CHAPTER 24

PROJECTED REQUIREMENTS

A Development Plan is prepared to allocate the resources optimally so as to meet the requirement of future population in a sustainable manner and also to enhance the quality of life of people.

In order to allocate the resources, future requirements need to be assessed. The study on projected requirements is about predicting the future as accurately as possible using all of the information available. Forecasting is a common statistical task in planning, where it helps to inform decisions about the scheduling of production, distribution and provides a guide to long-term strategic planning.

In this chapter, the data regarding various sectors of the Corporation area are projected using different principles for identifying the future requirements. The obtained values are compared with Urban and Regional Development Plans Formulation and Implementation (URDPFI) guidelines.

The projections have been done for population, work force participation rate and for the requirement of water supply, solid waste management, education, housing, health, traffic and transportation, energy and recreational facilities. The data obtained were already discussed in the chapters of respective sectors.

24.1 POPULATION

Population projections are the estimates of the population for future dates. The population of 2021, 2031 and 2041 for Kannur Corporation area is projected assuming that the same trend of population growth will be continued in future also.

The methods employed for projecting the population of the planning area are Arithmetical Increase method, Geometrical Increase method, Incremental Increase method and Decreasing Rate method. The average values of the above 4 methods is taken as the final population figures of 2021, 2031 and 2041.

24.1.1 ARITHEMETICAL INCREASE METHOD

In this method, the average increase of population per decade is calculated from the past records and added to the present population to find out the population in the next decade.

However, this method gives a low value of projected population. Figure.24.1 represents the graph showing the projected values obtained from Arithmetical Increase method.

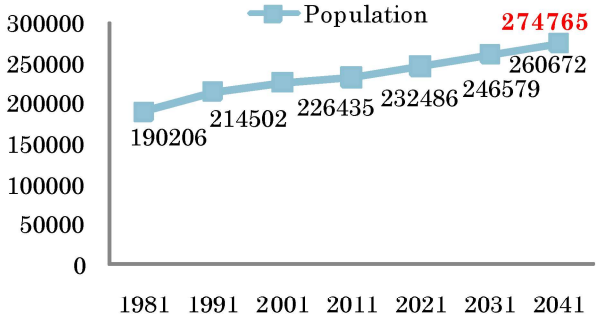

Figure.24.1 Projected population - Arithmetical increase method

The graph reveals that the decadal variation of total population has an increasing trend. The present population of the planning area is 2,32,486 as per 2011 census and the projected values are 2,46,579, 2,60,672 and 2,74,765 for the years 2021, 2031 and 2041 respectively.

24.1.2 GEOMETRICAL INCREASE METHOD

In this method, the percentage increase is assumed to be the rate of growth and the average of the percentage increase is used to find out the future increment in population. This method gives much higher values.

The projected population for the years 2021, 2031 and 2041 are 2,45,738, 2,59,745 and 2,74,550 respectively as shown in Figure.24.2. This method also shows that the decadal variation of total population has an increasing trend.

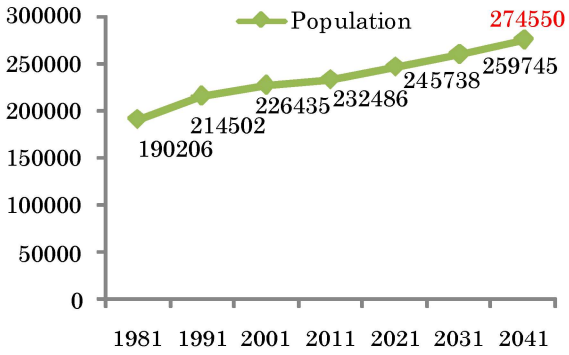

Figure.24.2 Projected population - Geometrical increase method

24.1.3 INCREMENTAL INCREASE METHOD

In this method, the increment in arithmetical increase is determined from the past decades and the average of the increment is added to the average increase.

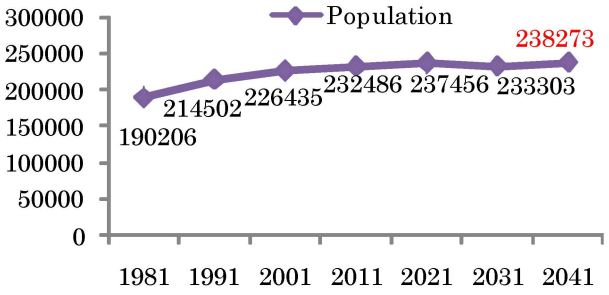

Figure.24.3 Projected population- Incremental increase method

The graphical representation showing the projected values is given in Figure.24.3. The figures obtained are 2,37,456, 2,33,303 and 2,38,273 for the years 2021, 2031 and 2041 respectively. It also indicates that the decadal variation of total population has an increasing trend.

24.1.4 DECREASING RATE METHOD

In this method, it is assumed that the rate of percentage increase decreases and the average decrease in the rate of growth is calculated. Then the percentage increase is modified by deducting the decrease in the rate of growth. Figure.24.4 shows the projected figures of population for 2021, 2031 and 2041. The projected population obtained by decreasing rate method shows a decreasing trend. The values obtained are 2,32,431, 2,32,313 and 2,32,195 respectively.

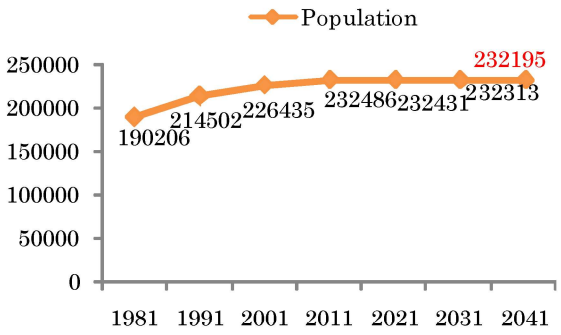

Figure.24.4 Projected population - Decreasing rate method

The values of projected total population obtained by the above four methods differs slightly and hence the average of the values obtained by four methods are taken as the population figures of Kannur city for the year 2021, 2031 and 2041 and are illustrated in Table.24.1

Table.24.1 Final projected population in Kannur Corporation area

Year	Arithmetical increase	Geometrical increase	Incremental increase	Decreasing rate	Average value of four methods
2021	2,46,579	2,45,738	2,37,456	2,32,431	**2,40,551**
2031	2,60,672	2,59,745	2,33,303	2,32,313	**2,46,508**
2041	2,74,765	2,74,550	2,38,273	2,32,195	**2,54,946**

Thus, it can be concluded that the total projected population figures of Kannur Corporation for the years 2021, 2031 and 2041 will be 2,40,551, 2,46,508 and 2,54,946 respectively.

24.2 WORK FORCE

The Work Force Participation Rate (WFPR) is an important factor which determines the urban trend of the planning area. Hence WFPR for the years 2021, 2031 and 2041 is projected using the trend line method.

Figure.24.5 gives the projected Work Force Participation Rate of the Corporation area which reveals that the actual WFPR has an increasing trend but it is found to be low when compared to the district and state average as explained in Chapter 5 - Occupational Structure. The projected values for the years 2021, 2031 and 2041 obtained from the trend line method are 29.19%, 30.52% and 31.85% respectively.

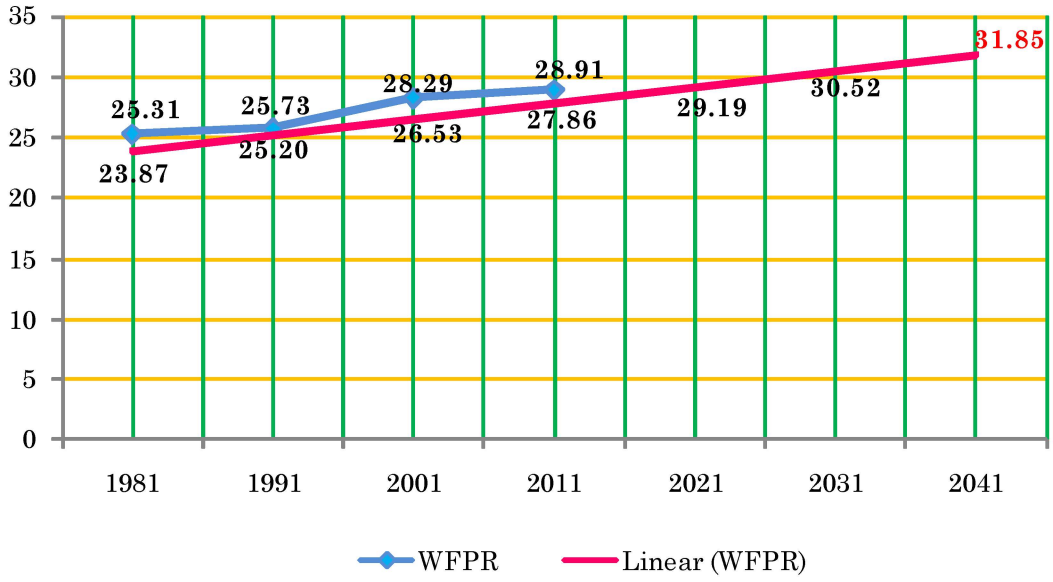

Figure.24.5 Projected WFPR

24.3 WATER SUPPLY

The projections on future demand for water are detailed in Table.24.2. As per the projected data, the total storage capacity required during 2021, 2031 and 2041 are 60.60 MLD, 62.10 MLD and 64.23 MLD respectively and ultimate demand for water in the Corporation area is estimated as 65 MLD. The domestic demand, non-domestic demand, fire demand and unaccounted consumption are taken into account to calculate the future

demand of water in the study area.

Under AMRUT scheme, there are many proposals like rehabilitation of existing old network, valves, house service connection and inter connections with existing lines and providing flow metres etc. including road reformation charges which all may increase the per capita supply from 90 LPCD to 150 LPCD, enhancement of treatment plant from 30 MLD to 40 MLD including modernisation of existing treatment plant which may result in increasing the per capita supply from 90 LPCD to 100 LPCD. Laying of gravity main from JICA project at Mangattuparamba to Pallikkunnu OHSR of capacity 24 LL for Pallikunnu and Puzhathi providing house connection and inter connection with existing line, laying conveyance main/pumping main from Melechovva to OHSR at Edakkad including supply erection of pump sets, construction of a 14 LL capacity OHSR at Thottada of Edakkad Zone, laying of new distribution line and providing new service connections at Elayavoor and Edakkad Zones etc. Thus the future demand can be met from these projects.

Table.24.2 Projection – Water Supply

Year	2021	2031	2041	Remarks
Projected Population	2,40,551	2,46,508	2,54,946	
a) Domestic Demand (MLD)	32.47	33.28	34.42	135 lpcd
b) Non Domestic Demand (MLD)	6.75	6.92	7.16	20.8% of a
c) Fire Demand(MLD)	0.39	0.40	0.42	1% (a+b)
Unaccounted - For Water (UFW)	5.94	6.09	6.30	15% (a+b+c)
Total Water Demand for the study area(MLD)	45.56	46.69	48.29	
Storage capacity required	15.04	15.41	15.94	33% of supply
Total storage capacity required	**60.60**	**62.10**	**64.23**	

24.4 SOLID WASTE AND SEWERAGE

The amount of solid waste that is likely to be generated and collected during 2021, 2031 and 2041 is projected based on URDPFI standard and is given in Table.24.3 which reveals that the projected value of solid waste including 30% extra likely to be generated is estimated as 152 Ton/day for the year 2041. The future requirement of the capacity of sewerage treatment plant in the Corporation area is given in Table.24.4. As per planning standards, the total waste water that will be generated in 2041 is forecast as 61.95 MLD.

Table.24.3 Projection - Solid Waste Management

Year	2021	2031	2041	Remarks
Projected Population	2,40,551	2,46,508	2,54,946	
Solid waste generated (Ton/day)	108.25	110.93	114.73	Per capita generation of waste per day- 450gms
Including 30% extra(Ton/day)	**140.72**	**144.21**	**149.14**	

Table.24.4 Sewerage treatment plant capacity requirement

Year	2021	2031	2041	Remarks
Projected Population	2,40,551	2,46,508	2,54,946	
Waste water(Litre/day)	25979508	26622891	27534141	Per capita generation of waste water per day- 108 Litres
Peak factor	2.25	2.25	2.25	
Total waste water (MLD)	**58.45**	**59.90**	**61.95**	

24.5 ENERGY

The projection detail of energy sector is given in Table.24.5. As per the planning standards, there is no shortage in the case of 110 KV substation, petrol pumps and LPG godown/gas godowns.

Table.24.5 Projection details of energy sector

Category	As per planning standard	Existing Number	Demand 2041	Shortage
110KV substation	1/ 1.5 lakh	2	2	Nil
Petrol pumps	-	25		Nil
LPG Godown/Gas Godown	1/ 40,000 to 1/50,000	Nil	5 to 6	Nil

24.6 EDUCATION

Based on URDPFI Guidelines, the requirement of educational institutions for 2041 has been projected and the shortage calculated is given in Table.24.6. According to URDPFI Guidelines, future demand of educational institutions by the year 2041 is expected mainly for Schools for physically challenged, Engineering College and Medical College etc. At present, such institutions are not there within the planning area. However, these facilities are available in the adjacent Panchayaths.

Also, the existing educational institutions like Primary school, Senior secondary school, Schools for mentally challenged, ITC/ITI, Arts and Science College, Polytechnic, Other Professional Colleges, Nursing and Paramedical Institutes etc. can meet their future demand too.

Table.24.6 Future Demand of educational institutions based on URDPFI guidelines

Sl. No.	Category	Existing Nos.	Standard Recommended	Demand 2041	Shortage
1	Primary school	53	1 in 5,000	51	Nil
2	Senior secondary school	73	1 in 75,000	3	Nil
3	School for physically challenged	Nil	1 in 45,000	6	**6**
4	School for mentally challenged	2	1 in 10 lakh	0	Nil
5	I.T.C/I.T.I	2	1 in 10 lakh	0	Nil
6	Arts & Science College	6	1 in 1.25 lakh	2	Nil
7	Polytechnic	1	1 in 10 lakh	0	Nil
8	Engineering College	Nil	1 in 10 lakh	0	**1**

9	Medical College	Nil	1 in 10 lakh	0	**1**
10	Other Professional Colleges	5	1 in 10 lakh	0	Nil
11	Nursing & Paramedical Institutes	5	1 in 10 lakh	0	Nil

24.7 HEALTH

The demand for health facilities for the year 2041 has been projected according to URDPFI Planning standards. Data regarding the projections is given in Table.24.7 which indicates that, 11 dispensaries, 2 multi-speciality hospitals and 1 intermediate hospital are required to serve the people of the planning area by 2041.

Table.24.7 Projection of health facilities Guidelines

Sl. No.	Category	Standards Recommended	No. of Beds	Existing no. of units	Demand of units by 2041	Shortage	Existing no. of Beds	Demand of beds 2041	Shortage
1	Dispensary	1/15,000 population	-	6	17	11	Nil	Nil	Nil
2	Multi - Speciality Hospital	1/1 Lakh population	200	1	3	2	500	200	Nil
3	Speciality Hospital	1/1 Lakh population	200	3	3	Nil	1100	600	Nil
4	Intermediate Hospital (Category A)	1/1 Lakh population	200	2	3	1	250	400	**150**
5	General hospital	1/2.5 lakh population	500	1	1	Nil	616	500	Nil

24.8 HOUSING

Based on planning standards, the housing demand is calculated by considering a population of 4.5 persons per dwelling unit for the years 2021, 2031 and 2041. The details are given in Table.24.8. The total shortage of houses by 2041 will be 12,658 including the existing shortage of 6,884 houses.

Table.24.8 Projections - Housing Demand

Year	Population	Existing no. of houses	No. of houses required	Replacing of dilapidated and old houses (8% of total houses)	Existing housing shortage	Additional no. of houses required for the added population		Total shortage
						Added population	Required no. of houses	
2011	2,32,486	48,673	51,664	3,894	6,884			6,884
2021	2,40,551					8,065	1,792	8,677
2031	2,46,508					5,957	1,324	10,000
2041	2,58,469					8,438	1875	**11875**

24.9 RECREATION AND CIVIC AMENITIES

At present, the recreational and civic amenities are in the Corporation area are not in the extent of requirements of future population as per URDPFI standards. The existing facilities as well as the future requirements of recreational facilities based on these standards are given in Table.24.9.

24.10 SOCIAL WELFARE

The projection details of social welfare requirements are given in Table.24.10. As per planning standards, there is no shortage in the case of Anganwadi, Old age homes and Orphanages.

Table.24.9 Projected details of recreational and civic amenities

Name	As per planning standard	Existing Value/Number	Requirement by 2041	Shortage by 2041
Open Space	1.4 Ha - 1.6 Ha per 1000 persons	32.186 Ha	182.10 Ha to 159.34Ha	149.914 Ha to 127.154 Ha
Community Hall	1/15,000	57	17	Nil
Police Station	1/90,000	5	3	Nil
Fire Station	1/2 lakh	Nil	1	1
Post Office	1/15,000	7	17	10

Table.24.10 Projected details of social welfare requirements

Name	As per planning standard	Existing Number	Requirement by 2041	Shortage by 2041
Anganwadi – Housing area/cluster	1/5,000	200	51	Nil
Old age homes	1/5 lakh	5	1	Nil
Orphanages	1/10 lakh	18	0	Nil

24.11 TRAFFIC AND TRANSPORTATION

The traffic and transportation has great significance in the development of an area and hence the projection of requirements in this sector has to be done with great care and attention. The study report of National Transportation Planning and Research Centre (NATPAC) reveals that at present, the V/C ratio of all road sections of National Highway 66 is greater than one indicating that the volume of traffic has already exceeded the road capacity in the base year itself. Moreover, the projected value of V/C ratio (2036) is found high in most of the roads which necessitates the widening of roads in future. Similarly, internal ring road of the Corporation area from Caltex Junction to Caltex Junction via Railway Station, Stadium will be the worst affected network by the year 2036**.** Important collector and sub arterial roads in the planning area are also exceeding their capacity gradually focusing attention for further strengthening and widening. The projected traffic on the existing road network implies that the existing road network would not be able to handle the traffic in the horizon years without up gradation of the transport infrastructure facilities. Augmentation of the capacity of the existing road network by strengthening/widening and the construction of missing links, flyovers, bypasses and link roads is a must considering the dramatic increase in the traffic volume.

Figure.24.6 shows the projected V/C ratio of major roads forecast for the year 2036 and Table.24.11 gives the estimated daily traffic for different horizon years on various road stretches in Kannur Corporation area.

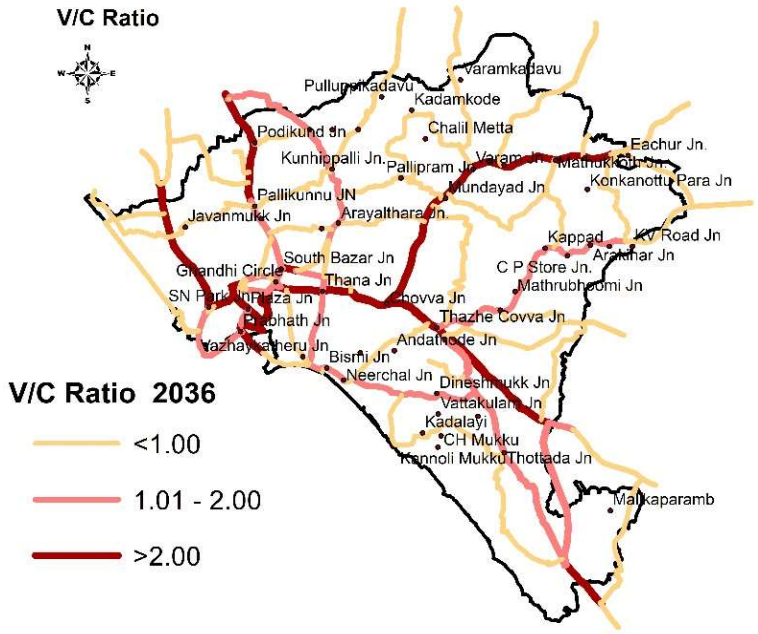

Figure.24.6 Projection - V/C ratio in major road stretches

Table.24.11 Projection - V/C ratio in major road stretches

Sl. No.	Name of Road section	Capacity (PCU)	2016		2026		2036	
			Traffic Volume (PCU)	V/C Ratio	Traffic Volume (PCU)	V/C Ratio	Traffic Volume (PCU)	V/C Ratio
1. NH 66								
1	Edakkad - Nadal Gate	1,500	1,534	1.02	2,498	1.67	3,698	2.47
2	Nadal Gate - ThottadaJn	1,500	708	0.47	1,152	0.77	1,706	1.14
3	ThottadaJn - JTS Jn	1,500	932	0.62	1,518	1.01	2,247	1.5
4	JTS Jn - ThazheChovva bypass	1,500	698	0.47	1,137	0.76	1,683	1.12
5	ThazheChovva bypass - MeleChovva	1,500	2,869	1.91	4,672	3.11	6,916	4.61
6	MeleChovva - Thana Jn	3,600	4,143	1.15	6,748	1.87	9,988	2.77
7	Thana Jn - ManoramaJn	3,600	4,316	1.2	7,029	1.95	10,405	2.89
8	ManoramaJn - Caltex Jn	3,600	3,798	1.05	6,186	1.72	9,156	2.54
9	Caltex Jn - Gandhi Circle	3,600	2,633	0.73	4,289	1.19	6,349	1.76
10	Gandhi Circle - South Bazaar	3,600	2,319	0.64	3,777	1.05	5,590	1.55
11	South Bazaar - AKG Hospital	3,600	2,889	0.8	4,705	1.31	6,965	1.93

12	AKG Hospital - Pallikkunnu	3,600	2,675	0.74	4,357	1.21	6,450	1.79
13	Pallikkunnu - Podikkundu	3,000	2,612	0.87	4,254	1.42	6,297	2.1
14	Podikkundu - Stylo Corner	1,500	2,412	1.61	3,928	2.62	5,815	3.88
15	Stylo Corner - PuthiyaTheru	1,500	2,550	1.7	4,153	2.77	6,147	4.1
16	PuthiyaTheru - Highway Jn	1,500	2,343	1.56	3,817	2.54	5,649	3.77
2. Edakkad to Kadambur (outside study area)								
17	Edakkad - Kadambur	900	287	0.32	385	0.43	469	0.52
3. NH bypass								
18	Nadal Gate - ChalaJn	1,500	842	0.56	1,371	0.91	2,029	1.35
19	ChalaJn - ThazheChovva bypass	1,500	2,340	1.56	3,812	2.54	5,642	3.76
4. SH-38: ThazheChovva to Kuthuparamba								
20	ChalaJn - Chala East	1,200	931	0.78	1,378	1.15	1,852	1.54
5. Chala to Chembilode to Mowancherry (Outside study area)								
21	Chala East - Movancherry	1,200	166	0.14	245	0.2	329	0.27
6. Thillannur to Attadappa road								
22	Thillannur - Attadappa	900	99	0.11	132	0.15	161	0.18
7. ThazheChovva to Movancherry road								
23	ThazheChovva - Thillannur	1,200	561	0.47	913	0.76	1,351	1.13
24	Thillannur - Kappad	1,200	561	0.47	913	0.76	1,351	1.13
25	Kappad - Pallipoyil	1,200	561	0.47	913	0.76	1,351	1.13
26	Pallipoyil - Movancherry	1,200	476	0.4	775	0.65	1,148	0.96
8. MeleChovva to Mattannur								
27	MeleChovva - Mundayad	1,200	1,400	1.17	2,280	1.9	3,376	2.81
28	Mundayad - Vaaram	1,200	1,731	1.44	2,819	2.35	4,173	3.48
29	Vaaram - Valiyannur	1,200	1,367	1.14	2,226	1.85	3,295	2.75
30	Valiyannur - Mathukoth	1,200	1,319	1.1	2,148	1.79	3,179	2.65
31	Mathukoth - Eachur	1,200	1,176	0.98	1,915	1.6	2,834	2.36
9. VaaramJn to Kannadiparamba								
32	Varam - Kannadiparamba	900	303	0.34	407	0.45	496	0.55
10. Valiyannoor to Naayattupara								
33	Valiyannur - Mattannoor	900	385	0.43	517	0.57	631	0.7
11. Kunhippally to Kannadiparamba								
34	Kunhippally -	900	411	0.46	552	0.61	673	0.75

	Kannadiparamba							
12. South Bazaar to Sylo Corner via Kunhippally								
35	South Bazaar - Kannothumchal Rd	900	1,277	1.42	1,716	1.91	2,092	2.32
36	Kannothumchal Rd - Korjan School Jn	900	446	0.5	599	0.67	730	0.81
37	Korjan School Jn - Kakkad	900	908	1.01	1,220	1.36	1,488	1.65
38	Kakkad - Kunhippally	900	822	0.91	1,105	1.23	1,347	1.5
39	Kunhippally - Kootali	900	605	0.67	813	0.9	991	1.1
40	Kootali - Stylo Corner	900	803	0.89	1,078	1.2	1,315	1.46
13. Puthiyatheru to Kattampally (Outside study area)								
41	PuthiyaTheru - Kattampally	1,200	872	0.73	1,290	1.08	1,734	1.44
14. SN Park Jn to Azheekkode								
42	S N Park - Chalad	1,200	1,590	1.32	2,353	1.96	3,162	2.64
43	Chalad - Alavil	1,200	1,486	1.24	2,199	1.83	2,955	2.46
15. Azheekkode to Highway Jn on NH 66 (outside study area)								
44	Azheekkode - Highway Jn	1,200	1,074	0.89	1,589	1.32	2,136	1.78
16. Azheekkode to Dharmadam Beach road via Payyambalam Beach								
45	Azheekkode - Payyambalam Beach	900	81	0.09	109	0.12	133	0.15
46	Payyambalam Beach - Girls HS	900	191	0.21	257	0.29	313	0.35
17. Gandhi Circle to Gandhi Circle via Railway station								
47	Gandhi Circle - Civil Station Jn	2,400	1,246	0.52	1,844	0.77	2,479	1.03
48	Civil Station Jn - Police Club Jn	2,400	2,355	0.98	3,486	1.45	4,685	1.95
49	Police Club Jn - AshirwadJn	1,200	3,101	2.58	4,590	3.83	6,169	5.14
50	AshirwadJn - ThavakkaraJn	1,200	2,594	2.16	3,840	3.2	5,160	4.3
51	ThavakkaraJn - Plaza Jn	1,200	1,623	1.35	2,402	2	3,228	2.69
52	Plaza Jn - Railway Station	1,200	2,235	1.86	3,308	2.76	4,446	3.71
53	Railway Station - MuneeswaranKovil	1,200	2,247	1.87	3,325	2.77	4,469	3.72
54	MuneeswaranKovil - Padannapalam Rd	1,200	2,269	1.89	3,359	2.8	4,514	3.76

55	Padannapalam Rd - Stadium Jn	1,200	1,682	1.4	2,490	2.07	3,346	2.79
56	Stadium Jn - Town Square	2,900	1,912	0.66	2,830	0.98	3,804	1.31
57	Town Square - Gandhi Circle	2,900	1,721	0.59	2,548	0.88	3,424	1.18
18. Caltex Jn to Civil Station Jn								
58	Caltex Jn - Civil Station Jn	1,200	1,299	1.08	1,922	1.6	2,583	2.15
19. Plaza Jn to City Jn via PrabhatJn								
59	Plaza Jn - SBI Jn	2,900	1,803	0.62	2,668	0.92	3,586	1.24
60	SBI Jn - PrabhatJn	1,200	1,870	1.56	2,768	2.31	3,720	3.1
61	PrabhatJn - Hospital Bus Stand Jn	1,200	1,368	1.14	2,024	1.69	2,720	2.27
62	Hospital Bus Stand Jn - City Jn	1,200	-	-	-	-	-	-
20. Prabhat to MuneeswaranKovilJn via S N Park								
63	PrabhatJn - Govt HS	1,200	948	0.79	1,403	1.17	1,885	1.57
64	Govt HS - SN Park Jn	1,200	758	0.63	1,122	0.94	1,508	1.26
65	SN Park Jn - MuneeswaranKovil	1,200	1,711	1.43	2,532	2.11	3,403	2.84
21. Thavakkara to SBI Jn via New Bus Station Jn								
66	ThavakkaraJn - New Bus Station Jn	1,200	3,554	2.96	5,261	4.38	7,070	5.89
67	New Bus Station Jn - SBI Jn	1,200	1,912	1.59	2,830	2.36	3,804	3.17
22. Other roads								
68	Police Club Jn - Stadium Jn	2,400	1,855	0.77	2,745	1.14	3,689	1.54
69	AashirwadJn - Police Club Jn	1,200	1,561	1.3	2,311	1.93	3,105	2.59
70	Town Square - AKG Hospital	1,200	554	0.46	819	0.68	1,101	0.92
71	City Jn - ManoramaJn	900	-	-	-	-	-	-
72	City Jn - Thana Jn	900	640	0.71	860	0.96	1,048	1.16
73	Thana Jn - Dhanalekshmi	900	688	0.76	925	1.03	1,127	1.25
74	Dhanalekshmi - Korjan School Jn	900	497	0.55	667	0.74	813	0.9
75	South Bazaar - Dhanalekshmi	900	948	1.05	1,274	1.42	1,553	1.73

76	Dhanalekshmi - Kannothumchal	900	501	0.56	673	0.75	821	0.91
77	ThazheChovva - Thayyil	900	501	0.56	673	0.75	820	0.91
78	Thayyil - City Jn	900	840	0.93	1,128	1.25	1,375	1.53
79	JTS Jn - Thayyil	900	796	0.88	1,070	1.19	1,304	1.45
80	Kizhuthally - Avera	900	-	-	-	-	-	-
81	ThottadaJn - Kuruva	900	299	0.33	401	0.45	489	0.54
82	NadalJn - ThottadaJn	900	-	-	-	-	-	-
83	Chala - Attadappa	900	-	-	-	-	-	-
84	ThazheChovva - Attadappa	900	-	-	-	-	-	-
85	ThazheChovva - Mundayad	900	-	-	-	-	-	-
86	Mundoor Indoor Stadium - CheloraGHS	900	103	0.11	138	0.15	168	0.19
87	Kappad - Mathukoth	900	-	-	-	-	-	-
88	Eachur - Pallipoyil	900	84	0.09	112	0.12	137	0.15
89	Movancherry - Eachur	900	445	0.49	598	0.66	729	0.81
90	Vattapoyil - MavilaChal	900	-	-	-	-	-	-
91	Varam - Kadankod	900	293	0.33	393	0.44	479	0.53
92	Kadankod - Pallippuram	900	-	-	-	-	-	-
93	Kakkad - Mundayad	900	294	0.33	395	0.44	482	0.54
94	Mudayad - Arayalthara	900	-	-	-	-	-	-
95	Thalappavu - Kakkad	900	-	-	-	-	-	-
96	Kunhippally - Pallikkunnu	900	311	0.35	418	0.46	509	0.57
97	Kottali - Podikkundu	900	388	0.43	522	0.58	636	0.71
98	DD Kendra - Kanathur	900	-	-	-	-	-	-
99	DD Kendra - Raja's HS	900	-	-	-	-	-	-
100	Pallikkunnu - Chalad	900	328	0.36	440	0.49	537	0.6
101	Chalad - Palliyamoola	900	45	0.05	60	0.07	74	0.08
102	Manal - Palliyamoola	900	-	-	-	-	-	-

24.12 INFERENCE

As per URDPFI guidelines, the demand for water supply, solid waste and sewerage, energy, education, health, housing, recreation and civic amenities, social welfare, traffic and transportation for the projected population for the years 2021, 2031 and 2041 are calculated.

In the case of water supply, according to the standards, the total storage capacity required during 2021, 2031 and 2041 is 60.60 MLD, 62.10 MLD and 64.23 MLD respectively and ultimate demand for water in is estimated 65 MLD. Since there are so many upcoming projects, the demand can be met from them.

In the case of solid waste and sewerage, the projected value of solid waste including 30% extra likely to be generated is estimated as 150 Ton/day for the year 2041 and 61.95 MLD of total waste water which necessitate the improvement of existing capacities.

There is no shortage in the sectors like energy as well as social welfare for the projected population. But the future demand of educational institutions by the year 2041 is expected mainly for Schools for physically challenged, Engineering College and Medical College etc. which are absent in the planning area even though these facilities are available in the adjacent Panchayaths.

In the case of health sector, 11 dispensaries, 2 multi-speciality hospitals and 1 intermediate hospital are required by the year 2041. The total shortage of houses by 2041 will be 11,875 including the existing shortage of 6,884 houses.

Also, the recreational and civic amenities in the Corporation area are not in the requirements of future population as per URDPFI standards which should be improved.

The projected value of V/C ratio (2036) is found high in most of the roads which necessitates the widening of roads in future. Otherwise, these roads are not able to handle the traffic in the horizon year. Augmentation of the capacity of the existing road network by strengthening/widening and the construction of missing links, flyovers, bypasses and link roads are necessary for considering the dramatic increase in the traffic volume.