# Chapter - II

#### **DEVELOPMENT PLANNING IN CHENNAI METROPOLITAN AREA**

Any new plan for the CMA should build on the information of the past. The following are the major plans that had been prepared for Chennai.

- (i) General Town Planning Scheme (1957) prepared by Madras Corporation
- (ii) The Madras Interim Plan [1967] prepared by D.T.P., Govt. of Tamilnadu
- (iii) Madras Metropolitan Plan 1971-91 (1971) prepared by multi- agency group and published by RD&LA Dept., Govt. of Tamilnadu
- (iv) Madras Urban Development Project (1974) prepared by MMDA (now CMDA)
- (v) Master Plan for MMA (1975) prepared by MMDA (now CMDA)
- (vi) Structure Plan for Chennai Metropolitan Area (1980) prepared by CMDA with Alan Turner & Associates as consultants

## General Town Planning Scheme (1957)

2.02 The General Town Planning Scheme was prepared by the Madras Corporation and submitted to the then Madras State Government in 1957. The aim of the General Town Planning scheme was to provide for the organised growth of the then Madras City (129 Sq.km.). The Scheme was then remitted to the Directorate of Town Planning, Madras for technical scrutiny. The DTP after careful scrutiny of the scheme had recommended that more detailed and extensive studies in depth would have to be carried out before the scheme could be finalised. Then it was decided to prepare a comprehensive development plan for Madras Metropolitan Area and as a first step to prepare Madras Interim Plan (1967).

#### Madras Interim Plan (1967)

2.03 The Directorate of Town Planning had prepared the Madras Interim Plan in 1967. In the Plan, the problems of the City were viewed and appraised in the urban context of the urban area being the first of its kind; the Plan devoted itself purely to physical aspects of development and recommended that the fiscal plan should be separately worked out. It was also envisaged that the Master Plan would be in two stages viz. the preparation of an Interim General Plan in the first instance and Comprehensive Development Plan in the second.

#### Madras Metropolitan Plan 1971-91 (1971)

- 2.04 To explore avenues for securing financial assistance for the city development from the national and international institutions, it was found then that the plan prepared earlier were inadequate in regard to long range prospective and also the scale of financial effort needed to direct the future development in orderly manner. Then the Government decided to prepare a report which would not only indicate the dimensions of the problems ahead, but also the necessary efforts physical and financial needed to make Madras a living city.
- 2.05 The proposals made in the Madras Metropolitan Plan 1971-1991 mainly contained the following:
  - (1) Strategy for physical growth of urban areas
  - (2) Programmes for land acquisition for urban expansion, provision of infrastructure for transport, water supply, sewerage and drainage, slum clearance, provision of facilities for education, health, recreation and refuse collection
  - (3) Action to bring revenue base in the area in line with the levels of expenditure and
  - (4) Recommendation on institutional set up required to implement the Plan.
- 2.06 The Madras Metropolitan Plan achieved its aim of looking to the longer term future and costing of various programmes of developments. It also clearly illustrated the magnitude of the tasks faced in managing the development of the Metropolitan Area.

## Madras Urban Development Project (1974)

- 2.07 MMDA (now CMDA) was set up as an adhoc body in 1973 and became statutory in 1975 (under the Tamil Nadu Town and Country Planning Act, 1971 which superceded the then existed Madras State Town Planning Act, 1920).
- 2.08 The Madras Urban Development Project report was prepared by MMDA updating the earlier data and presenting a more viable case for exploring additional resources for investments from various financial institutions including World Bank. The report identifyied the overall problems and the needs of the metropolitan area
- 2.09 It highlighted the then present deficiencies and future requirements in some of the critical sectors and suggested an investment programme for 1974-79. It also stressed the need for land use control.

2.10 The Madras Urban Development Project report represented a further shift towards concentrating on the positive aspects of managing the development of the MMA and it was concerned primarily with presenting a package of realistic projects that could be implemented within a period of 5 years. The Madras Urban Development Project became the basis for appraisal of projects under the World Bank assisted Madras Urban Development Project-I (1977-82) executed at a cost of Rs.56 Crores, MUDP-II (1983-88) executed at a cost of Rs.73.9 Crores and TNUDP-I Chennai Metropolitan Area component executed at a cost of about Rs.450 Crores.

### Master Plan For MMA (1975)

- 2.11 As per the Tamil Nadu Town and Country Planning Act, 1971 one of the statutory functions of CMDA is to prepare Master Plan for the Metropolitan Area. Drawing heavily on the Madras Urban Development Project report, the Master Plan was prepared also updating the land use surveys conducted in 1964. Land use and Development Control Regulations had become part of the Master Plan. On the resource aspects, it echoed the recommendations of the Madras Metropolitan Plan, 1971.
- 2.12 The first Master Plan for CMA laid down policies and programmes for overall development of CMA taking a long-term view of the requirements. As stated in its preamble, in particular, dealt with the following aspects:
  - (1) The present trends of the population growth and the future population in the Metropolitan Area and approximate distribution of population in various parts of this Area
  - (2) The economic level and activities in the Metropolitan Area and policies for future economic growth as well as future location of economic activities
  - (3) The (then) present physical structure of the Area and policies for its future physical development
  - (4) The (then) present traffic and transportation and circulation pattern and policies and programmes for efficient functioning of these sectors
  - (5) The manner in which land and buildings in the area should be used and allocation or reservation of land for residential, commercial, industrial, institutional, recreational, agricultural and other uses taking into consideration the future needs of the population that will live in the Area
  - (6) The requirements in respect of urban infrastructure viz. water supply and drainage, housing, education, medical facilities and recreation and the policies for their future development

- (7) Policies and programmes for sectoral development as well as detailed development of areas for housing, shopping, industries, civic amenities, educational and cultural and other related facilities
- (8) Regulation of the use-zones, the location, height, size of buildings, size of yards, and other open spaces to be left in and around the buildings, and also regulation of land sub-division, architectural and advertisement control and preservation of trees, historical and scenic areas and
- (9) The areas proposed for acquisition for purposes of urban development.

2.13 Salient features/main recommendations made in the first Master Plan are:

- (1) The proposed population for 1991 and 2001 for Chennai City (128 Sq.m. then) was 3.60 million and 4.0 million respectively and for CMA was 5.80 million and 7.10 million respectively.
- (2) Considering the economic characteristics of the metropolitan area (then), the Plan listed the following points relating to economic policy:
  - (a) The State income and income of the Metropolitan Area are low. It is apparent that the incomes cannot sustain, without outside assistance; massive expenditure on infrastructure in urban areas which in themselves are necessary to promote development. Development projects would need to be oriented towards raising levels of income both at the State level and the Metropolitan level.
  - (b) The State ranks third (then) in the country in the level of industrialisation but it is far behind Maharashtra and West Bengal. Only large-scale industrialisation can raise income levels since much effort has already been made to increase agricultural incomes and further efforts in this sector are not likely to yield higher results due to constraints like non-availability of cultivable waste lands and inadequate water for irrigation.
  - (c) Madras is predominantly an administrative and commercial centre. Its industries are of the service and light type with medium range employment and this character needs to be strengthened. The industrial policy for the area should therefore be oriented towards small scale and service oriented industries to satisfy, employment needs of the resident population rather than location of large-scale industries which breed a host of ancillary industries. Such large-scale industrial activity could be more usefully located in the hinter land of Madras

Metropolitan Area. Further utilisation of the capacities of existing industrial units should also be ensured without correspondingly increasing employment in order to raise industrial incomes.

- (d) In view of the availability of a modern and major port, export oriented industries with a "high value added" character will need to be considered.
- (e) Tertiary sector employment would need to be raised but all employment increase should be within the framework of the State employment policy in order to regulate migration.
- (3) The only way to regulate economic activity, optimise the use of existing (then) infrastructure facilities and plan their expansion to meet future needs in an area is to regulate land use and building activity therein.
- (4) The strategy of developments of radial corridors linked to satellite towns was found most suitable (then). The form suggested for future development of MMA envisaged creation of six major urban nodes at Manali, Minjur, Ambattur, Avadi, Alandur and Tambaram along 3 corridors apart from limited development along GNT Road, Poonamallee Road and Lattice Bridge Road.
- (5) Each major node was designed for a population of 200 to 300 thousands and would be predominantly and self-contained unit providing for a substantial percentage of land for work places, schooling, shopping and other day to day needs.
- (6) The nodes would be connected with rapid rail system and expressways to the city on the one hand and to the satellite towns on the other (Satellite towns proposed (then) were at Gummidipoondi, Thiruvallur and Maraimalai Nagar).
- (7) The nodes amongst themselves would be connected by both rail and road systems to facilitate intra-urban movement.
- (8) The population within City in 1971 was 2.47 million and the city is bound to grow in population at (then) present rates for at least next 5 years (4.28% for the City and 6.3% for the Madras Urban Agglomeration). The main reason for such assumptions are:
  - (a) The urban nodes will take time to develop and absorb the future urban population;

- (b) The areas, currently being developed as residential neighbourhoods within the City would themselves contribute to increase the City's population substantially, and
- (c) There are still some vacant and undeveloped lands within the City, particularly on the fringes where development potentialities exist and
- (d) The rate of development within City will however taper off once the development of urban nodes gains momentum and the level of population within the City would then get stabilised.
- (9) Based on the Traffic and Transportation Plan for MMA, 1974 (prepared by Madras Area Traffic Study Unit of D T & C P.), a modal split of 80:20 was estimated for the year 1991 between the public mass transit modes and private personal transport (against 51:49 existed then bulk of private mode being by cycles and walk). The important projects identified in the Master Plan (then) for implementation were:

## Railways:

- (a) Construction of a mass rapid transit system along the north-south eastern corridor between Manali and Thiruvanmiyur;
- (b) Introduction of electrified suburban train system on Madras-Thiruvallur and Madras-Minjur lines;
- (c) Construction of a combined railway terminal; and
- (d) Construction of a circular railway.

## Roads:

- (e) Widening of the arterial roads to carry six lanes of traffic with separate cycle tracks and footpaths:
  - (i) Anna Salai
  - (ii) Poonamallee Road including a fly-over opposite Central Station
  - (iii) Walltax Road and G.N.T. Road
  - (iv) Arcot Road
  - (v) Edward Elliots Road and its extension up to Poonamallee High Road.
  - (vi) Flowers Road and its extension up to G.N.T. Road
  - (vii) Adams Road and its extension upto Poonamallee High Road and Sydenhams Road up to its junction with G.N.T. Road
  - (viii) North Beach Road and its extension to Ennore
- (f) Replacement of the 26 level crossings over railways with grade separators

- (g) Construction of a new western expressway connecting Anna Nagar with Avadi
- (h) Construction of the missing links of the inner ring road within the City and construction of intermediate and outer ring roads

  Others:
- (i) Construction of three terminals for long distance buses and truck terminals on the radial corridors at their junction with the outer ring road.
- (10) The standard of water supply adopted for the estimates of Corporation of Madras and Tamil Nadu Water Supply and Drainage Board for the requirements of water for MMA was 227 lpcd. Recognising the severe limitation of the (then) present sources of water supply, it was suggested that number of studies covering all the aspects of water supply system would have to be carried out before a comprehensive programme for water supply system was put through. Similarly before investing on sewerage a full scale investigation was necessary. The success of development of urban nodes for dispersal of population in the MMA so as to restrict the population within (then) present limits to manageable proportions depends upon the speed with which water supply and drainage scheme had to be implemented in those areas.
- (11) About 33.5% of City population [7.37 lakhs] lived in 1202 slums in the Chennai city in 1971. Considering (then) current and future requirements, a massive housing programme would have to be initiated and put through; in 10 years 12,000 hectares of land to be acquired (2500 Hectares each in Manali, Avadi, Ambattur and Tambaram, 1500 Hectares in M.M. Nagar, 750 Hectares each in Gummidipoondi and Thiruvallur and developed for housing. Most of the new housing by the public agencies except that intended to rehabilitate slum dwellers on the same site would have to be necessarily provided in the urban nodes as sufficient developable land within City is not available.
- (12) Primary education was the responsibility of local bodies, but privately run schools provide school facilities for a large segment of the population then. Recognising the need for improving school facilities it is observed that policy for the provision of future education facilities should aim at organising school buildings and playgrounds in proper locations. Advance action was called for to reserve adequate lands and locations convenient and safe for children. Depending on the need for the community, it was felt necessary to plan future locations for college and higher education institutions.

- (13) Observing the over-crowding in wards and other spaces in the hospitals, and ever-increasing demand for hospital facilities (adopting a standard of 500 beds for each hospital on the basis of 4 beds per 1000 population) it was recommended that on an average one hospital will have to be commissioned every year.
- (14) Emphasising the need for providing adequate recreational facilities in the shape of parks, play ground and open spaces to serve all levels of population in urban areas, it was recommended as follows:
  - a) 80 hectares for one lakh population for metropolitan parks, and 400 hectares of land along each of the 3 major corridors, and 800 hectares along the coast in the north and south are required for provision for regional level recreational facilities.
  - b) Local level recreational facilities have to be provided at the rate of 0.8 hectares per 1000 population for parks and play spaces. The spatial distribution of these facilities would largely depend on the availability of suitable land, particularly in built-up areas and hence had to be taken up at the level of Detailed Development Plans. The total requirement of open space in MMA in 1991 was 9600 hectares (96 Sq.km.)
- (15) Development in the Metropolitan area was taking place at the rapid rate especially on the National Highways leading to the City and to a lesser extent on the other roads. One of the major principles underlying the Plan was securing of balanced development by decentralising the places of employment and residential areas. The Plan had allocated land for industries, commerce, housing, play fields and other types of major urban land uses in appropriate locations and interrelated to each other so as to promote orderliness and smooth functioning.
- (16) Each land use zone had its special regulations designed to protect residential and recreational areas from harmful invasions of commercial and industrial uses and at the same time promoting business and industry by diverting them to most suitable places. By regulating the spacing of buildings, floor area ratio, set-backs, parking etc. the Plan aimed to ensure adequate light, air, fire protection etc. and to prevent over-crowding in buildings and land and thus facilitating the provision and continued adequacy of water, sewerage, transportation and other facilities.

- (17) The proposed land use plan contains 10 land use zones. In each use zone, certain uses would be permitted normally, other uses may be permitted on appeal to the CMDA and all other uses not specified therein would be specifically prohibited. Planning parameters had been prescribed differentially for 3 categories of areas viz. (i) Continuous Building Areas and George Town, (ii) Madras City excluding GT and CBA, and (iii) rest of CMA.
- (18) It was observed that the land use plan was in essence a translation into physical form of planning policies and principles. The policies had taken into account the realities of the (then) present situation and were designed more to channelise future development on orderly lines rather than effect wholesale change in (then) existed development.
- (19) The proposed land use break-up for various uses as per the Master Plan (1975) is given in table 2.01

Table No.2.01 Proposed Land use under First Master Plan for CMA									
Sl.No	Land Use	Chenn	ai City	Rest of CMA					
		Extent in hect.	% to total extent	Extent in hect.	% to total extent				
1	Residential	8,081.98	48.57	32,255.78	30.98				
2	Commercial	973.28	5.85	895.42	0.86				
3	Industrial	1,107.51	6.66	6,361.62	6.11				
4	Institutional	2,746.43	16.51	4,935.20	4.74				
5	Open space & Recreational	3,254.11	19.55	7,767.21	7.46				
6	Agriculture	-	-	50,924.14	48.91				
7	Non-Urban	476.11	2.86	978.71	0.94				
	Total	16,639.42	100.00	1,04,118.08	100.00				

Source: Draft Second Master Plan 2011 (prepared in 1995)

# Structure Plan for CMA (1980)

2.14 The structure plan was prepared in CMDA in association with M/s Alan Turner and Associates in 1980 with the assistance of Overseas Development Agency of U.K. Earlier planning in Chennai Metropolitan Area were reviewed and the following main recommendations were made in the plan:

#### Suggested Strategy

- 1) The Master Plan strategy which aimed to restrict the size of the City is in need of considerable amendment owing to much higher population growth than previously predicted and the distribution of population and new development, it is recommended that an alternative strategy should be adopted which combines limited intervention with an acceptance of the pressures for growth.
- 2) Policies for growth should embrace a realistic, acceptance of growth trends and should not attempt to intervene in an impracticable manner. Programmes, which are capable of implementation in the short term, should be devised within the framework of longer-term strategy.
- 3) In developing the programmes of the various sectors in pursuit of a chosen strategy, it is essential to adopt realistically achievable targets. In this respect, financially self-supporting projects involving maximum cost-recovery should be developed wherever possible. Cross subsidies will help to create viable projects for the lowest income groups.
- 4) Particular attention should be given to monitoring migration into and out of Madras not only in terms of numbers, but also in terms of understanding the reasons for migration and the difficulties encountered in being absorbed into city life.
- 5) Further study should be made of the structure of the population particularly of changes in the structure with a view to determining future demand for services and facilities with greater accuracy.
- 6) Policies aimed at reducing population growth in the MMA over the long term should be pursued rigorously. They should take two forms:
  - a) Family Planning Programmes
  - b) Programmes of regional development aimed at reducing the perceived relative attractiveness of metropolitan city life as opposed to rural or small town life.
- 7) Priority areas should be designated for which Action Plans should be prepared. These should contain social, economic and physical components prepared in greater depth than the current Detailed Development Plans, which are restricted largely to land use planning. Special action planning terms should be set up within MMDA to prepare Action Plans and co-ordinate them with the programmes of other agencies.

- 8) The efficient use of scarce resources, particularly of water supplies should be considered to be paramount in determining the pattern of future urban growth.
- 9) The location of new squatter settlements will need very careful monitoring owing to their influence on the pattern of urbanization, particularly with regard to the provision of new infrastructure.
- 10) In view of progress at Marai Malai Nagar and Manali, MMDA should carry out a review of their present role in the emergent growth strategy for MMA.
- 11) In addition to the urban nodes, which form a part of the current Master Plan, other local centres should be encouraged to develop in order to spread employment and service facilities throughout the urban area. A policy of multiple centres should help to provide more balance in transport facilities.
- 12) Industries with water borne polluting effluent should not be allowed to develop south of Madras, where owing to the predominantly south/north drift they could pose a threat to the Marina Beach.

### Land

Development should be prohibited in some areas where there are natural constraints (such as flood plains of the foreshore area) and restricted in others. Development policies should seek to discourage development in these areas and to encourage development in defined areas, which will tend to be on the periphery of the City. Detailed geologic maps are needed to determine more accurately the location of constraints.

Areas under considerable pressure for urban development (the 'urban fringe') should receive an adequate share of resources, since it is here that many subsequent urban problems are likely to have their origin.

- 14) A policy of "green wedges" should be adopted to protect agricultural areas between development corridors. These areas would also provide space for recreation.
- 15) In certain priority areas, MMDA should adopt the role of principal developer in the assembly and disposal of land to meet the various development needs.

- 16) An open space policy should be formulated which would define areas for both productive uses and recreation and would set standards and guidelines for their use and maintenance.
- 17) Urban residents should be encouraged to grow their own fruit and vegetables, wherever they have sufficient space. This will help to achieve the best use of private open space.
- 18) In order to monitor the physical growth of the City, aerial photographs should be taken every five years; the results should be compared with data on population distribution from the Census. In this way the forecast trends in growth can be confirmed or modified.

## Rural Development

- 19) Detailed Studies should be carried out of the rural/urban interface in order to formulate integrated policies. These would help to define in greater detail, which areas should remain rural and which should be developed for urban purposes. Integration will help to minimize waste of scarce land and water resources.
- 20) A concerted programme of afforestation should be formulated for MMA, in conjunction with the provision of open space and reclamation of derelict land; generally this would be on poor land unsuitable for agriculture.

#### Financial Resources

- 21) MMDA should establish a Programme Budgeting Division in order to develop a five-year rolling programme of capital investments, relevant to the selected strategy and to monitor and evaluate results through a series of performance indicators.
- 22) MMDA should initiate a detailed sectoral analysis with the ultimate aim of linking all the agencies investment programmes in pursuit of a common development strategy consistent with their own objectives
- 23) MMDA and other public agencies should aim to capture the increment in land value caused by public land development for the benefit of the community as a whole. This will ease the burden of providing relief for the poorest sections of society.
- 24) Every opportunity should be found to enable the private sector to play a full part in the development process.

#### **Employment**

- 25) Within the framework of national policy a regional strategy should be formulated, which would help MMA through direct investment, in setting up large public enterprises and the extension of financial incentives. The strategy would seek to promote agriculture, fishing and industries catering for the export market.
- 26) Complementary income generation programmes should be developed in parallel with all sites and services and slum upgrading projects. These should include, the promotion of small business, and informal activities and the provision of short vocational training courses.
- 27) A series of action programmes for the stimulation of the small business sector should be developed in collaboration with the relevant agencies.
- 28) A large number of agencies and public corporations are engaged in economic development. In several cases functions overlap and it is recommended that management studies be carried out with a view towards rationalization and amalgamation.
- 29) Additional investment in electricity generation and distribution should be given priority in the immediate future. Electric power is in short supply and the numerous power cuts are impeding industrial production and growth.
- 30) Major industrial development should be directed towards the existing industrial areas and zones, largely in the peripheral areas, with good communications and a nearby resident labour force.
- 31) Retail, service and small office activities should be encouraged to succeed the wholesale merchants relocated from George Town. A policy of upgrading infrastructure and buildings should be followed.

## Shelter

- 32) TNHB should put much more emphasis on low cost housing especially sites and services programmes rather than the current schemes, which favour middle and higher income groups.
- 33) To encourage greater private sector participation a number of measures must be taken including a review of the Urban Land Ceiling Act, the use of licenses to construct housing on government land, better access to credit facilities and the provision of more housing for workers by major employers.

#### Transport

- 34) The various significant transport proposals should be kept under review to determine their viability, timing and role in shaping the overall development strategy. Such proposals include the inner circular railways, and the intermediate and outer ring roads.
- 35) Land use planning should attempt to ensure a balance between resident population and facilities over any 3 km, radius, particularly in terms of housing and jobs for the lower income groups.
- 36) The First Phase of the MRTS (Madras beach to Luz) has reached a point in its processing where it must be regarded as a committed project, it is essential to maximize the advantages to be gained from the investment by planning appropriate developments at the stations along the line. MMDA should carry out a special study in collaboration with MTP(R).
- 37) A network of arterial roads, which can be developed as the main channels for vehicular movement, needs to be identified. The districts bounded by the arterials each need to be examined to ensure that internal roads will not become mini-arterials.
- 38) A long-term strategy for roads should aim for better use of existing roads and improvements of conditions for all highway users. The various highway users should be better segregated than at present particularly local and longer distance travel. The environment for activities along the roads should be improved.
- 39) Special routes in some areas should be designated for trucks and other streets should be closed to trucks over a certain weight.
- 40) A parking policy should be developed with restrictions enforced in the more congested areas. Off-street facilities should be provided for certain new developments provided that rigorous enforcement of street parking exists in the area.
- Apart from the trunk routes along those corridors not served by rail, bus routes should be designed to give a more local service, providing a feeder service to the corridor trains or buses. In addition cross-town routes will be necessary. The attitude of experimentation with new routes, together with continuing market research into route requirements, should be encouraged.

- 42) A detailed study should be made of the potential for constructing effective bus/rail interchange stations in the first instance on the Tambaram line at Saidapet, Nungambakkam and Chetput.
- 43) Cyclists deserve special consideration in the Structure Plan. Further detailed study of cycling habits appears to be justified as does construction, if at first on an experimental basis, of some lengths of exclusive cycle-way. It has been suggested that the banks of the Cooum River or the Buckingham Canal might be a suitable location for such an experiment.
- 44) The improvement of sidewalk facilities for pedestrians is probably the single most important improvement needed to make the best use of road space. Maintenance and improvement programmes should aim to provide continuous smoothly paved sidewalks on all roads. Where possible, routes independent of vehicle routes should be developed.
- 45) MMDA should formulate integrated policies of street management (including traffic management and highway maintenance) and co-ordinate the activities of the local bodies, the police, the highway authorities, and public transport authorities and works departments. This is essential, in order to make more efficient use of the existing street network.

#### Education and Health

- 46) Educational policies should be directed more towards the needs of the lowest income groups, with emphasis on primary education and vocational training.
- 47) MMDA should co-ordinate the programmes of operating agencies so as to increase the number of hospital bed-spaces; upgrade existing family and child welfare centres; construct new maternity and child welfare Homes; extend the programmes for medicare centres and pre-school care.

## Water Management, Water Supply, Drainage and Sewerage

- 48) It is imperative to identify new sources of water in the short-term, if lack of water is not to pose a serious impediment to growth and development. This is important both in urbanizing areas and in areas identified for long-term agricultural use.
- 49) An integrated scheme should be prepared for the reuse of wastewater, together with a comprehensive scheme for utilizing existing water resources.

this would reduce the need for imported water from distant sources. Reuse would be related to higher value market garden crops and would enable nutrients to be returned to the soil.

- 50) The aquifer below the coastal sands south of Madras should be protected from reduction of recharge by urban development.
- 51) A study should be made to investigate alternative methods of sewage treatment, particularly simple, cheap solutions for use in sites and services or slum upgrading projects.

# **Detailed Development Plans:**

2.15 Detailed development plans are the plan prepared under section 27 of the TN T&CP Act and are more detailed than the Master Plan. It is prepared generally for smaller areas out of about 3 sq.km. The list of approved Detailed Development plans is given in the Table no. 2.02

Table No: 2.02 List of Approved Detailed Development Plans						
S1.No	Name of the D.D.P	S1.No	Name of the D.D.P			
1	Vivekanandapuram Area	29	Todhunder Nagar Area			
2	Gangadeswarar Koil Area	30	Nammalwarpet Area			
3	Chetpet	31	Thiru-Vi-Ka Nagar Area			
4	Chepauk Area	32	Binny Mill Area			
5	Guindy Area	33	Ashok Nagar Area			
6	Gandhi Nagar Area	34	Perambur North Area			
7	Kottur Area	35	Arunachaleswarar Koil Area			
8	Periamet Area	36	Theyagaraya College Area			
9	Jeeva Nagar Area	37	Rangarajapuram Area			
10	Azad Nagar Area	38	Pulianthope Area			
11	Krishnampet Area	39	Egmore Station			
12	Zam Bazaar Area	40	Perumalpet Area			
13	Radhakrishnan Nagar Area	41	Nappier Park Area			
14	Kamaraj Nagar Area	42	Govt. Estate Area			
15	Avvai Nagar Area	43	Thiruvottiyur TP Scheme No. 8 Area			
16	Thiruvottiyur T.P Scheme No.2 Area	44	Thiruvottiyur T.P Scheme No.1 Area			
17	Nandanam Area	45	Thiruverkadu Area			
18	Urur Area	46	Nakkeerar Nagar Area			
19	Killiyur Area	47	Kalaivanar Nagar Area			
20	Nungambakkam Area	48	Kanadasan Nagar Area			
21	Guindy Park Area	49	Rajaji Nagar Area			

22	Mylapore-Santhome Area	50	Anna Salai Area
23	Karaneeswarapuram Area	51	Vallalar Nagar Area West
24	Thiruvatteeswaranpet Area	52	Vallalar Nagar Area South
25	C.I.T.Colony Area	53	Vallalar Nagar Area Central
26	Amir Mahal Area	54	Vallalar Nagar Area East
27	Marina Area	55	Poonamallee High Road TP Scheme Area
28	Azhagiri Nagar Area	56	Saidapet Part II Area

<sup>2.16</sup> It is proposed to cover the whole City area for Detailed Development Plans in the next 5 years and also review the earlier Detailed Development Plans.