses.In India also, the same job has been performed by other-side population, i.e., by village people who travel daily to earn their bread and come to neighboring towns. But greatest is the role of land uses which bind together town and village everywhere and "there is the absence of clear break". Thus, urban fringe is a marginal area both of town as well as countryside. It can be better identified in terms of land uses or modifications of land uses than in any other way. Rural-Urban fringe (R-U fringe) is a transitional zone and could be recognized recently on social grounds by the presence of rural and urban groups. But modern means of communications as well as means of movement of people and goods are making the social attitudes between the two groups of rural and urban practically much diffused. In various parts of Western Europe and North America, urban impact on social life has been felt well away from the immediate surroundings of cities. Therefore, it is no longer worthwhile to recognize a rural-urban fringe. Herington defines R-U fringe more or less in the same context as "an area with distinctive characteristics which is still partly rural and where many of the residents live in the country but are not socially and economically of it".

The city does not grow outwards in well-defined patterns. It sprawls haphazardly, making rapid advances at one point, and hardly moving at all at another. This results into incoherent landscape which is the characteristics of the fringe.

Another characteristic and an unique quality is a wide mix of land uses ranging from a variety of commercial developments, including out-of-town shopping centres, to the city services and industries which are conveniently located at the margins.

2. URBAN SPRAWL

Urban sprawl can be defined as the expansion of urban concentration beyond what they have been. Urban sprawl involves the conversion of land peripheral to urban centers that had previously been used for non-urban uses, "In the process the land absorbed by the urban center becomes a functional part of the urban agglomeration and is occupied by the people who in attitude, behavior and activity are integrated into the urban society in recent times the land needs and the areal expansion of cities and the increase in urban population who will occupy land in or near the city.

Sharma R.C. states "The explosive growth of cities leading to urbanization in India is a waxing phenomena. The sprawling unintended urban settlement with congestion, rapidly deteriorating, or lack of infrastructure and public services are the attributes of cities in India ".

Surat city CBD 1

The SUDA had proposed its first development plan in 1980 A.D., which was sanctioned by the Govt. of Gujarat on 31st January 1986 and which came into force from 3-3-1986. The first plan was prepared for the plan period up to 2001 AD. The process of urbanization is a continuous phenomenon. The first plan envisaged was based on the existing situation premalignant that time. However the process of planning depends upon a number of variables such as population growth, economic activities, development of counter magnates, and the nature of development to Cope-up these problems it requires to review the development process at moderate time intervals SUDA has thus taken up the study of the preparing revise development plan to streamline the development to achieve the long term requirements. For preparation of revised development plan, plan period up-to 2011 AD has been considered. This revised development plan also requires to be reviewed at an interval of 10 years with a view to accommodate and to review the programme of implementation and also to assess requirement and needs created by new technology and new development. The first step in preparation of development plan is the identification of the land use characteristic and existing city structure situation and a detailed survey of existing situation has been made.

Table: 1

Year	Planning efforts	Planning authority
1960	Initial development plan	SMC
1961	Sanctioned	SMC
1969	Development plan for Rander &Adajan	SMC
1975	Development plan for Surat Publised under the Bombay Town Planning Act.	SMC
1976	GTP & UD Act-1976	SMC
1978	Constitution of Urban/Area Development Authority	SMC
1980	First development plan publised	SUDA
1982	Amendment published	SUDA
1986	Sanctioned	SUDA
1997	Revised DP published	SUDA
2001	Amendment published	SUDA
2004	sanctioned	SUDA
2013	"Initiating Preparation of Revised Development Plan of Surat -2035"	

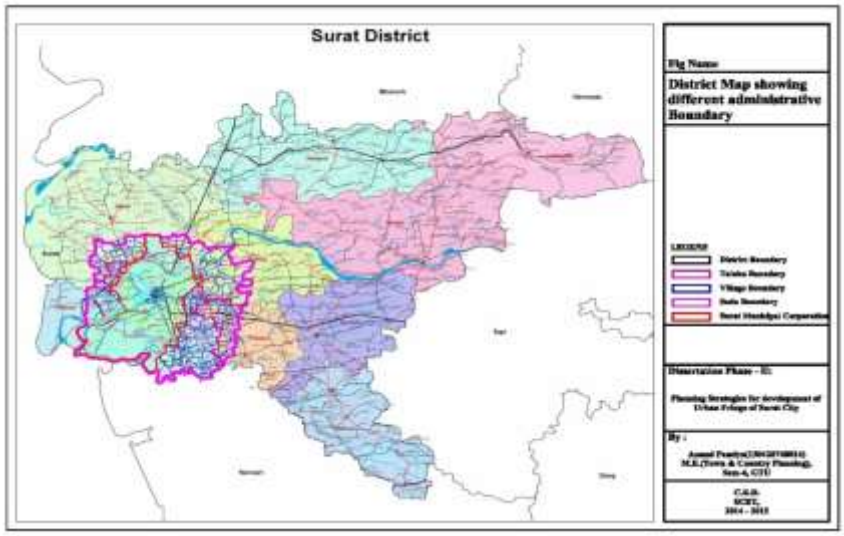
While formulating the proposals of revised development plan, the following broad principles have been kept in view.

- To minimize the spread of urbanization in agriculturally rich fertile irrigated area and to utilize maximum khar -land for future urbanization.
- Urban growth could not be continued to predetermine bounds but occurred along transport corridors hence possibilities of linear structure along the main corridor should be examined.
- Achievement of better environmental living condition by maximum utilization of existing infrastructure.
- To provide location for new development areas to ease pressure on city core.

II. Study Area: Surat City fringes

In the Surat Urban agglomeration, Surat Municipal Corporation is the centre of economical activities and the city forms the core of Surat Urban Development Authority. The development of the city has not kept pace with the increase in population and rate of urbanization and as such the urban activity has transcended the limit. The peripheral area of the Surat Municipal is experiencing

faster rate of growth than the rate of growth within the corporation core area. In SUDA area the villages around the periphery of Surat Municipal Corporation are developing into urban fringes. The villages in the peripheral area are experiencing the rapid growth and are having varied density pattern.



Delineated Area 2

2.1 Surat Urban Agglomeration

In the Surat Urban agglomeration, Surat Municipal Corporation is the centre of economical activities and the city forms the core of Surat Urban Development Authority. The development of the city has not kept pace with the increase in population and rate of urbanisation and as such the urban activity has transcended the limit. The peripheral area of the Surat Municipal is experiencing faster rate of growth than the rate of growth within the corporation core area. The villages around the periphery of Surat Municipal Corporation are developing into urban fringes. The villages in the peripheral area are experiencing the rapid growth and are having varied density pattern. To understand the population growth pattern, it is also necessary to examine the increase in S.M.C area limits, from time to time and compare the population earmarking, specific area. SMC limit has been increased in 1971, 1975, 1986, 1995 and 2004 respectively. With the increase of SMC limit population figures in subsequent Census data indicates high growth. Thus comparison of area wise population is essential.

Growth rate of SUDA area including SMC and SMC is consistence above 50%, Growth rate of SUDA is more than 25%. Population data is available for minimum last three decade of SMC city boundary and SUDA villages like Chorasi, Olpad, Palsana, Kamrej. 95 villages situated under SUDA boundary. SMC population is increased very higher growth rate comparison with SUDA boundary. Its mean that SMC is magnet point which is attract the people for living.

SMC and SUDA Population (1981-2011) compilatoinof Census Data

Sr. No.	Name of Area	Population			
		1981	*1991*	*2001*	*2011*
1	S M C	999373	1624135	2868603	4473143
TOTAL…..>>>>>>		999373	1624135	2868603	4473143
2	OLPAD TALUKA	16173	17799	20632	19657
3	CHORASI TALUKA	54030	68078	106974	162776
4	PALSANA TALUKA	20787	27886	49691	75783
5	KAMREJ TALUKA	28562	39920	56848	71409
TOTAL…..>>>>>>		120993	155501	236521	331739
GRAND TOTAL…..>>>		1120366	1779636	3105124	4804882

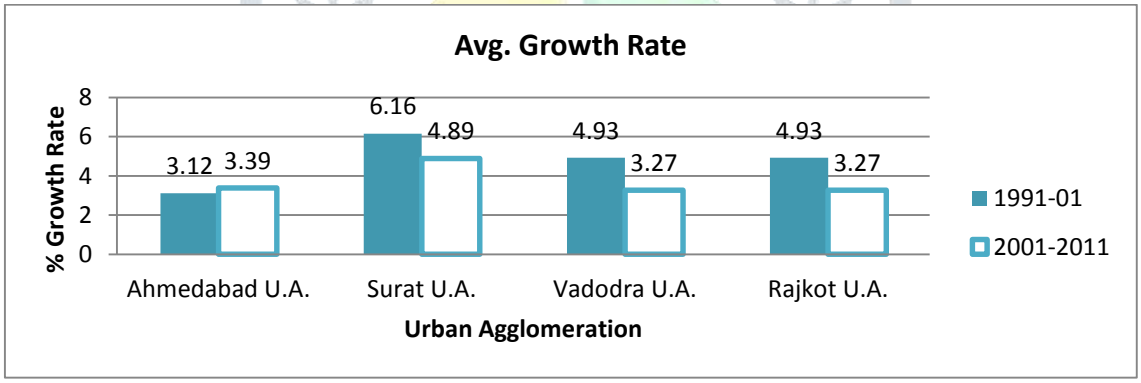
Table : 2

Source: Suda

Comparison with other urban agglomeration in the State

Sr. No.	Description	Total Population			Average growth rate	
		1991	*2001*	*2011*	*1991-01*	*2001-2011*
1.	Ahmedabad U.A.	3312216	4525013	6352254	3.12	3.39
2.	Surat U.A.	1518950	2811614	4585367	6.16	4.89
3.	Vadodra U.A.	1126824	1003015	1390933	4.93	3.27
4.	Rajkot U.A.	612456	1003015	1390933	4.93	3.27

Table: 3

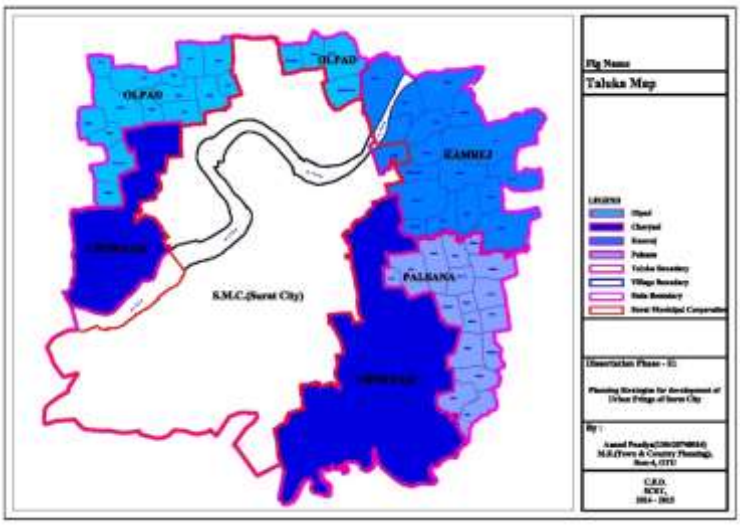


Graph 1

It clearly suggests that Surat urban agglomeration has highest decadal population growth rate. This may have happened due to employment opportunities in the manufacturing and other sectors in Surat.

2.2.PRESENT STATUES OF VILLAGES OF DELINEATED AREA

At present there are about 95 villages of four different Taluka, different sizes and different population come under the delineated area. The detail of villages according to their Taluka, Area and population is given in below tables, maps and figures



Taluka wise distribution of area 3
Source: Author

Number of village under SUDA

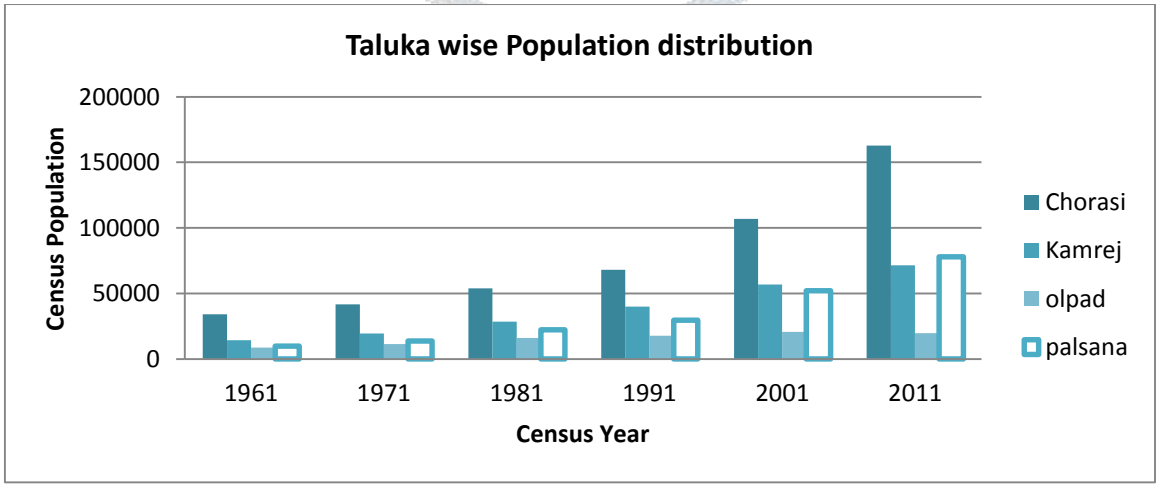
Sr.No	Taluka	Direction	Nos. of
1	Choryasi	NW to SMC	12
2	Olpad	NW to SMC	17
3	Kamrej	NE to SMC	17
4	Palsana	SE to SMC	17
TOTAL			95

Table: 4

Taluka wise population of village in delineated area

	1961	1971	1981	1991	2001	2011
Chorasi	34071	41805	54030	68085	106974	162776
Kamrej	14428	19580	28562	39920	56848	71409
Olpad	8830	11439	16173	17799	20632	19657
palsana	9798	13728	22228	29704	52067	77897

Table: 5



Graph 2: Taluka wise population distribution
Source: Author

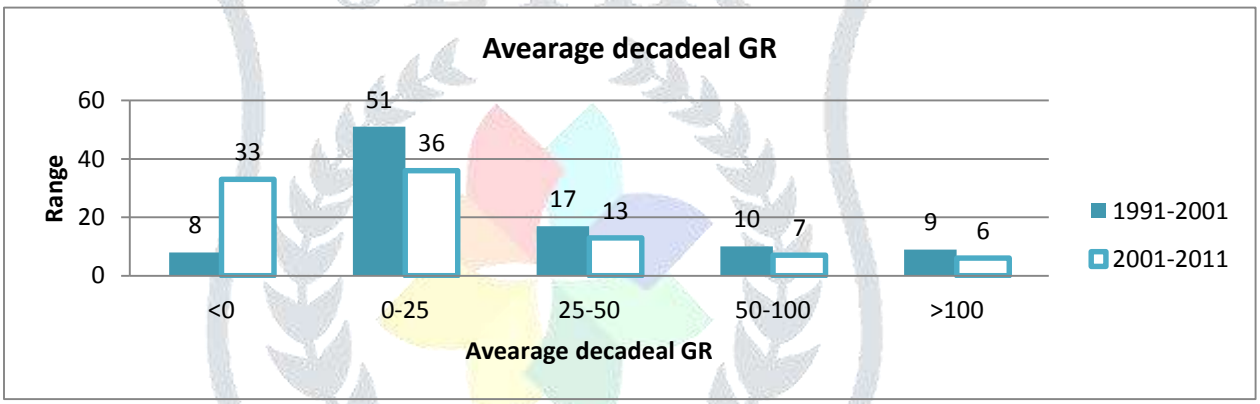
From above table-6.4 and fig-6.7 it is clearly visible that, highest population contribution is by Choryashi Taluka in all last five decade, which is followed by Kamrej, Palsana and Olpad Taluka give least contribution in population.

2.3.Growth Rate of Villages of Delineated Area

At present there are 95 villages in the study area of different size with different population. The last decadal growth rate (2001-2011) of delineated area is 122.66% which was 190.73% in 1991-2001. It shows that the villages are growing with a negative growth rate.

Sr. No.	Taluka	Year						Growth Rate(%)			
		1961	*1971*	*1981*	*1991*	*2001*	*2011*	*61-71*	*81-91*	*91-01*	*01-11*
1	Chorasi	34071	41805	54030	68085	106974	162776	22.70	26.01	57.12	52.16
2	Kamrej	14428	19580	28562	39920	56848	71409	35.71	39.77	42.40	25.61
3	Olpad	8830	11439	16173	17799	20632	19657	29.55	10.05	15.92	-4.73
4	Palsana	9798	13728	22228	29704	52067	77897	40.11	33.63	75.29	49.61
		69088	88523	122974	157499	238522	333750	128.07	109.47	190.73	122.66

Table : 6

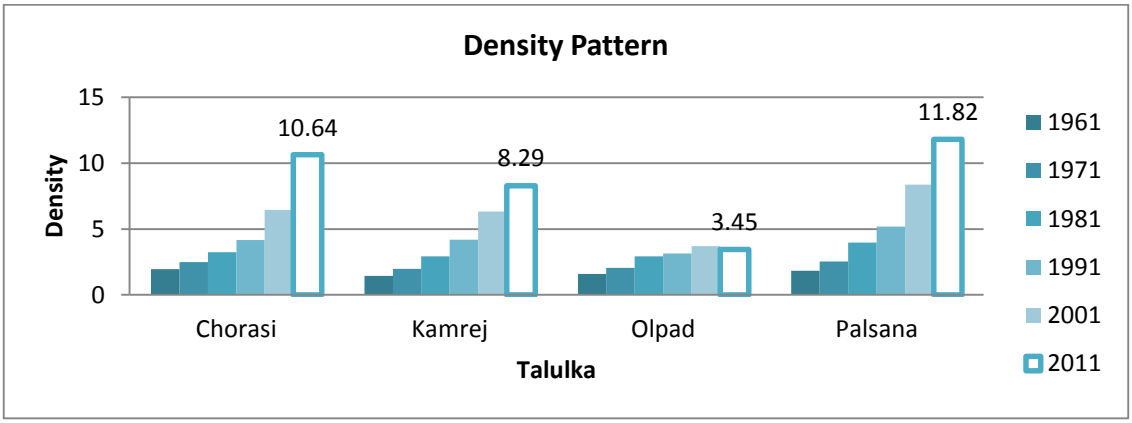


Graph 3

Density Pattern of Villages of Delineated Area Density indicates a relationship between a given area of land or floor space and population or families housed in that area. Density pattern depends upon the location. Density of population and intensity of building development in and around the heart of the city is higher in the outlaying locations. Such higher density often suffers from the lack of light, air, play ground, traffic congestion, and inadequate parking facilities, which directly affects the living condition and living quality.

Year	1961	1971	1981	1991	2001	2011
Chorasi	1.96	2.48	3.24	4.16	6.44	10.64
Kamrej	1.44	1.97	2.92	4.19	6.32	8.29
Olpad	1.58	2.05	2.93	3.14	3.71	3.45
Palsana	1.84	2.53	3.97	5.19	8.37	11.82

Table: 7

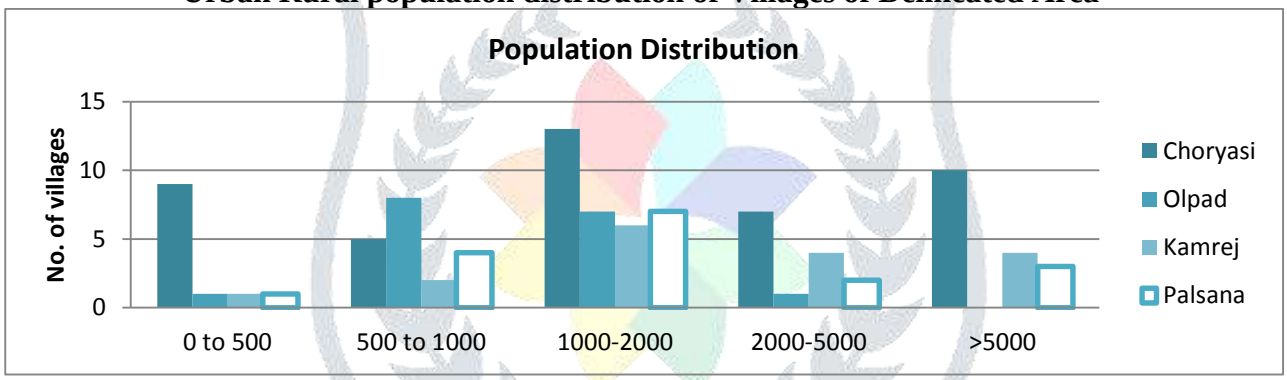


Graph 4

The analysis shows that the palsana Taluka has highest density in all five last decades,
which is followed by Kamrej,Choryashi and Olpad.

Graph shows that the most of the villages (75 out of 95) is growing with the relatively lower density rate. The villages located at the junction of the major transport corridor are flourishing with the higher density.

Urban Rural population distribution of Villages of Delineated Area



Graph 5

Above graph shows that the most of the villages (**78 out of 95**) is rural in character. The villages located at the junction of the major transport corridor are urban in nature that is about 17.

III. Conclusion OF URBAN FRINGE:

3.1. Physical infrastructure:

Water supply, sewerage, storm water drain, electricity and solid waste disposal facilities comes under the head of physical infrastructure.

3.1.1.Water Supply:

At present, SUDA area has no water supply system of its own. The main source of water for various villages in SUDA area is the ground water; being tapped through bore wells or the water supply schemes supported by GWSSB. With the rapid urbanization in the SUDA area water supply schemes are the utmost priority developmental work.

GWSSB (Gujarat Water Supply and Sewerage Board) has proposed and approved Variav Regional Water Supply project to cater the drinking water needs of 156 villages of Choryasi, Olpad and Kamrej taluka of Surat district which also includes a water filtration plant at the cost of Rs. 66.43 crores. Besides, a provision has also been made in this project for the requirements of 60 MLD of water for Surat Urban Development Authority (SUDA) and 5 MLD of water for the upcoming Special Economic Zone (SEZ). There is a

shortage of pure drinking water in a some part of surat district. Choyashi Taluka has flat land while other taluka has rocky soil so the storage of under ground water is not possible so the shortage arise.

GWSSB (Gujarat Water Supply and Sewerage Board) tries all the possible efforts to give pure drinking water to all dwellers of villages by various programs like IWSS (Individual Water Supply System), Sawajal Dhara, Sector Reform with 70 lpcd (considering only drinking water) by individual tap connection.

3.1.2.Sewerage Systems:

In SUDA area, there is a lack of adequate sewerage system with adequate treatment and

disposal system for any of the outgrowth area. Therefore, SUDA has given a top priority for a systematic sewerage system with sewage treatment and disposal facilities.

3.1.3.Storm Water Drainage:

Due to its location on banks of the river Tapi and on the bank of river Mindhola near the estuary of the Arabian Sea, the land drainage in SUDA area is relatively poor. In monsoon months, during heavy rains many areas of SUDA suffer flooding. Till now, such flooding was not posing a major problem as major part was agricultural area. With rapid development of SUDA area, it is necessary to see that the storm water is disposed off as early as possible to exert only minimum hardships on residential, commercial and industrial area.

3.1.4.Solid Waste Management:

At present in SUDA area, there is no scientific collection and disposal for solid waste available.

3.1.5. Roads:

SUDA has planned to provide new roads and improve existing roads for better movement of vehicles including outer ring road to reduce congestion on existing roads. This effort of SUDA would result in better connectivity.

IV. Acknowledgment

To Sejal.S.Bhagat for helping and giving guidance for this research topic.

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