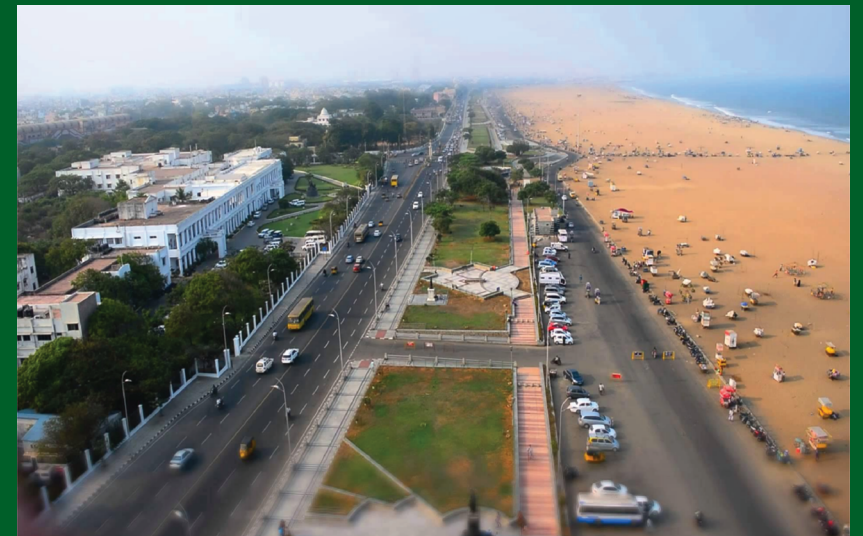




**MUNICIPAL ADMINISTRATION AND  
WATER SUPPLY DEPARTMENT**



**POLICY NOTE  
2017-2018**

DEMAND NO. 34

**S.P. VELUMANI**

Minister for Municipal Administration,  
Rural Development and  
Implementation of Special Programme

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**1. Introduction**

Urbanization refers to the population shift from rural to urban areas. It is a rapid and historic transformation of human social roots on a global scale, whereby predominantly rural culture is being rapidly replaced by predominantly urban culture.

**1.1 Urbanisation –Worldwide Scenario**

It is estimated that 54.5 per cent of the world's population presently lives in urban settlements. By 2030, urban areas are projected to house 60 per cent of people globally and one in every three people will live in cities with at least five lakh inhabitants.

170 crore people (23%) of the world's population currently live in a city with at least 10 lakh inhabitants. By 2030, a projected 27 per cent of people worldwide shall be concentrated in cities with at least 10 lakh inhabitants. Between 2016 and 2030, the population in all city irrespective of size and class is projected to increase, while the rural population is projected to decline slightly (45% in 2016 to 40% by 2030). 50 Crore people resided in megacities representing 6.8 per cent of the global population in 2016. These cities shall become home to a growing share of the population, as these will increase in both size and number by 2030. A projected 73 crore people shall live in cities with at least 1 crore inhabitants by 2030, representing 8.7 per cent of people globally as per the report of United Nations. World's population by size and class of settlement in 2016 and in 2030 is captured in the following table:

	2016			2030		
	Number of settlements	Population (in crore)	Percentage of world population	Number of settlements	Population (in crore)	Percentage of world population
Urban	...	403.4	54.5	...	505.8	60.0
1 crore or more	31	50.0	6.8	41	73.0	8.7
50 lakhs to 1 crore	45	30.8	4.2	63	43.4	5.2
10 lakhs to 50 lakhs	436	86.1	11.6	558	112.8	13.4
5 lakhs to 10 lakh	551	38.0	5.1	731	50.9	6.0
Fewer than 5 lakh	...	198.5	26.8	...	225.7	26.8
Rural	...	337.1	45.5	...	336.7	40.0

Of the world's 31 megacities (that is, cities with 10 million inhabitants or more) 24 are located in the less developed regions or the "global South".

## 1.2 Urbanisation - Indian Scenario

The first phase of Indian urbanization is traced way back to the Indus valley and today, India is a country housing young and rapidly growing urban population, and is considered to be a potential demographic dividend. At present

about 43 crore people live in urban India, representing nearly 32% of the total population. The population of Indian cities is expected to increase to 59 crore by 2030, representing nearly 40% of India's total population. In short, India is going to witness an urban transformation in the next 15 years which has not happened anywhere in the world except in China.

Urbanisation will spread out across India, impacting almost every state. For the first time in Indian history, the nation is projected to have five large urbanised states including Tamilnadu, having majority of their population living in cities than in villages.

India is projected to have 68 cities with population of more than 10 crore in 2030, up from 46 cities in 2011 census. These potential cities are vital because they generate the lion's share of India's tax revenue – between 80 and

85 percent approximately. However, the challenge for India to sustain this urban growth is to ramp up investment in line with economic growth. As per the report of Mckinsey Global Institute (MGI), the required investment in India is estimated at \$60 billion a year till 2020 and \$90 billion annually from 2020 till 2030 to sustain such urbanisation pattern in India.

### **1.3 Urbanisation trends in Tamilnadu**

**Tamil Nadu is one of the most rapidly industrialising and urbanising states in India** with 48.45% of its population living in urban areas. Tamil Nadu ranks first in the proportion of urban population in the country considering geographical area and total population, accounted for 9.3 percent of the total urban population in the country while only comprising 6% of India's total population.

Tamil Nadu will continue to lead the country in urban growth over the next decade



also. The projected percentage of urban population for Tamil Nadu by the year 2030 has been estimated as 67%, which will be the highest in the country. In this scenario, there will be many major policy and managerial challenges in coping with the increased demand for urban infrastructure and access to basic civic services by the burgeoning population. Capacity building, accessing funds for infrastructure development, employment to youth, relevant green technologies will be the key to meet these challenges.

Vision Tamil Nadu 2023 sets the Plan for infrastructure development for the State to reach the desired outcome by 2023 stressing on urban transportation, water and waste-water management, solid waste management, housing, including low income housing. The focus of investments in urban infrastructure is to develop state-of art infrastructure both physical

and social, ensuring seamless connectivity between cities and rest of the State.

It aims to provide among others, high quality infrastructure all over the State comparable with the best in the world. It is proposed to put in place a system of integrated road network facilities in urban transport. It also provides piped and pressurized 24x7 water supply to all the citizens and ensure that 100 percent of them have access to safe sanitation including open defecation free and garbage free environment.

The sectoral plan envisaged in Vision Tamilnadu 2023 consists of -

- (a) Development of Chennai into megapolis at a cost of ₹50,000 crore.
- (b) Transforming ten cities into world class cities with an outlay of ₹1,00,000 crore.

(c) Urban development for other cities with an outlay of ₹50,000 crore.

#### **1.4 Municipal Administration and Water Supply Department**

The Municipal Administration and Water Supply Department is responsible for the development of urban areas in the State and for ensuring provision of infrastructure facilities to all the areas of the State. The department is entrusted with the responsibility of planning, financing, implementing and monitoring projects which are aimed at attaining service level benchmark.

The department has made massive investment for undertaking critical capital investment works in the urban local bodies for water supply, roads, buildings, storm water drains, street lighting, solid waste management, sanitation, bus stands and commercial complexes. There are 12 Municipal Corporations, 124 Municipalities and 528 Town Panchayats

under the control of Municipal Administration and Water Supply Department.

District wise Urban Local Bodies in the state of Tamilnadu is provided in the following table:

S.No	Districts	Corporations	Municipalities	Town Panchayats
1	Ariyalur	0	2	2
2	Chennai	1	0	0
3	Coimbatore	1	3	37
4	Cuddalore	0	5	16
5	Dharmapuri	0	1	10
6	Dindigul	1	3	23
7	Erode	1	4	42
8	Kancheepuram	0	9	17
9	Kanniyakumari	0	4	55
10	Karur	0	2	11
11	Krishnagiri	0	2	6
12	Madurai	1	3	9
13	Nagapattinam	0	4	8
14	Namakkal	0	5	19
15	Perambalur	0	1	4
16	Pudukkottai	0	2	8
17	Ramanathapuram	0	4	7
18	Salem	1	4	33
19	Sivagangai	0	3	12
20	Thanjavur	1	2	22
21	Nilgiris	0	4	11
22	Theni	0	6	22
23	Thiruvallur	0	5	10
24	Thiruvannamalai	0	4	10
25	Thiruvarur	0	4	7

<b>S.No</b>	<b>Districts</b>	<b>Corporations</b>	<b>Municipalities</b>	<b>Town Panchayats</b>
26	Thoothukudi	1	2	19
27	Tiruchirappalli	1	3	16
28	Tirunelveli	1	7	36
29	Tiruppur	1	5	16
30	Vellore	1	11	16
31	Villupuram	0	3	15
32	Virudhunagar	0	7	9
Total		12	124	528

The Departments and Organizations functioning under the administrative control of Municipal Administration and Water Supply Department are as follows:

1. Commissionerate of Municipal Administration (CMA)
2. Greater Chennai Corporation
3. Directorate of Town Panchayats (DTP)
4. Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB)
5. Tamil Nadu Water Supply and Drainage Board (TWAD Board)
6. Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL)
7. Chennai Rivers Restoration Trust(CRRT)

8. Tamil Nadu Urban Finance and Infrastructure Development Corporation Limited(TUFIDCO)
9. New Tiruppur Area Development Corporation Limited (NTADCL)
10. Tamil Nadu Water Investment Company Ltd(TWIC)

The Urban demographic scenario is provided in the following table:

<b>SI No</b>	<b>Categories</b>	<b>Nos</b>	<b>Area in Sq.km</b>	<b>Area in %</b>	<b>Population in lakhs</b>	<b>Urban Population in %</b>
1.	Greater Chennai Corporation	1	426	4.01	67.27	21.34
2	Other Corporations	11	1,278.31	12.05	80.66	25.59
3	Municipalities	124	2,516.05	23.72	86.39	27.41
4	Town Panchayats	528	6,388.20	60.22	80.90	25.66
<b>Total</b>		<b>664</b>	<b>10,608.56</b>	<b>100</b>	<b>315.22</b>	<b>100</b>

## **2. Commissionerate of Municipal Administration**

The Commissionerate of Municipal Administration is headed by the Commissioner of Municipal Administration assisted by Joint Commissioners, Additional Directors, Joint Directors and 7 Regional Directors of Municipal Administration (one each for Chengalpattu, Vellore, Salem, Tiruppur, Thanjavur, Madurai and Tirunelveli regions). The Commissionerate is responsible for supervising and monitoring the functions of all Municipalities and Municipal Corporations in the State except the Corporation of Chennai. There are 11 Municipal Corporations viz, Madurai, Coimbatore, Tiruchirappalli, Tirunelveli, Salem, Tiruppur, Erode, Vellore, Thoothukudi, Dindigul, Thanjavur and 124 Municipalities under the administrative control of the Commissionerate of Municipal Administration. The Municipalities in the State have been

classified into different grades based on their annual income as follows:

<b>Sl. No.</b>	<b>Grade</b>	<b>Annual income (in crore)</b>	<b>No. of Municipalities</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
1	Special Grade	Above 10.00	18
2	Selection Grade	6.00-10.00	28
3	First Grade	4.00-6.00	34
4	Second Grade	Below 4.00	44
Total			124

## **2.1 Elected Representatives in Municipal Corporations and Municipalities**

As mandated by the 74<sup>th</sup> Constitutional Amendment Act, the elections to the Municipal Corporations and Municipalities are due to be conducted. Category-wise post of Mayors, Municipal Chairpersons and Councillors are given in the following table:



Urban Local Bodies	SC (General)	SC (Women)	ST (Women)	Women (General)	General	Total
<b>Corporations(including Chennai Corporation)</b>						
Mayors	1	1	--	5	5	12
Councillors	50	57	--	412	400	919
<b>Municipalities</b>						
Chair persons	8	9	1	52	54	124
Councillors	225	286	3	1,551	1,548	3,613

## 2.2 Infrastructure Development

Creating and sustainable maintenance of infrastructure is an important function of the Urban Local Bodies (ULBs). The Government accord highest priority to the creation of quality and functional infrastructure. Works in urban local bodies are taken up by accessing financial assistance under various schemes of Central/State Governments and from external funding agencies like World Bank, German Development Bank (KfW), Japan International

Cooperation Agency (JICA) and Asian Development Bank (ADB)

### **2.3 Integrated Urban Development Mission**

To improve the basic infrastructure like roads, drinking water supply, street lights, sewerage, storm water drains, sanitation, solid waste management, bus stands and parks in an integrated manner, the Hon'ble Chief Minister has launched the Integrated Urban Development Mission for all Corporations (except Chennai), Municipalities and Town Panchayats which has given major thrust to the Infrastructure Development of the Urban Local Bodies.

During the last 6 years, ₹2,622.40 crore has been infused for development of urban infrastructure. Out of 6,510 works undertaken, 6,069 have been completed and the balance works are in various stages of implementation.

## **2.4 Water Supply**

The Government have accorded priority for the provision and access to safe and adequate drinking water to every household in the urban local bodies. In order to improve the water supply situation, the government have taken up various water supply projects availing financial assistance from various external agencies such as Japan International Cooperation Agency (JICA), German Development Bank (KfW), World Bank and under various schemes such as Integrated Urban Development Mission (IUDM), JnNURM and AMRUT. These schemes are being implemented by ULBs and in some cases by the para-statal agencies like Tamil Nadu Water Supply and Drainage Board (TWAD) and the Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB).

Norms prescribed by the Central Public Health and Environmental Engineering Organization

(CPHEEO) for drinking water supply in Corporations and Municipalities covered by underground sewerage system is 135 Litres Per Capita per Day (LPCD). For other cities not covered by underground sewerage system, it is 90 LPCD. The urban local bodies aim to implement water supply schemes with the objective of achieving these norms.

The status of water supply in Corporations and Municipalities are as detailed below:

<b>ULB</b>	<b>Range</b>	<b>Status</b>	<b>No.of ULBs</b>
Corporations	110 LPCD & above	Good	6
	70 to 109 LPCD	Comfortable	5
Total			11
Municipalities	90 LPCD & above	Good	59
	40 to 89 LPCD	Comfortable	65
	20 to 39 LPCD	Poor	0
Total			124

In the year 2011, a total of 1,567.10 MLD of water has been supplied to all urban local bodies at an average rate of 93 LPCD. In

the year 2017, after the implementation of several water supply schemes under TNUDP-III, JnNURM, KfW, JICA, IUDM, IGFF the supply level has been increased to 1869.55 MLD and the corresponding per capita supply also increased to 112 LPCD.

Under TNUDP III, 17 water supply improvement schemes at a cost of ₹661.65 crore have been taken up, of which 13 schemes have been completed.

The supply level has increased in the 13 completed ULBs as follows:

Sl. No	Name of the ULB	Project cost (₹ in Crore)	Daily Water Supply Service Level			
			Before Implementation of the Scheme		After Implementation of the Scheme	
			Quantity supplied MLD	LPCD	Quantity supplied MLD	LPCD
1	Tirunelveli (Thachanallur)	5.94	36.72	77	55.00	116
2	Gobichettypalayam	4.05	4.96	90	7.44	135
3	Pollachi	8.64	10.2	105	12.7	135
4	Bodinayakanur	2.32	5.75	76	6.95	90
5	Salem	24.84	71.00	85	105.72	127
6	Kurichy	49.93	4.00	40	7.5	70
7	Kuniyamuthur		3.5	40	8.00	75

Sl. No	Name of the ULB	Project cost (₹ in Crore)	Daily Water Supply Service Level			
			Before Implementation of the Scheme		After Implementation of the Scheme	
			Quantity supplied MLD	LPCD	Quantity supplied MLD	LPCD
8	Koundampalayam	30.38	4.56	48	8.00	80
	Vadavalli		2.3	55	3.00	70
9	Tiruvannamalai-I	0.32	Distribution Revamped			
10	Sivagangai-II	0.16				
11	Thuraiyur	0.14				
12	Krishnagiri	1.52				
13	Kuzhithurai-II	0.99				

The status of remaining 4 Water Supply Schemes is as follows:

SI No	Name of the ULB	Project cost (₹ in Crore)	Present stage
1	Salem stage-II	147.12	Work nearing completion
2	Pallavapuram	99.95	Work in progress
3	Pammal	43.10	Work in progress
4	Theni-Allinagaram	68.83	Work nearing completion

Under Urban Infrastructure & Governance (JnNURM - UIG), 12 Water Supply Improvement Schemes (WSIS) have been taken up at an

estimated cost of ₹1,169.87crore, of which 9 schemes have been completed.

The water supply level has increased in the ULBs after completion of the work as follows:

Sl. No	Name of the ULB	Project Cost (₹in crore)	Daily Water Supply Service Level			
			Before implementation of the Scheme		After implementation of the Scheme	
			Quantity supplied in MLD	LPCD	Quantity supplied in MLD	LPCD
1	Madurai (Vaigai-II)-2 works	80.37	71.6	67	118.60	110
2	Coimbatore (Pillur-II)	159.85	176.00	109	216.00	135
3	Tambaram	32.62	8.77	55	16.12	90
4	Anaiyur(merged with Madurai Corporation)	7.88	3.48	46	4.12	90
5	Tirupparankundram & Harvipatti (merged with Madurai Corporation)	9.70	2.69	69	3.71	90
6	Tirumangalam	68.13	8.08	90	11.18	135
7	Madurai added area (Avaniyapuram, Thirunagar and Vilangudi)	106.99	17.14	90	27.55	135

Sl. No	Name of the ULB	Project Cost (₹in crore)	Daily Water Supply Service Level			
			Before implementation of the Scheme		After implementation of the Scheme	
			Quantity supplied in MLD	LPCD	Quantity supplied in MLD	LPCD
8	Coimbatore added area (Thudiyalur, Vellakinaru, Kalapatti, Saravanampatti and Chinnavedampatti)	29.03	10.64	70	36.08	135

The status of remaining 3 Water Supply Schemes is as follows:

Sl. No	Name of the ULB	Project cost (₹in crore)	Present stage
1	Avadi	103.84	Partially commissioned and balance work in progress
2	Anakaputhur	14.88	Work in progress
3	Coimbatore (24x7)	556.57	Tender Stage

Under Urban Infrastructure Development Scheme for Small and Medium Towns (JnNURM -



UIDSSMT), 40 Water Supply Improvement Schemes at a cost of ₹740.47 crore have been taken up for implementation, out of which, 35 Water Supply Improvement schemes (WSIS) have been completed. The water supply level has increased in the 35 completed ULBs as detailed below:

SI No	Name of the ULB	Project Cost (₹ in crore)	Daily Water Supply Service Level			
			Before implementation of the Scheme		After implementation of the Scheme	
			Quantity supplied in MLD	LPCD	Quantity supplied in MLD	LPCD
1	Devakottai	0.30	Only internal infrastructure development			
2	Karur	1.35	6.9	84	8.4	110
3	Valparai	2.21	0.75	42	2.51	122
4	Tirupattur	7.58	4.9	52	5.75	72
5	Ramanathapuram	47.70	1.25	20	6.61	70
6	Paramakudi	58.24	6.00	62	8.47	70
7	Keelakarai	20.16	0.6	19	2.88	70
8	Sivagangai	32.80	2.8	50	4.40	70
9	Rameshwaram	33.76	0.75	20	2.66	70
10	Arakkonam	8.45	6.00	77	9.6	90
11	Tiruthani	5.12	2.9	69	7.2	90
12	Aranthangi	3.46	3.16	85	4.16	112
13	Maraimalainagar	2.54	2.68	55	5.32	135

14	Vickramasingapuram	2.46	4.61	83	7.23	90
15	Nammakkal	14.32	4.24	70	10.16	135
16	Srivilliputhur	29.49	0.35	47	0.6	90
17	Gudalur (Nilgris)	5.25	2.95	60	5.94	135
18	Erode	8.00	Changing the pipe line in water supply pumping main and distribution			
19	Rasipuram	8.25				
20	Thanjavur	9.04				
21	Villupuram	9.55	5.4	57	11.25	135
22	Ottanchatram	6.69	1.94	54	3.24	90
23	Mettur	12.47	5.00	104	7.2	135
24	Attur	7.13	Changing the pipe line in water supply pumping main and distribution			
25	Vandavasi	10.90	2.20	70	3.44	110
26	Tiruchengode	7.58	7.00	73	10.00	103
27	Karaikudi	18.58	7.98	78	19.94	135
28	Palladam	17.47	3.18	75	5.56	121
29	Chidambaram	7.18	4.48	72	5.60	90
30	Dharapuram	14.74	3.50	90	5.50	120
31	Periyakulam	15.54	4.00	90	6.07	135
32	Tiruvathipuram	13.44	3.07	90	5.77	135
33	Vellakoil	17.41	3.00	90	8.00	135
34	Kangayam	16.07	2.45	90	6.00	135
35	Kayalpattinam	29.67	2.00	90	7.70	135

The status of remaining 5 Water Supply Schemes is as follows:

<b>Sl. No</b>	<b>Name of the ULB</b>	<b>Project cost (₹ in Crore)</b>	<b>Present stage</b>
1	Cumbum	18.8	Work in Progress
2	Kovilpatti	81.82	
3	Tindivanam	52.45	
4	Arani	36.26	
5	Kodaikanal	46.31	

With the financial assistance of JICA, 9 water supply improvement schemes have been taken up in Tiruchirappalli, Dindigul and Thoothukudi Corporations, Palani, Coonoor, Idappadi, Devakottai, Mettupalayam and Udumalaipet Municipalities at a cost of ₹663.68 crore. The projects in Tiruchirappalli Corporation, Devakottai, Idappadi and Coonoor Municipalities have been completed.

The supply level has been increased in the 4 completed ULBs as follows:

Sl. No	Name of the ULB	Project cost (₹ in Crore)	Daily Water Supply Service Level			
			Before implementation of the Scheme		After implementation of the Scheme	
			Quantity supplied in MLD	LPCD	Quantity supplied in MLD	LPCD
1	Tiruchirappalli	221.42	90	98	154	135
2	Devakottai	8.32	4.06	78	4.67	81
3	Idappadi	18.52	3.14	61	6.30	113
4	Coonoor	13.85	2.82	62	3.46	76

The status of remaining 5 Water Supply Schemes is as follows:

SL No	Name of the ULB	Project cost (₹ in Crore)	Present stage
1	Palani	21.60	Partially commissioned and balance work under progress
2	Thoothukudi	282.44	Work nearing completion
3	Dindigul	70.5	Work in progress
4	Mettupalayam	9.16	Work in progress
5	Udumalaipet	17.87	Work nearing completion

Under KfW fund, 14 works have been taken up at a cost of ₹793.00 crore, out of which, 5 Works have been completed. The

supply level has increased in the 5 urban local bodies after completion of the works as follows:

S. No	Name of the ULB	Project cost (₹in crore)	Daily Water Supply Service Level			
			Before implementation of the Scheme		After implementation of the Scheme	
			Quantity supplied in MLD	LPCD	Quantity supplied in MLD	LPCD
1	Tirunelveli	22.22	40.32	84	47.90	101
2	Kadayanallur	21.41	4.06	78	4.67	81
3	Tiruvannamalai	36.66	18.3	100	20.50	126
4	Pallipalayam	11.66	2.59	63	3.22	91
5	Karur	24.67	10.02	106	16.06	135

The status of remaining 9 Water Supply Schemes is as follows:

S. No	Name of the ULB	Project cost (₹in crore)	Present stage
1	Thanthoni	25.16	Work nearing completion
2	InamKarur	18.57	Work nearing completion
3	Udhagamandalam	27.20	Partially completed, balance work is in progress.
4	Tirunelveli	230.00	Work commenced
5	Cuddalore	148.09	Work is nearing completion
6	Tiruchirappalli	63.70	Work is in progress
7	Coonoor	40.19	Tender Stage
8	Coimbatore (added area)	108.16	Work is in progress
9	Padmanabapuram	14.87	Tender Stage

The Hogenakkal Water Supply and Fluorosis Mitigation Project has been completed at a total estimated cost of ₹1928.80 crore which has benefited 3 Municipalities viz., Dharmapuri, Krishnagiri and Hosur Municipalities. The total proportionate cost of the 3 Municipalities out of the total project cost is ₹399.69 crore.

After implementation of the water supply scheme, the supply level has increased as follows:

Sl. No	Name of the ULB	Project Cost (₹in crore)	Daily Water Supply Service Level			
			Before implementation of the Scheme		After implementation of the Scheme	
			Quantity supplied in MLD	LPCD	Quantity supplied in MLD	LPCD
1	Dharmapuri	132.55	5.50	80	12.76	135
2	Krishnagiri	93.59	4.00	56	8.00	112
3	Hosur	149.32	6.50	27	15.50	63

Combined Water Supply Scheme to Attur and Narasingapuram Municipalities were taken

up for implementation at an estimated cost of ₹270.00 crore and was completed. After completion of the scheme, the supply level has increased as follows:

Name of the ULB	Daily Water Supply Service Level			
	Before implementation of the Scheme		After implementation of the Scheme	
	Quantity supplied in MLD	LPCD	Quantity supplied in MLD	LPCD
Attur	3.30	52	6.20	100
Narasingapuram	1.30	56	1.90	82

Vellore CWSS has been completed at an estimated cost of ₹1,295.00 crore with funding under HUDCO, Kfw and Integrated Urban Development Mission (IUDM) with ₹104.50 crore as ULB Contribution and water supplied to Vellore Corporation and 11 municipalities. The supply level has been increased in Vellore Corporation and 11 Municipalities as follows:

Sl. No	Name of the ULB	Project Cost (₹ in crore)	Daily Water Supply Service Level			
			Before implementation of the Scheme		After implementation of the Scheme	
			Quantity supplied in MLD	LPCD	Quantity supplied in MLD	LPCD
1	Vellore Corporation	529.56	18.5	37	57.73	111
2	Ambur	95.25	4.4	39	11.16	97
3	Arcot	47.71	4.2	77	5.42	97
4	Ranipet	30.22	3.5	69	4.78	94
5	Gudiyatham	86.40	7.3	80	9.62	105
6	Jolarpet	16.44	2.58	68	2.75	93
7	Walajapet	6.84	2.22	69	2.80	87
8	Arakkonam	87.42	6.00	76	7.30	92
9	Tirupattur	36.94	7.03	90	7.14	91
10	Peranampet	34.01	1.95	38	4.52	88
11	Melvisharam	26.83	3.02	67	4.00	90
12	Vaniyambadi	47.26	6.7	70	8.3	87

CWSS to Melur Municipality has been completed at an estimated cost of ₹23.80 crore and put into use.



Under Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 10 Water Supply Improvement Schemes, (WSIS) have been taken up at an estimated cost of ₹2285.44 crore, of which water supply improvement scheme works in Thanjavur Corporation is under progress and the balance 9 works are under tender stage as follows:

<b>S. No</b>	<b>Name of the ULB</b>	<b>Project cost (₹in crore)</b>	<b>Present stage</b>
1	Thanjavur Corporation (Distribution system)	48.14	Under progress
2	Erode Corporation	484.45	Work order Issued
3	Coimbatore Corporation (added areas Distribution system)	395.41	Tender Stage
4	Madurai Corporation (source improvement)	320.00	
5	Tiruppur Corporation (added areas Distribution system)	250.00	
6	Vellore Corporation (Distribution system)	234.93	
7	Nagercoil Municipality	241.00	
8	Hosur Municipality (Distribution System)	87.91	
9	Rajapalayam Municipality	172.70	
10	Ambur Municipality (Distribution System)	50.90	Work order Issued
	Total	2285.44	

Under Tamilnadu Sustainable Urban Development Project (TNSUDP) 6 Water Supply Improvement Schemes (WSIS) have been taken up at an estimated cost of ₹660.37 crore as follows:

S.L No	Name of the ULB	Project cost (₹ in crore)	Present stage
1	Providing CWSS to Sankarankoil, Puliyangudi, Rajapalayam, Sivakasi and Thiruthangal Municipalities	475.13	Tender Stage
2	Namakkal	185.24	
	Total	660.37	

### **2.4.1 Efficient Water Management System**

In order to have better control and monitoring on operations and maintenance of water supply schemes, enhancement of Water Management Systems is necessary and the Government have accorded special priority on these aspects and to implement the same. The following measures have been taken up adopting latest technology:

- Replacing inefficient motors and pumps to improve the efficiency of the pumping system.
- Revamping the existing water supply distribution network to ensure equitable distribution of water.
- Implementation of the Supervisory Control and Data Acquisition (SCADA) system to continuously monitor the transfer of data on water flow, performance and efficiency of pumps and motors, physical and chemical quality parameters of water have been taken up in the water supply schemes in Corporations and Municipalities.
- In Coimbatore Corporation, SCADA implementation has been completed by TWAD Board. For Pillur-II scheme, SCADA works are under progress.

- SCADA system has been partially implemented and commissioned in the Corporations of Tirunelveli, Tiruppur, Madurai and Tiruchirappali.
- In Namakkal, Komarapalayam and Tiruchengode Municipalities SCADA works have been completed and trial run and under progress. In Rasipuram and Narasingapuram Municipalities, SCADA works are nearing completion.
- In Tirunelveli, Thoothukudi and Dindigul Corporations SCADA system will be implemented in 2017-18.
- Provision has been made for SCADA in all the new water supply schemes for this year.

## **2.4.2 Improvements to Distribution Systems**

An extensive study on the status of existing water supply system has been taken up in all ULBs in a prescribed format designed by this Commissionerate to ascertain the short fall in infrastructure facilities as well as the source position to improve the existing supply level and achieve daily water supply. From the data collected, 53 ULBs were identified for the improvement of distribution system infrastructure facilities, of which 11 ULBs were merged with the adjacent corporations / municipalities. Hence, the Detailed Project Reports (DPRs) have been prepared in the first stage for the resultant 42 ULBs at a total project cost of ₹1220.15 crore for improvements to Distribution systems and other infrastructure facilities like OHTs, Sumps.

Out of the 42 projects proposed, 15 projects in 15 municipalities have been taken up for implementation at a cost of ₹226.12 crore under various schemes such as UIDSSMT, UIG, JICA, KfW and IUDM. Out of the 27 remaining projects, 4 projects were taken up under AMRUT and TNSUDP, 12 projects are under the process of funding by KfW and other sources and for balance 11 projects, action is being taken for fund tie-up. Apart from the above, all the proposed new water supply schemes would be inclusive of distribution system improvements.

### **2.4.3 Rain Water Harvesting**

Rain Water Harvesting (RWH) was the pioneering Programme launched in 2001. Dynamic implementation of this scheme during 2001-2006 has reaped rich dividends in enhancing ground water table.

Necessary amendments were made to the Tamil Nadu District Municipalities Act, 1920, the

Tamil Nadu District Municipalities Building Rules, 1972, the Multi-Storeyed and Public Buildings Rules, 1973 and the Madurai City Municipal Corporation Building (Water Conservation) Rules, 2002 to make "Rain Water Harvesting structures" in all buildings mandatory while issuing Building Plan approval. The rain water harvesting structures created throughout the State have helped to raise the ground water table substantially. The awareness programme for Rain Water Harvesting is also being continued in all the ULBs.

Upto March 2017, out of 43.05 lakh buildings in Corporations (Except Chennai) and Municipalities, 36.47 lakh buildings (26,532 Government buildings and 36.21 lakh private buildings) have been provided with RWH structures. Rain water harvesting in the water bodies in ULBs have also been given major

thrust. Out of 1486 Ponds and temple tanks, 744 have been provided with RWH structures.

The Urban Local Bodies have now initiated various measures for the rehabilitation of the rain water harvesting structures. Further, wherever rain water harvesting structures in Urban Local Bodies are under repair, the ULBs have been asked to restore the structures. The awareness programme for Rain Water Harvesting is being continued in all ULBs. An action plan has been drawn by Urban Local Bodies for the Revival, Rehabilitation and Maintenance of Rain Water Harvesting structures.

Pre-monsoon preparedness has been taken up in all urban local bodies as precautionary measures by way of cleaning and desilting all the storm water drains, canals, culverts as well as lead channels to the water courses in the



town. All the rain water harvesting structures were rejuvenated and made functional.

With this drive, 85% of Buildings and 50% of ponds and tanks have been covered upto March 2017. The recharge potential due to the rain water harvested from buildings and water bodies is calculated as 5.00 TMC. In order to improve the water bodies in Ariyalur, Nagapattinam, Pattukottai and Sattur Municipalities and Erode Corporation, an amount of ₹26.67 crore has been allotted by the Government under KfW scheme.

#### **2.4.4 Summer Management Plan–2017 (State Disaster Response Fund)**

During 2016 North East Monsoon Season, Tamil Nadu received 62% deficit rainfall (168.4 mm against the normal rainfall of 440.4 mm) the worst ever in the last 140 years according to the IMD records. This led to an unprecedented

drought situation and the entire state has been declared as drought affected.

In order to overcome the drinking water scarcity during the ensuing 2017 summer, a comprehensive plan of action has been discussed to tackle the water scarcity situation based on hydro-geological maps and in consultation with TWAD Board. Additional bore wells with hand pumps/mini power pumps are being provided in addition to purchase of spare parts for the maintenance of existing hand pumps. Further, rejuvenation of borewells / Infiltration wells, conversion of hand pump to mini power pumps and transportation of water through tanker lorries, provision of HDPE tanks, flushing of existing bore wells, replacement of motor were taken up at an estimated cost of ₹100.62 crore, of which an amount of ₹65 Crore has been released as grant from SDRF and balance funds met out by the respective local

bodies from out of their general funds. 1,744 works have been taken up and 1,420 works completed and the remaining works are under various stages of progress.

## **2.5 Under Ground Sewerage Schemes**

The Government have decided as a matter of policy, to implement UGS Schemes in all Urban Local Bodies, in a phased manner. The Detailed Project Reports for 117 ULBs for an estimated project cost of ₹11,271 crore have been prepared. These DPRs have been prepared by CMWSSB, TWAD Board and the ULBs. The implementation will be taken up after necessary financial tie-up.

### **2.5.1 Sewerage Schemes under Implementation**

UGSS have been taken up for implementation in 22 Towns under the Tamil Nadu Urban Development Project-III at a total cost of

₹1025.51 crore. of which, the UGSS in Udthagamandalam, Chinnamanur, Namakkal, Dharmapuri, Perambalur, Dindigul (part), Thiruvannamalai, Kancheepuram, Ramanathapuram, Tiruvarur, Cuddalore, Theni-Allinagaram, Vellore, Nagapattinam (part), Pudukottai, Tiruvallur, Virudhunagar, Krishnagiri and Pallavapuram municipalities have been completed and put into use at a cost of ₹757.04 crore.

UGSS in 4 ULBs viz., Madurai and Coimbatore corporations, Avadi and Tambaram municipalities were taken up under the Urban Infrastructure and Governance component of JnNURM at a total cost of ₹925.49 crore and the works are at various stages of implementation.

UGSS in 10 towns viz., Maraimalai Nagar, Ariyalur, Arakkonam, Sattur, Chidambaram, Thirupathur, Periakulam, Mettur, Nagerkoil and Udumalaipet were taken up under the Urban

Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) component of JnNURM at a total cost of ₹954.86 crore, of which works in Maraimalai Nagar and Udumalaipet have been completed and scheme has been put into use. The remaining projects are in advanced stages of implementation.

UGSS for Erode Corporation at a cost of ₹209.09 crore, for Karaikudi Municipality at a cost of ₹112.53 crore, Pollachi Municipality at a cost of ₹109.62crore, Mettupalayam Municipality at a cost of ₹91.70 crore and Villupuram Municipality at a cost of ₹49.36 crore were taken up under German Development Fund (KfW). Villupuram UGSS has been completed and the process of effecting house service connections is in progress. Erode, Karaikudi, Mettupalayam and Pollachi UGSS are at various stages of implementation.

Administrative sanction was accorded for UGSS at Hosur Municipality for ₹283.94 crore under TNSUDP and action is being taken by the consultant for getting necessary clearances for the commencement of work.

Upto 31<sup>st</sup> May 2017, 5,07,260 house service connections (previous year 4,31,895 connections) have been effected in 31 ULBs viz., Coimbatore(part), Dharmapuri, Thiruvannamalai, Dindigul(part), Pallavapuram, Maraimalainagar, Chinnamanur, Kancheepuram, Tirunelveli, Tiruchirappalli, Madurai, Udhagamandalam, Namakkal, Karur, Mayiladuthurai, Kumbakonam, Thanjavur, Tiruppur, Perambalur, Ramanathapuram, Thiruvarur, Cuddalore, Pudukottai, Vellore, Udumalaipet, Tiruvallur, Theni-Allinagaram, Virudunagar, Nagapattinam (part), Krishnagiri and Villupuram Municipalities where the Under Ground Sewerage Scheme has been completed.

<b>Sl.No</b>	<b>Name of the ULB</b>	<b>Total No of HSC given</b>
<b>Corporations</b>		
1	Coimbatore	34,898
2	Dindigul	5,936
3	Tiruppur	15,445
4	Thanjavur	26,002
5	Tiruchirappalli	56,296
6	Tirunelveli	24,849
7	Madurai	1,62,152
8	Vellore	3,951
Sub Total 1		3,29,529
<b>Municipalities</b>		
1	Thiruvannamalai	5,143
2	Villuppuram	4,561
3	Udumalaipet	5,976
4	Udhagamandalam	15,718
5	Karur	9,196
6	Dharmapuri	2,149
7	Namakkal	9,059
8	Krishnagiri	1,188
9	Chinnamanur	5,647
10	Theni Allinagaram	4,434

<b>Sl.No</b>	<b>Name of the ULB</b>	<b>Total No of HSC given</b>
11	Ramanathapuram	8,060
12	Pallavapuram	25,570
13	Maraimalai Nagar	4,582
14	Tiruvallur	1,589
15	Cuddalore	2,201
16	Kancheepuram	19,375
17	Virudhunagar	2,931
18	Kumbakonam	19,136
19	Mayiladuthurai	10,708
20	Tiruvarur	5,200
21	Pudukkottai	3,910
22	Nagapattinam	1,787
23	Perambalur	9,611
	Sub Total - 2	1,77,731
Total		5,07,260

Advanced techniques like trenchless technology for laying of sewer lines, usage of pre-fabricated manholes, HDPE pipes and other modern technologies for treatment of sewage are being explored.



## **2.6 Sanitation**

Access to basic sanitation facilities is one of the priority areas of action of the Government. With a vision to ensure that the towns are sanitized, healthy, subsistent and sustain public health for all the citizens, the Government have brought to focus open defecation free and garbage free environment.

### **2.6.1 Eradication of Open Defecation**

Sanitation and Public health plays a significant role in the betterment of safe environment. Provision of proper sanitation and maintaining hygienic living conditions has remained a major challenge to the urban local bodies.

Absence of sufficient and well maintained public/ community toilets and the age old practice of open defecation pose serious sanitation problems and health hazards.

Therefore, the Government have announced the total elimination of open defecation recognizing the absence of adequate number of toilets linked to Under Ground Sewerage Scheme. Necessary guidelines and instructions were issued to the urban local bodies and suitable sites have been identified for construction of toilets.

To create awareness on health hazards of open defecation and need for behavioural change a massive awareness campaign has been launched. A detailed survey has been taken up by the ULBs in coordination with NGO's, to identify the locations where open defecation is still practiced, based on which the households without toilets are identified and listed. For those households without requisite space, suitable locations for construction of community toilets were also identified. Based on the survey, a target of 2,24,126 individual house hold latrines have been identified and 3,024

Community toilets with 18,144 number of seats have been fixed.

Construction of 1,205 new Community toilets and rehabilitation of 2059 existing Community toilets have been taken up during the past 5 years at a cost of ₹210.60 crore, from Government of Tamilnadu grant and respective ULBs General Funds, out of which construction of 1048 new Community toilets and rehabilitation of 1,930 existing Community toilets have been completed and remaining works are in various stages of progress.

A “Universal Design Toilet – Namma Toilet” has been developed by the Commissionerate of Municipal Administration with a view to improve the usability by different types of user groups, such as men, women, children, elders and differently abled. It is being implemented in various ULBs and has received a positive feedback from all the users. On the

same lines of Universal Access and Design, retrofitting manual for Municipal Engineers to improve the existing toilets has been prepared. So for 265 Namma Toilets are taken up and 230 are completed and the toilet module installation work is in progress in balance 35 toilets.

### **2.6.2 Septage Management**

There are 12 Corporations, 124 Municipalities, 528 Town Panchayats and 12,524 Panchayats functioning in the state. Out of these local bodies, all the Corporations and 23 Municipalities and 3 Town Panchayats are provided with Under Ground Sewerage Schemes (UGSS) functioning. Even among these local bodies where (UGSS) is in place, the coverage is part of the town only. Moreover, the fringe local bodies are experiencing tremendous rate of growth, due to the fast pace of urbanization in Tamilnadu. Hence, there is

need to provide fecal septage management to serve the uncovered areas of such local bodies and also safely handle the faecal sludge from the nearby ULBs and Rural local bodies, where there are no systems in place, based on cluster approach.

Partially treated sewage that is stored in a septic tank is commonly called as Septage. It includes liquids, solids (sludge), as well as fats, oils and grease (scum) that accumulate in septic tanks over a period of time. Septage management includes the process of design of Septic Tanks and collection, safe treatment and disposal of septage. A comprehensive program that regulates periodic septic tank cleaning, as well as septage transport, treatment, re-use and disposal is important in the context of our rapidly urbanizing economies.

### **2.6.2.1 Need for Septage Management**

Comprehensive guidelines have been issued by the Government vide G.O. (Ms) No. 106 MA&WS Department, dated 01.09.2014 to regularize and monitor the handling of faecal sludge. The guidelines contemplated the following initiatives:

- i. Design and Construction of Septic Tanks
- ii. Septic Tank Pumping & De-Sludging
- iii. Septage Transportation
- iv. Treatment and Septage Disposal
- v. Fees/Charges for Collection, Transportation and Treatment
- vi. Information, Education and Communication
- vii. Record-keeping and Reporting (MIS)

35 Clusters have been identified and grouped in such a way that all collection points are situated approximately at a radius of 18 to 20 km from the designated Sewage Treatment Plants (STP). The details of ULBs wise capacity of functioning

STPs, Present Flow and Utilization are as below:

ULB wise Capacity of Functioning STPs, Present Flow and Utilization								
SL NO	Name of the ULB	Year of Commissioning	Capacity (in MLD)	Technology	Inflow (in MLD)	% of Utilization	HSC as on Dec. 31, 2015	HSC as on May 31, 2017
1	Chennai	-	764.00	ASP	530.00	69	5,18,243	5,75,826
2	Chinnamanur	2012	4.00	ASP	2.40	60	3,905	5,647
3	Coimbatore	2010	110.00	SBR	27.00	25	27,850	34,898
4	Cuddalore	2016	12.25	ASP	0.80	7	0	2,201
5	Dharmapuri	2013	4.86	ASP	1.01	21	1,061	2,149
6	Dindigul	2012	13.65	ASP	1.30	10	2,858	5,936
7	Kanchipuram	2012	14.70	WSP	13.50	92	18,557	19,375
8	Karur	2007	15.00	EAP	6.50	43	6,502	9,196
9	Kumbakonam	2009	17.00	ASP	14.00	82	17,653	19,136
10	Krishnagiri	2016	9.00	ASP	0.10	1	0	1,188
11	Madurai	2011	170.70	SBR	40.00	23	1,45,082	1,62,152
12	Maraimalai Nagar	2010	2.02	EAP	1.80	89	4,519	4,582
13	Mayiladuthurai	2007	8.50	WSP	4.80	56	9,568	10,708
14	Mamallapuram	2016	2.34	ASP	0.45	19	0	200
15	Namakkal	2012	5.00	ASP	5.00	100	7,618	9,059
16	Nagapattinam	2016	12.59	ASP	0.70	6	0	1,787
17	Orathanadu	2016	1.50	ASP	0.28	19	0	832
18	Pallavapuram	2011	0.00	ASP	10.58	0	21,020	25,570
19	Perambalur	2013	4.20	ASP	2.50	60	9,169	9,611
20	Pudukottai	2016	10.62	ASP	0.50	5	0	3,910
21	Ramanathapuram	2013	7.00	ASP	3.40	49	5,352	8,060
22	Thanjavur	2007	28.05	ASP	13.00	46	19,727	26,002
23	Thiruvannamalai	2013	8.76	ASP	2.25	26	3,462	5,143
24	Theni-Allinagaram	2015	12.05	ASP	1.00	8	638	4,434
25	Tiruvallur	2016	6.20	MBBR	0.30	5	0	1,589

ULB wise Capacity of Functioning STPs, Present Flow and Utilization								
SL NO	Name of the ULB	Year of Commissioning	Capacity (in MLD)	Technology	Inflow (in MLD)	% of Utilization	HSC as on Dec. 31, 2015	HSC as on May 31, 2017
26	Tiruvarur	2014	6.92	ASP	1.90	27	3,579	5,200
27	Tirunelveli	2007	24.20	WSP	11.00	45	23,487	24,849
28	Tiruppur	2008	15.00	EAP	8.00	53	15,140	15,445
29	Thiruchendur	2016	3.90	ASP	0.03	0.72	0	135
30	Trichirappalli	2007	58.00	WSP	56.00	97	44,414	56,296
31	Udhagamandalam	2000	5.00	ASP	3.50	70	15,074	15,718
32	Udumalaipet	2016	7.81	ASP	1.15	15	0	5,976
33	Vellore	2015	10.28	ASP	0.85	8	0	3,951
34	Virudhunagar	2016	7.65	ASP	0.31	4	0	2,931
35	Viluppuram	2014	12.50	ASP	3.20	26	3,300	4,567
	TOTAL		1395.25		1769.11	55	9,27,778	10,84,259

The enumeration of existing septic tanks, identification of insanitary latrines and establishment of decanting facilities in the functioning STPs are in progress. So far, in Corporations and Municipalities 211 number of lorries has been registered, 1,02,299 number of trips amounting to 860 ML sewage has been collected from septic tanks, carried through lorries to nearby sewage treatment plants and treated there. As a next step First Pilot Faecal



Sludge Treatment Plant is taken up for implementation in Trichy Corporation to serve about 50,000 population with the assistance of Bill and Melinda Gates Foundation.

## **2.7 Animal Birth Control (Dogs) Programme**

The health problems faced by the public from the stray dogs needs to be taken care of with solutions. The World Health Organization has recommended to implement the Animal Birth Control Programme as an alternative to inhuman killing of dogs.

The Animal Birth Control (Dogs) Programme is part of the Public Health function of Corporations and Municipalities. To implement the Animal Birth Control Programme in a humane manner, the sanitary workers and municipal staff have been imparted the training programmes by the reputed NGOs. In April 2013 total grant of ₹5.40 crore was sanctioned to the

Municipalities and Corporations (except Chennai), out of which 60 vehicles have been purchased at a cost of ₹3.00 crore for the transportation of stray dogs and 80 shelters for sterilizations have been constructed at a cost of ₹2.40 crore. Total expenditure of ₹18.5 lakh is incurred for the periodical maintenance of shelters from the year 2013 to till date.

Under Animal Birth Control (Dogs) Programme, the stray dogs in the Municipalities and Corporations (except Chennai) were enumerated in the year 2013 as 2,42,655. Upto March 2017, 1,90,365 dogs were sterilized at a cost of ₹9.57 crore. Sterilization procedure was done by the outsourced Veterinary Surgeons. The dogs are kept in well-established Dog shelters during the operative and post-operative periods and properly taken care of. The sterilized dogs are also immunized anti-rabies vaccines.

The remaining stray dogs are also being sterilized in a phased manner.

## **2.8 Solid Waste Management**

Solid Waste Management is one among the major challenges faced by the State Government and Urban Local bodies. The problems of waste management are much more acute in metropolitan cities. Municipal Solid Waste is largely generated in densely populated areas where its management is most constrained with growth of population and in resources.

In Tamil Nadu, about 7,597 MT of Municipal Solid Waste is being generated daily in 11 Corporations (except Chennai) and 124 Municipalities. To strengthen primary collection, transportation and processing of Municipal Solid Waste, vehicles, machineries and equipments are being procured under Special SWM fund and Swachh Bharath Mission. For processing of MSW activities, Windrow composting, vermicom

posting, establishment of Resource Recovery Centres, Biomethanation plants, Biomining and other processing facilities are encouraged.

### **2.8.1 Integrated Solid Waste Management Projects**

Integrated Solid Waste Management (ISWM) projects have been taken up at a cost of ₹99.00 crore for Tambaram, Pallavaram, Sembakkam, Anakaputtur and Pammal Municipalities on a cluster basis at Vengadamangalam to handle 300 TPD of MSW. Phase-I work has been completed and Compost and Refuse Derived Fuel (RDF) Plant is in progress. In the Phase II Waste to Energy project, work is in progress with expected electrical power output of 2.9MWh. So far, 1,506 MT of compost has been produced and 680 MT lifted. 43,354 MT of Refuse Derived Fuel has been produced and 3,920 MT sold.

As a special initiative the Government had constituted a Special Solid Waste Management (SWM) Fund with an annual allocation of ₹100 crore to support financially weaker ULBs for implementation of ISWM projects. So far 116 Urban Local Bodies have been covered at an estimated cost of ₹862.32 crore wherein 1,415 works have been taken up and out of which, 394 works are completed and rest of the works are in different stages of implementation.

### **2.8.2 Bio-Methanation Plants**

Municipal Solid Waste consists of 50-60% of bio-degradable matter and the rest is recyclables and inerts. Of the total bio-degradable waste generated, approximately 20%–25% of waste comes from bulk waste generators viz., hotels, restaurants, marriage halls, vegetable markets, slaughter houses. In order to reduce and utilize Bio-Degradable waste from the Bulk Waste Generators, 33 Biomethanation plants of

capacity 3 MT, 5MT and 10MT have been taken up for the capacity of 179 TPD in 8 Corporations and 28 Municipalities at a cost of ₹30.39 crore with financial assistance through IUDM Scheme, Part-II scheme and SWM Fund.

Among 36 ULBs, in 31 ULBs with a capacity of 153 TPD the works have been completed and in the remaining ULBs the works are in different stages of implementation.

The energy derived out of these Biomethanation plants are used for illuminating the lights at compost yard, for the functioning of processing plant machineries, energy for the STP plants available at the site, thermal energy for the Amma Unavagam and crematoria. Any extra electrical energy so derived will be fed to the grid in association with TANGEDCO.

### **2.8.3 Composting**

Utilizing the bio degradable segregated waste by formation of windrow composting is being taken up in all ULBs. As of now, 5 Corporations and 56 Municipalities produce 60,290 MT of compost and Vermi Compost annually and the same is used for agricultural purposes.

Memorandum of Understanding has been entered into with the Fertilizer Manufacturing Companies for sale of Compost produced as per GOI directions. Based on that, 4 Corporations and 5 Municipalities have executed tripartite agreement with M/S Madras Fertilizers Ltd, Chennai. So far 885 MT has been lifted.

### **2.9 Roads**

Road network is vital for sustained growth of the economy. Roads are designed for an intended span of life and are laid based on

Ministry of Road Transport and Highways (MORTH) specifications taking their cost effectiveness into consideration.

The Corporations (except Chennai) and Municipalities maintain roads for a total length of 23,349.93 km. Of which 5,452.45 km are cement concrete roads, 15,702.80 km are black topped roads, 660.308 km are WBM roads, 1,406.71 km are earthen roads and 127.662 km are other roads like cut stone pavement, paver block.

The maintenance of roads, restoring and relaying the damaged roads due to implementation of water supply schemes, underground sewerage schemes and natural calamities is supported under various schemes as given below.



### **2.9.1 Tamil Nadu Urban Road Infrastructure Programme (TURIP)**

The Government have announced an "Urban Road Infrastructure Programme" for taking up road restoration works where utility lines like water supply and sewerage lines were added to city's infrastructure or unseasonal rains/ natural calamities caused damage to the roads.

During the last six years under this programme, 4,013.19 km length of roads damaged due to the implementation of Under Ground Sewerage Schemes, Water Supply Improvement Schemes and natural calamities were taken up at an estimated cost of ₹2,098.05 crore comprising 4,772 works, of which 4,520 have been completed at a cost of ₹1,499.76 crore as detailed below:

Year	Sanctioned cost (₹ in crore)	Length in Km	Total Number of works		
			Taken up	Completed	Balance
(1)	(2)	(3)	(4)	(5)	(6)
2011-12	200.00	584.394	1035	1035	0
2012-13	186.50	516.115	1084	1084	0
2013-14	265.61	523.313	1063	1061	2
2014-15	263.12	501.610	1084	1081	3
2015-16	258.29	1016.410	248	184	64
2016-17	247.16	871.35	258	75	183
Total	1420.68	4013.192	4772	4520	252

### 2.9.2 Integrated Urban Development Mission (IUDM)

Since the launch of IUDM, from the year 2011-12 to 2014-15, 2,115 works were taken up in 1,416.03 Km length of roads at an estimated cost of ₹501.58 crore. Out of this, 2,114 works have been completed at a cost of ₹530.40 crore as detailed below:

Year	Sanctioned cost (₹ in crore)	Length in Km	Total no of works		
			Taken up	Completed	Balance
(1)	(2)	(3)	(4)	(5)	(6)
2011-12	152.11	483.62	829	829	0
2012-13	172.49	496.45	976	976	0

Year	Sanctioned cost (₹ in crore)	Length in Km	Total no of works		
			Taken up	Completed	Balance
(1)	(2)	(3)	(4)	(5)	(6)
2013-14	172.97	432.86	303	303	0
2014-15	4.01	3.100	7	6	1
Total	501.58	1416.03	2115	2114	1

### **2.9.3 Uniform Retro Reflective Road Signage**

Massive restoration and relaying of roads in the ULBs under various schemes have been taken up by the Government. A programme was taken up to provide uniform retro reflective road signage in order to enhance the utility and usefulness of these roads to the commuters and tourists by giving proper signage like names, cautions and tourist destination. There are totally 21,337 streets in Corporations and 41,720 streets in Municipalities. Major streets and junctions are covered with about 15,021 road fixtures in the Corporations and Municipalities. This will be continued while any

road relaying or road improvement programmes are taken up for implementation.

#### **2.9.4 Plastic Roads**

Plastic waste and its disposal poses a major threat to the environment. This Government have placed great importance on the effective use of plastic waste to reduce environmental degradation. In order to ensure a plastic free environment, road laying in Corporations and Municipalities is being done based on plastic waste technology. Based on the Policy of the Government to use the available plastic waste to the maximum extent possible, a programme of laying the roads using plastic waste has been taken up in the Urban Local Bodies.

With financial assistance from Urban Local Bodies general fund and Government special fund, 1,634.274 metric tonnes of plastic waste has been utilized in laying 1,035.23 Km length of roads during the last five years. To promote

the collection, segregation and shredding of plastic waste, Self Help Groups (SHGs) are trained and engaged in these activities.

## **2.10 Street Lights**

Street Lights command a major thrust in infrastructure development. Street lighting is a basic amenity and one of the most important responsibilities of a local body. The 11 Corporations (except Chennai) and 124 Municipalities in the State maintain a total of 7.39 lakh street lights. Street lighting expenditure constitutes 25-30% of the electricity bill of the urban local bodies, which is a heavy burden on the financial resources of the ULBs. This necessitated the implementation of measures to increase energy efficiency in street lights.

Energy efficiency measures, on a pilot basis, including Operation and Maintenance have been taken up in 9 Corporations and 35

Municipalities of Thanjavur and Tiruppur Regions utilizing the Energy Saving Companies (ESCO). It is expected to bring about 30–40% reduction in the electricity bill. For this project, a sum of ₹183.63 crore has been allocated under IUDM during 2011-12, 2012-13, 2013-14 and 2014-15. Out of the 3,13,507 total street lights of all categories it was proposed to retrofit 2,16,680 FTL to LED lights of which the retrofitting of 1,56,962 has been completed and balance are in progress.

Further, it is proposed to implement the Energy saving measures by converting all the street lights of all categories into LED lights in Dindugal Corporation and the balance 90 Municipalities, in which all the 3,07,300 lights are proposed to be converted into LED lights with 100% Capital Investment by the Energy saving companies.

## **2.11 Special Infrastructure Programme**

### **2.11.1 Modern Gasifier Crematorium**

Cremation to a greater extent is performed according to the social customs by direct wood burning in an open space. Due to improved/upgraded technology adoption, Gasifier Cremation can be completed in 60 to 90 minutes as against the conventional time requirement of not less than 4 hours and cremation can be performed equally efficiently during rainy season also. This reduces the use of firewood by more than 50%.

Out of the 135 ULBs, 96 ULBs were identified for construction of 112 modern gasifier crematoria and an allocation of ₹37.88 crore has been made. Out of the 112 gasifier Crematoria taken up, 86 have been completed and maintained by NGOs and Philanthropic Organisations. Construction of the remaining

26 crematoria are in various stages of implementation.

### **2.11.2 Modern Slaughter Houses**

Slaughtering animals on a large scale poses significant public health concerns, with open slaughtering increasing the risks of water and air pollution. In order to modernize the slaughter houses and to make them environment friendly and free from health hazards, during the last five years, under Part-II and Infrastructure Gap Filling Funds, 38 Modern Slaughter houses were taken up in 8 Corporations and 26 Municipalities at a cost of ₹10.81 crore. 28 Slaughter houses have been completed and others are in various stages of implementation.

With the assistance of 50% grant from the Ministry of Food Processing Industries, Government of India, a Modern Abattoir at an estimated cost of ₹9.85 crore has been sanctioned for Tiruchirapalli Corporation. The



works will be completed in all aspects by August 2017.

### **2.11.3 Roof Top Solar Energy**

This department is taking various steps in order to generate 3,000 MW of power from solar energy. One of the steps taken is to enumerate the total number of buildings owned by the ULBs and to establish roof top solar panels on them to produce electricity and use it for office requirements and subsequently for street lights, water supply works.

A training programme with the assistance of Auroville Institute of Applied Technology on technology and management aspects of solar energy was conducted to train the ULB engineers on solar power technologies and about 172 Engineers were trained. As a first stage, solar roof top photovoltaic panels have been established in the Commissionarate of Municipal Administration, Chennai to produce 50 KW

power for office use and every day, about 250 Kwh power is generated in the day time thereby reducing electricity charges considerably. So far, roof top solar energy aggregating to 2,198 Kwh has been produced through the solar panels installed in 445 ULB buildings. In continuation of this effort, it is proposed to establish roof top solar photovoltaic panels in all ULB buildings including water supply head works, treatment plants, sewerage treatment plants, and compost yards in due course.

A feasibility report has been prepared for the installation of such facilities in all the ULBs to the capacity of 53,802 Kw.

#### **2.11.4 Non Motorized Transport**

The Commissionerate of Municipal Administration has prepared a project - "Sustainable Cities through Transport" as most of our city roads and streets do not have committed facilities for pedestrians, cyclists,

public transport system and small wheeled transport (skates, skate boards, scooter, push carts). The planning process has been initiated to develop transport budgets for Coimbatore, Madurai, Tiruchirappalli, Tiruppur and Salem Corporations in partnership with the Institute for Transportation and Development Policies (ITDP) and with the support from ICLEI South Asia (ICLEI-SA). The project envisages a more safe, convenient and equitable transport system for each of these cities. The planning process for the five cities has started with gathering of specific transport data and other information. The cities have prepared project plans with the objectives of improving public transport, supporting walking and cycling, improving safety on streets, enhancing public transport accessibility and improving air quality. This programme will be implemented in a phased manner commencing this year. The Detailed Project Reports for implementation of NMT infrastructure for 3

Corporations viz, Coimbatore, Tiruppur, and Tiruchirappalli at a project cost of ₹62.42 crore are under finalization.

## **2.12 Infrastructure, Operation and Maintenance Gap Filling Fund**

The Government have increased the share of Infrastructure Gap Filling Fund and O & M Gap Filling Fund (O&M GFF) from 3% to 7% and 2% to 3% respectively based on the recommendations of the 4th State Finance Commission. During the last 6 years, 4,685 works have been taken up at an estimated cost of ₹1,050.45 crore under IGFF, out of which 3,906 have been completed and the balance works are in various stages of implementation. Under the Operations and Maintenance Gap filling funds, 473 works have been taken up at an estimated cost of ₹423.58 crore of which 209 works have been completed and balance works are in various stages of implementation.

## **2.13 Construction of Office Buildings**

Due to paucity of funds, ULBs are unable to take up construction of new buildings or upgrade their existing facilities through many of the Municipalities do not have sufficient office accommodation. It is the intention of the Government to provide a better environment for the citizens and employees of the ULBs.

From the year 2011-12 to 2016-17, a grant of ₹110.46 crore has been sanctioned to 78 ULBs under IGFF, O&MGFF and Part-II schemes. Out of these, 42 office buildings have been completed and remaining are in various stages of implementation.

## **2.14 Sanitary Workers Welfare**

70% of the workforce (30,109 persons out of total 43,089 persons) of the Urban Local Bodies constitute sanitary workers. Their role is critical in maintaining basic sanitation and solid

waste management services which is the core function of the ULBs. It is important to give them a safe and healthy working environment.

Under IGFF,O&M GFF and Part II scheme, the government have sanctioned ₹49.61 crore during the last five years to 37 ULBs for construction of 1,036 quarters for sanitary workers, as detailed below:

Year	No. of ULBs	No. of unit	Present Status	
			completed	Under progress
2011-12	3	72	72	0
2012-13	6	80	80	0
2013-14	11	336	318	18
2014-15	8	214	152	62
2015-16	5	200	0	200
2016-17	4	134	0	134
Total	37	1036	622	414

## **2.15 Centrally Sponsored Schemes**

### **2.15.1 Smart Cities**

The Government of India launched Smart Cities Mission on 25.06.2015. The objective of the Smart Cities Mission is to create world class

cities as per the aspirations and needs of the citizens.

The Smart City consists of two major components viz, Area Based Development (ABD) and provisions of PAN City solutions.

Area based Development consists of provision for adequate water supply, assured electricity supply, sanitation, including solid waste management, efficient urban mobility and public transport, affordable housing especially for the poor, Robust IT connectivity and digitalization, Good governance, especially e-Governance and citizen participation, sustainable environment, safety and security of citizens, particularly women, children and the elderly, and health and education.

Pan-city development envisages application of selected Smart Solutions to the existing city-wide infrastructure. Application of Smart

Solutions will involve the use of technology, information and data to make infrastructure and services better.

Based on the “City Challenge Competition”, Chennai and Coimbatore Corporations were selected in the first year for 2015-2016 in Tamil Nadu. The Special Purpose Vehicle (SPV) has been formed and the project identification is under progress for implementation. The PMC has been appointed for this project.

#### **2.15.1.1 Coimbatore Smart City**

Under Area Based Development (ABD), the works such as Lake Restoration & Lake front Development, Footpath/Cycle Tracks, Bike sharing, Landscaping, Drains/ducting, Non-Motorized Transport, bridges, parking, road surfacing, improvement of water supply system, septage management & toilet, improvement of solid waste management, solar panel on government buildings & LED street



lights, providing renewable energy at Kavundampalayam compost yard, smart schools have been proposed for implementation at an estimated cost of ₹1,071.00 crore.

Under Pan City Based Development, the works such as energy efficient street lights, mobile app and CCTV surveillance and air quality monitoring have been taken up for an amount of ₹143.00 crore.

The Government of India and Government of Tamil Nadu will contribute ₹500.00 crore each for the project period. The GoI and GoTN has released an amount of ₹386.00 crore for the Coimbatore Corporation

### **2.15.1.2 Smart Cities of Madurai, Vellore, Salem and Thanjavur Corporation**

In the 2nd year Madurai, Salem, Thanjavur and Vellore Corporations have been selected and the Special Purpose Vehicle has been formed

and the project identification is under progress for implementation.

The Government of India and Government of Tamil Nadu have released an amount of ₹ 876 crore for Madurai, Vellore, Salem and Thanjavur Corporations.

The core infrastructure works cover the sectors of Heritage, Non Motorized Transport, Water and Sanitation including SWM Revamping of public places under Area Based Development (ABD) and Integrated City management Control center, Intelligence Transport System and CCTV surveillance under city wide Pan City solution.

### **2.15.2 Atal Mission for Rejuvenation and Urban Transformation (AMRUT)**

The Government of India launched Atal Mission for Rejuvenation and Urban Transformation on 25.06.2015. The cities having more than one lakh population are selected for

implementation under this scheme. In Tamil Nadu 12 Corporations, 20 Municipalities and 1 Town panchayat have been selected.

During the year 2015-2016 9 water supply improvement works and 90 parks at an estimated cost of ₹2,007.90 crore have been taken up for implementation with the following cost sharing basis:

GOI Share : ₹936.73 crore

GOTN Share : ₹401.58 crore

ULB Share : ₹669.59 crore

An amount of ₹187.35 crore from Government of India and 80.32 crore from Government of Tamil Nadu ie., 20% of the project cost has been released to Mission Directorate for release of fund to respective urban local bodies

### **2.15.3 Jawaharlal Nehru National Urban Renewal Mission (JnNURM)**

In Tamil Nadu, Chennai, Madurai and Coimbatore are the Mission Cities. The

Jawaharlal Nehru National Urban Renewal Mission envisages an integrated approach to infrastructure development in the Mission Cities and their suburbs.

### **2.15.3.1 Urban Infrastructure and Governance (UIG)**

Details of the works taken up under the UIG are given below:

Sl No	Name of the scheme	No of ULBs	Sanctioned amount (₹crore)	Number of projects	
				Taken up	Completed
1	Water supply	9	1,169.87	12	9
2	Storm Water Drains	2	528.31	2	2
3	Solid Waste Management	4	215.01	3	2
4	Under Ground Sewerage Scheme	4	925.49	4	0
	Total	19	2,838.68	21	13

The above 21 projects have been taken up for implementation in Madurai and Coimbatore Corporations and the ULBs in their agglomeration and also in the Municipalities of Chennai Agglomeration, of which 13 projects

have been completed and others are in various stages of implementation.

### **2.15.3.2 Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT)**

The UIDSSMT Scheme is being implemented in ULBs, which are not covered under the Urban Infrastructure & Governance (UIG). The admissible components under the scheme include all core urban infrastructure development projects such as water supply, sewerage, solid waste management, construction and improvement of drains/storm water drains, construction /upgradation of roads, parking lots / spaces on Public Private Partnership (PPP) basis, development of Heritage areas and preservation of water bodies. Details of Projects taken up are as follows:

SI No	Name of the scheme	No of ULBs	Sanctioned amount (₹ Crore)	Number of projects	
				Taken up	Completed
1	Roads and Drains	16	69.41	16	16
2	Water supply	40	740.47	40	35
3	Under Ground Sewerage Scheme	11	607.54	11	2
4	Solid Waste Management	1	3.58	1	1
	Total	68	1,421.00	68	54

### **2.15.3.3 Housing for Urban Poor**

Providing access to safe, healthy, affordable and sustainable housing for the urban poor is the prime objective of the Government. The Government of India under JnNURM launched the following sub-missions in the year 2006

- Basic Services to the Urban Poor (BSUP) in the Mission cities such as Chennai, Madurai and Coimbatore Corporations and its agglomeration towns
- Integrated Housing and Slum Development Programme (IHSDP) in all other towns.

### **2.15.3.4 Basic Services to the Urban Poor (BSUP)**

Provision of basic services to the urban poor including security of land tenure, affordable prices, improved housing and water supply are aimed by BSUP projects, while ensuring the convergence of existing services of the Government such as health, education, social security.

The Government of India have so far sanctioned 51 projects under this scheme, at a project cost of ₹2,316.02 Crore for the construction of 89,720 dwelling units, out of which 79,071 have been completed. Remaining 10,649 works are in various stages of implementation. Out of 3,852 infrastructure works, 3,792 have been completed. Balance 60 works are in advanced stages of implementation.

The details of the projects implemented by various agencies are as follows:

Name of the Implementing Agency	Project cost (₹ in crore)	Housing units			Infrastructure works		
		Sanctioned	Completed	In Progress	Sanctioned	Completed	In Progress
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TNSCB	1370.28	42318	36543	5775	65	42	23
CMA	679.51	42010	37348	4662	934	932	2
DTP	43.16	2348	2348	0	186	186	0
COC	223.07	3044	2832	212	2667	2632	35
Total	2316.02	89720	79071	10649	3852	3792	60

### **2.15.3.5 Integrated Housing and Slum Development Programme (IHSDP)**

The holistic development of slums by providing adequate shelter and basic infrastructure facilities to the slum dwellers is



the aim of the IHSDP projects. The Government of India have approved 94 projects for a sum of ₹566.11 crore. It is being implemented in 93 Towns with central assistance of ₹400.45 crore.

Out of 37,715 Housing units sanctioned, 37,202 dwelling units have been completed and 513 units are under progress. Out of 2,233 infrastructure works sanctioned, 2,163 works have been completed and the balance works are under various stages of implementation.

The details of the projects implemented by various agencies are as below:

Name of the Implementing Agency	Project cost (in crore)	Housing units			Infrastructure works		
		Sanctioned	Completed	Under Progress	Sanctioned	Completed	In Progress
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TNSCB	20.09	1443	1443	0	-	-	-

CMA	486.57	31730	31217	513	1957	1887	70
DTP	59.45	4542	4542	0	276	276	0
<b>Total</b>	<b>566.11</b>	<b>37715</b>	<b>37202</b>	<b>513</b>	<b>2233</b>	<b>2163</b>	<b>70</b>

#### **2.15.4 Deendayal Antodaya Yojana – National Urban Livelihood Mission (DAY-NULM)**

The Ministry of Housing and Urban Poverty Alleviation, Government of India has launched DAY-NULM and the scheme is implemented in place of SJSRY from the year 2014-15. The components of DAY-NULM are -

1. Social Mobilization and Institution Development (SM & ID)
2. Capacity Building and Training (CB & T)
3. Employment through Skills Training and Placement (EST & P)
4. Self Employment Programme (SEP)
5. Support to Urban Street Vendors
6. Scheme of Shelter for Urban Homeless

The State and Central Funds allocated for DAY-NULM scheme for the year 2016-17 is ₹172.11 Crore. The Scheme has been extended to all the statutory towns including Town Panchayats. The first four components namely SM & ID, CB & T, EST & P and SEP are being implemented by TNCDW;

The Scheme of support to Urban Street Vendor is a component of NULM. In the survey of Street Vendors, 63,359 Street Vendors have been identified. The Tamil Nadu Street Vendors (Protection of Livelihoods and Regulation of Street Vending) schemes & rules 2015 have been notified by the Government which will enable smooth implementation of this scheme.

Under the Shelter for Urban Homeless component of NULM 2014-2015 141 Shelter units have been sanctioned through three Project Sanctioning Committee meetings. These includes 23 Special Shelters announced by

late Hon'ble Chief Minister under Rule 110 (2016-17). The 141 shelter units covers 6,546 Homeless at a total Projects Cost of ₹42.38 Crore in which 87 Shelters with 3,952 inmates are already in operation. The Construction of 54 Shelters are under various stages of progress.

### **2.15.5 SWACHH BHARAT MISSION**

The Ministry of Urban development had launched the Swachh Bharat Mission on 02.10.2014 for a period of five years with the mission objectives of (i) Elimination of open defecation, (ii) Eradication of Manual scavenging, (iii) Modern & scientific Municipal solid waste management, (iv) to effect behavioral change regarding healthy sanitation practices, (v) Generate awareness about sanitation and its linkage with public health, (vi) Capacity augmentation for urban local Bodies and to create enable environment for

private sector participation in capital expenditure Capex & Opex.

The Government of Tamil Nadu has accorded administrative Sanction for the implementation of the scheme of Swachh Bharat Mission with components such as construction of individual household latrine, community toilet, solid waste management, IEC activities, capacity building A & OE charges. State Level High Powered Committee has been constituted under the chairmanship of Principal secretary MAWS department for proper implementation and supervision of works under the programme.

#### **2.15.5.1 Individual House Hold Latrines**

<b>Year</b>	<b>Target</b>	<b>Completed</b>	<b>Progress</b>
2015-16	98,048	98,048	0
2016-17	1,26,078	18,692	1,07,386
Total	2,24,126	1,16,740	1,07,386

The entire plan period target for IHHL will be completed during 2017-18

### **2.15.5.2 Community Toilets**

<b>Year</b>	<b>No.of Toilets</b>	<b>Seat</b>	<b>Completed</b>	<b>Progress</b>
2014-15	293	2,167	2,167	0
2015-16	449	4,255	3,663	562
2016-17	217	2,196	0	2,196
Total	959	8,618	5,830	2,758

For the year 2017-18 Community Toilets 2,575 seats will be taken up.

### **2.15.5.3 Solid Waste Management**

Integrated Solid Waste Management Projects have been taken under Special Solid Waste Management fund constituted by Government of Tamilnadu and Swachh Bharat Mission fund. So far 116 Urban Local Bodies have been covered at an estimated cost of ₹862.32 crore wherein 1,415 works have been taken up and out of which, 382 works are completed and rest of the works are in different stages of implementation.

#### **2.15.5.4 Information, Education and Communication (IEC) activities**

Government has approved this project to engage 3,046 Animators at a cost of ₹154.20 crore for the 3 years from 2016-17 to 2018-19 for the effective Information, Education and Communication (IEC) activities to create awareness on Cleanliness and Sanitation and to eradicate Open Defecation and to efficiently handle the Segregated Bio waste and recyclable waste. For the year 2016-17 to carry out the IEC activities an amount of ₹57.14 crore has been approved and 904 animators and 360 animators are permitted to 124 Municipalities and 11 Corporations respectively.

#### **2.15.6 Heritage City Development and Augmentation Yojana - HRIDAY**

The Ministry of Urban Development (MoUD), Government of India launched the Heritage City Development and Augmentation Yojana (HRIDAY) with a focus on promoting the

holistic development of heritage cities. The scheme aims to preserve the culture, arts and architecture of heritage cities and develop them to be more aesthetically appealing, accessible, livable safer and sustainable city without disturbing their unique character .

The scheme is being implemented through a partnership between the central, state and private sector, academic institutions. The funds required for this scheme is fully borne by the Government of India. The period of implementation of this scheme is 4 years. (January 2015 to November,2018).

Kancheepuram is one of the cities selected by the Government of India for Heritage City Development. City Level Advisory Monitoring Committee has been constituted under the chairmanship of District Collector of Kancheepuram with 10 Members.



The overall funding allocation under this scheme for Kancheepuram is as follows:

SI.No	Details of Work	₹ in Crore
1	Arulmigu Varadharaja Perumal Temple (To improve the Roads and Streets around the Temple)	763.86
2	Arulmigu Ekambaranathar Temple (To improve the Roads and Streets around the Temple)	989.72
Total		1753.58

## **2.16 Externally Aided Projects**

The Government of Tamil Nadu are implementing the following external aided projects:

### **2.16.1 Japan International Cooperation Agency (JICA) assisted TNUIP**

9 Water Supply Improvement Schemes at an estimated cost of ₹663.68 crore in 9 Urban Local Bodies were taken up under this project for implementation. Out of which 4 schemes

have been completed and remaining 5 schemes are under progress.

### **2.16.2 German Development Bank (KfW) assisted SMIF**

23 schemes viz, Road improvement, Storm water drain, Water Supply improvement and Under Ground Sewerage schemes were taken up under this project in 18 Urban Local Bodies at a cost of ₹1468.14 crore. Of these, 11 schemes have been completed and the remaining 12 schemes are under way in various stages.

### **2.16.3 Tamil Nadu Sustainable Urban Development Project (TNSUDP)**

Government have accorded administrative sanction for implementation of World Bank assisted Tamil Nadu Sustainable Urban Development Project (TNSUDP) at a cost of ₹3831.00 crore.

The project consists of 3 components viz, Urban Governance Component, Urban Sector

Technical Assistance Component and Urban Investment Component.

The Urban Governance (Model City) Component and Urban sector Technical Assistance Component are being implemented by the Commissioner of Municipal Administration.

The Urban Investment Component is being implemented through Tamil Nadu Urban Infrastructure and Financial Services Limited. 3 Water Supply Improvement Schemes have been taken up at an estimated cost of ₹211.88 crore with retro financing and works are under progress. 2 Water Supply Schemes, 1 Under Ground Sewerage Scheme and 3 water body improvement works have also been taken up at an estimated cost of ₹976.80 crore.

### **2.16.3.1 Urban Governance (Model City) Component**

Under Urban Governance (Model City) component, Erode City Municipal Corporation, Vellore city Municipal Corporation and Hosur Municipality have been selected as Model cities. This component will support these three Model Cities in improving Urban Management in four areas namely (i) ULB empowerment and organizational capacity (ii) spatial / development planning (iii) sustainable finances and (iv) e-governance and public disclosure.

These cities will be provided an annual grant based on satisfactory performance in the above Urban Governance / Management areas. An amount of ₹153.24 crore each to Erode and Vellore Corporation and an amount of ₹76.62 crore to Hosur Municipality is earmarked for release of grant for the years from 2016-2017 to 2021-2022 towards the achievements made

against the targets fixed under the above mentioned Urban Management areas.

As against the achievements made on Disbursement Linked Indicators (DLI) targets fixed for the year 2014-15 and 2015-16, an amount of ₹25.54 crore each to Erode and Vellore City Municipal Corporation and ₹12.77 crore to Hosur Municipality has been sanctioned and released in the year 2016-17. The same quantum of amount will be sanctioned and released to these cities in the year 2017-18.

### **2.16.3.2 Urban sector TA Component**

Under this component, the following four sub components are being implemented by the Comissioner of Municipal Administration:

<b>S.No</b>	<b>Component</b>	<b>Total Financing</b>	<b>World Bank Financing</b>
		<b>(US \$ Million Dollars)</b>	
i	Municipal E-governance/ PFM and GIS	21.50	11.50
ii	Knowledge and Institutional Strengthening	7.00	6.00
iii	Project preparatory Fund	2.00	0
iv	Project Management, Incremental Operation Costs	3.5	3.5
	Total	34.00	21.00

### **2.16.3.3 E-governance in Urban Local Bodies**

The Government of Tamil Nadu are giving a major thrust to e-governance systems in Municipal Administration. 29 Municipal e-governance modules have been identified for providing quick and better services to the urban citizens. To achieve this goal, a major e-governance project namely "Centralized Web

Based Software Application for all Urban Local Bodies” was taken up for implementation under TNSUDP at a cost of ₹18.31 crore. 12 modules have been implemented in 11 Corporations and 124 Municipalities in the year 2016-2017. 4679 staff of urban local bodies were provided end users training on 12 modules of CWBS application. The remaining 17 modules will be implemented in all 135 urban local bodies under the control of Commissioner of Municipal Administration before the end of August 2017.

#### **2.16.3.4 Geographical Information System (GIS)**

The door to door survey of properties, preparation of Base Map and Utility Mapping using Geo-spatial techniques were completed in 7 Corporations and 10 Municipalities under TNUDP III. It is proposed to take up this project in all the remaining 118 Urban Local Bodies under the ongoing TNSUDP. In the first phase, GIS project will be taken up in 14 Municipalities

during the year 2017-18 at an estimated cost of ₹4.67 crore.

### **2.17 Tamil Nadu Institute of Urban Studies (TNIUS)**

Tamil Nadu Institute of Urban Studies, Coimbatore was established in 1981 with a view to achieving greater efficiency in the functioning of the administration of Urban Local Bodies. The main objectives are

- i) To create awareness on the need for the application of latest management techniques in various branches of Municipal Administration,
- ii) To disseminate knowledge of municipal administration and urban development through training programmes, seminars, conferences and publications.
- iii) To conduct research studies and consultancy services in urban



development, municipal administration and related disciplines, and

- iv) To foster and assist in the development of urban infrastructure and for integrated urban development.

The annual contributions collected from the Municipal Corporations, Municipalities and Town Panchayats constitute major source of revenue for its operation.

The Institute has signed Memorandum of Understanding (MoU) with reputed State and National Training and Research Institutions viz., Engineering Staff College of India (ESCI), Hyderabad, Indian Institute of Human Settlement (IIHS), Bengaluru and ICT Academy of Tamil Nadu, Chennai, Karunya University, Coimbatore and Kumaraguru College of Technology, Coimbatore.

The main objective of the most recent MoU signed by the TNIUS with between Kumaraguru College of Technology is for conducting joint training /seminar, workshops / Conferences / training programmes / degree courses / exposure visits for the benefit of the students and urban local bodies' officials.

Based on this MoU, two day National Seminar on "Smart and Livable Cities" was conducted in Kumaraguru College of Technology, Coimbatore on 24th and 25th Feb 2017. Engineering Officials and Town Planning Officials from the urban local bodies attended the seminar.

## **2.18 Corporations**

### **2.18.1 Madurai Corporation**

Madurai Corporation was constituted on 01.05.1971. The population as per 2011 census is 15,61,129 and the extent is 147.99 Sq.Km with an average annual income of ₹348.98 crore.

During the year 2016-17, the following projects have been taken up for implementation:

- 10 Parks at an estimated cost of ₹4.86 crore have been taken up under AMRUT and works are in progress in 5 parks and others are in tender stage.
- Under Swachh Bharat Mission (SBM), 12,079 numbers of Individual House Hold Latrines have been taken up at a cost of ₹14.49 crore of which 3918 numbers have been completed and others are in progress.
- Under SBM, 24 numbers of Community Toilets have been taken up with 122 seats at a cost of ₹1.20 crore and all the works are under progress.
- Renovations of 8 and construction of 9 new primary health centres under National Urban Health Mission (NUHM),

have been taken up at an estimated cost of ₹4.85 crore. Out of which 8 renovations and 3 new construction works are completed and others are in progress.

- Under National Urban Livelihood Mission (NULM), Construction of 14 Shelters for Urban Homeless and 1 “Short Stay Home” in Government Rajaji Hospital, Madurai were taken up at an estimated cost of ₹460.25 Lakh. 5 works have been completed and 10 works are under various stages of progress.
- Regarding Drought Relief Works, work of erection of new bore wells with pump sets, flushing of existing bore wells, water supply through lorries, extension of pipe lines, construction of infiltration wells at Kochadai and Melakkal at an estimated cost of ₹30.67 crore have been taken up

from SDRF and own fund. Out of 17, 5 works have been completed and remaining works are under progress.

- Under IGFF and O & M GFF, an amount of ₹10.00 crore has been sanctioned against the estimated cost of ₹20.00 crore for the restoration of damaged roads to the length of 41.85 Km. In this 23.76 Km length of roads have been completed and the balance works are under progress.

### **2.18.2 Coimbatore Corporation**

Coimbatore Corporation was constituted on 01.05.1981. The population as per 2011 census is 16,01,438 and the extent is 265.36 Sq.Km with an average annual income of ₹682.64 crore.

During the year 2016-17, the following projects have been taken up for implementation:-

- Water Supply Improvement Scheme to cover added areas viz, Kurichi, Kuniamuthur, Thudiyalur, Vellakinaru, Vilankurichi, Chinnavedampatti, Saravanampatti and Kalapatti at an estimated cost of ₹395.41 crore has been taken up under AMRUT and is under tender stage.
- Water Supply Improvement Scheme at an estimated cost of ₹108.16 crore has been taken up under KfW Fund for covering Goundampalayam, Vadavalli and Veerakeralam areas and the work is under progress.
- Water Supply Improvement Scheme (24X7) at an estimated cost of ₹556.57

crore has been proposed to be taken up under AMRUT.

- 13 Parks at an estimated cost of ₹9.43 crore have been taken up under AMRUT and works are in progress in 6 parks and others are in tender stage.
- Under SBM, 6056 individual house hold latrines have been taken up at a cost of ₹7.26 crore of which 3,298 numbers have been completed and others are in progress.
- Under SBM, 18 community toilets have been taken up with 468 seats at a cost of ₹4.59 crore. Out of to 3 works are completed and balance works are under progress.
- Renovations of 24 and new construction of 4 primary health centres under National Urban Health Mission, have been

taken up at an estimated cost of ₹4.20 crore. Out of this 3 renovations works and 1 new construction works have been completed and others are in progress.

- Under National Urban Livelihoods Mission, Construction of 4 Shelters for Urban Homeless and 1 "Short Stay Home" in Government Hospital, Coimbatore were taken up at an estimated cost of ₹178 Lakh. 4 works have been completed and 1 work is in progress.
- Under TURIP 40.922 km length of roads have been taken up at an estimated cost of ₹20.00 crore. Out of 23.50 Km lengths of roads have been completed and balance works are under progress.
- Under TUFIDCO loan assistance, 20 packages of roads to a length of 60.766 Km have been taken up for restoration at



an estimated cost of ₹44.07 crore. Out of 20 packages, 13 packages have been completed and the balance works are in progress.

- Regarding Drought Relief, works of erection of new bore wells with pump sets, flushing of existing bore wells, water supply through lorries, extension of pipelines have been taken up at an estimated cost of ₹9.94 crore from SDRF and own source. Out of 127 works, 75 works have been taken under SDRF-2017 at an amount of ₹5.00 crore and all works are completed. Remaining 52 works have been taken under General funds at a cost of ₹4.94 crore. Out of these, 38 are completed. Remaining works are under various stages of progress.

### **2.18.3 Tiruchirappalli Corporation**

Tiruchirappalli Corporation was constituted on 01.04.1994. The population as per 2011 census is 9,16,857 and the extent is 167.23 Sq.Km with an average annual income of ₹345.66 crore.

During the year 2016-17, the following projects have been taken up for implementation:-

- Water Supply Improvement Scheme at an estimated cost of ₹63.70 crore has been taken up under KfW and is in progress.
- 5 Parks at an estimated cost of ₹4.78 crore have been taken up under AMRUT and work is in progress in 1 park and others are in tender stage.
- Under SBM, 1900 individual house hold latrines have been taken up at a cost of

₹2.28 crore and all the works have been completed.

- Under SBM, 2 community toilets have been taken up with 20 seats at a cost of ₹0.20 crore and all the works are under progress.
- Integrated Solid Waste Management project to an amount of ₹14.82 crore has been taken up under SBM, ranging from primary collection infrastructure to processing. Out of 23 works taken up 4 works have been completed and remaining works are in various stages of progress.
- Renovations of 10 and construction of 3 new primary health centres under National Urban Health Mission, have been taken up at an estimated cost of ₹2.35 crore. Out of these 7 renovation works

and 2 new construction works are completed and others are in progress.

- Under National Urban Livelihood Mission, Construction of 3 Shelters for Urban Homeless and 2 “Short Stay Homes” one each in Medical college Hospital Tiruchirappalli and Government Hospital, Srirangam were taken up at an estimated cost of ₹225 Lakh. 3 works are completed and 2 works are in progress.
- Regarding Drought Relief, works viz, rejuvenation of bore wells, clearing of radial arms at collector wells, erection of new bore wells in river bed are being carried out at head water works and erection of new bore wells with hand pumps and power pumps, purchase of spares for attending to repairs in bore wells including replacement of hand pump, water supply through lorries,

providing temporary storage tanks at an estimated cost of ₹3.15 crore have been taken up with a grant amount of ₹50.00 Lakhs under SDRF Fund. Remaining ₹2.65 Crore is being met from Corporation General Fund. Out of 20 works, 5 works have been so far completed, retender has been called for 1 work and balance 14 works are under progress.

#### **2.18.4 Salem Corporation**

Salem Corporation was constituted on 01.06.1994. The population as per 2011 census is 8,31,038 and the extent is 91.34 Sq.Km with an average annual income of ₹171.45 crore.

During the year 2016-17, the following projects have been taken up for implementation:-

- 11 Parks at an estimated cost of ₹4.57 crore have been taken up under AMRUT

and works are in progress in 4 parks and others are in tender stage.

- Under SBM, 1515 individual house hold toilets have been taken up at a cost of ₹1.81 crore and all works have been completed.
- Under SBM, 5 Community Toilets have been taken up with 40 seats at a cost of ₹0.39 crore and all the works are under progress.
- Integrated Solid Waste Management project at an estimated amount of ₹17.58 crore has been taken up under SBM, ranging from primary collection infrastructure to processing. All the 14 works are commenced.
- Renovations of 10 and construction of 6 new primary health centres under National Urban Health Mission have been

taken up at an estimated cost of ₹3.70 crore. Out of these, 10 renovations and 5 new construction works were completed and others are in progress.

- Under National Urban Livelihoods Mission, Construction of 5 Shelters for Urban Homeless and 1 "Short Stay Home" in Government Mohan Kumaramangalam Medical college Hospital Salem were taken up at an estimated cost of ₹150 Lakh. 5 works are completed and the remaining 1 work is in progress.
- Under TUFIDCO loan assistance, 41 packages of roads to a length of 121.87 Km have been taken up for restoration at an estimated cost of ₹74.47 crore. Out of 41 packages, 6 packages have been completed and the balance works are in progress.

- Regarding Drought Relief, works of erection of new bore wells with pump sets, flushing of existing bore wells, water supply through lorries and extension of pipelines at an estimated cost of ₹2.05 crore have been taken up from SDRF and own fund. Out of 67 works, 39 works have been completed and the remaining works are under progress.
- Under IGFF ₹3.00 crore has been sanctioned for the construction of Sanitary Workers Quarters, ₹0.75 crore have been sanctioned for construction of Slaughter house and ₹5.00 crore has been sanctioned for Improvement of Bus stand under O&M Gap Filling Fund and all the works are in various stages of implementation.



## **2.18.5 Tirunelveli Corporation**

Tirunelveli Corporation was constituted on 01.06.1994. The population as per 2011 census is 4,74,838 and the extent is 108.65 Sq.Km with an average annual income of ₹122.35 crore.

During the year 2016-17, the following projects have been taken up for implementation:-

- Water Supply Improvement Scheme at an estimated cost of ₹230.00 crore has been taken up under KfW assistance and the work has been commenced.
- Improvement of 9 parks at an estimated cost of ₹4.98 crore have been taken up under AMRUT and works are in progress in 5 Parks and others are in tender stage.
- Under SBM, 3100 individual house hold latrines have been taken up at a cost of

₹3.72 crore of which 2115 number have been completed and others are in progress.

- Under SBM, 6 community toilets have been taken up with 48 seats at a cost of ₹0.47 crore and all works are under progress.
- Renovations of 9 primary health centres under National Urban Health Mission, have been taken up at an estimated cost of ₹0.90 crore. Out of these, 7 renovation works are completed and others are in progress.
- Under National Urban Livelihoods Mission, Construction of 1 Shelter for Urban Homeless and 1 "Short Stay Home" in Tirunelveli Medical College Hospital, Tirunelveli was taken up at an estimated cost of ₹75 Lakh. 1 work has been

completed and another work is in progress.

- Regarding Drought Relief, works of 90 flushing of existing bore wells completed under own fund. Water is supplied through owned lorries regularly. Work of providing temporary channel arrangements at head works, providing new CI connecting main and supply and fixing of 4 submersible motors, supply and delivery of submersible pump sets to draw water from open wells and construction of infiltration wells at an estimated cost of ₹0.84 crore have been taken up from own fund. Out of 12 works taken up 5 works have been completed and remaining works are under progress. Under O&M Gap filling fund, ₹4.70 crore has been sanctioned for laying of sewer

lines in sanitary lanes to a length of 5.279 Km and the work is in progress.

### **2.18.6 Erode Corporation**

Erode Corporation was constituted on 01.01.2008. The population as per 2011 census is 4,98,129 and the extent is 109.52 Sq.Km with an average annual income of ₹161.45 crore.

During the year 2016-17, the following projects have been taken up for implementation:-

- Water Supply Improvement Scheme at an estimated cost of ₹484.45 crore has been taken up under AMRUT and is under tender stage.
- Improvements works of 8 Parks at an estimated cost of ₹4.90 crore have been taken up under AMRUT and works are in progress in 4 parks and remaining 4 are in tender stage.

- Under SBM, 3,554 individual house hold latrines have been taken up at a cost of ₹4.26 crore of which 2,428 nos have been completed and others are in progress.
- Under SBM, 5 community toilets have been taken up with 50 seats at a cost of ₹0.49 crore and all the works are under progress.
- Integrated Solid Waste Management project for an estimated amount of ₹12.77 crore has been taken up under SBM, ranging from primary collection infrastructure to processing. Out of 12 works taken up,3 works have been completed and balance works are in various stages of progress.
- Renovations of 5 and construction of 5 new primary health centres under National Urban Health Mission have been

taken up at an estimated cost of ₹2.75 crore. Out of these, 5 renovations works are completed and others are in progress.

- Under National Urban Livelihoods Mission, Construction of 1 Normal Shelter for Urban Homeless and 1 Special "Short Stay Home" in District head quarter Hospital were taken up at an estimated cost of ₹44.92 Lakh and the works are under various stages of progress.
- Under TUFIDCO loan assistance, 48 packages of roads to a length of 87.00 Km have been taken up for restoration at an estimated cost of ₹86.53 crore. Out of 48 packages, 45 packages have been completed and the balance works are in progress.
- Regarding Drought Relief, works of erection of new bore wells with pump

sets, flushing of existing bore wells, water supply through lorries and extension of pipelines at an estimated cost of ₹2.66 crore have been taken up from SDRF and own fund. Out of 36 works, 32 works have been completed and the remaining works are under progress.

- Under IGFF and O & M Gap filling fund, an amount of ₹3.00 crore has been allotted for the construction of Sanitary workers quarters and ₹0.75 crore for slaughter house and the works are under tender stage.

### **2.18.7 Tiruppur Corporation**

Tiruppur Corporation was constituted on 01.01.2008. The population as per 2011 census is 8,77,778 the extent is 159.35 Sq.Km with an average annual income of ₹196.23 crore.

During the year 2016-17, the following projects have been taken up for implementation:-

- Water Supply Improvement Scheme at an estimated cost of ₹250.00 crore has been taken up under AMRUT and is under tender stage.
- 10 Parks at an estimated cost of ₹6.08 crore have been taken up under AMRUT and works are in progress in 2 parks and others are in tender stage.
- Under SBM 4,428 individual house hold latrines have been taken up at a cost of ₹5.31 crore of which 3,051 have been completed and other works are in progress.
- Renovations of 8 and construction of 9 new primary health centres under National Urban Health Mission have been



taken up at an estimated cost of ₹4.85 crore. Out of these 8 renovations and 3 new construction works were completed and others are in progress.

- Under National Urban Livelihoods Mission, Construction of 4 Shelters for Urban Homeless was taken up at an estimated cost of ₹75 Lakh and all the works has been completed.
- Under TUFIDCO loan assistance, 38 packages of roads to a length of 69.586 Km have been taken up for restoration at an estimated cost of ₹52.17 crore. Out of 38 packages, 33 packages have been completed and the remaining works are in progress.
- Regarding Drought Relief, works of erection of new bore wells with pump sets, flushing of existing bore wells, water

supply through lorries and extension of pipelines at an estimated cost of ₹1.16 crore has been taken up from SDRF and own fund. Out of 13 works, 10 works have been completed and the remaining works are under progress.

### **2.18.8 Vellore Corporation**

Vellore Corporation was constituted on 01.08.2008. The population as per 2011 census is 5,04,079 and the extent is 87.91 Sq.Km with an average annual income of ₹80.42 crore.

During the year 2016-17, the following projects have been taken up for implementation:

- Water Supply Improvement Scheme at an estimated cost of ₹234.93 crore has been taken up under AMRUT and is under tender stage.

- 8 Parks at an estimated cost of ₹4.48 crore have been taken up under AMRUT and works are in progress in 4 Parks and others are in tender stage.
- Under SBM 7,250 Individual House Hold Latrines have been taken up at a cost of ₹8.70 crore of which 3,550 numbers have been completed and other works are in progress.
- Integrated Solid Waste Management project to an amount of ₹2.48 crore has been taken up under SBM for infrastructure works. Out of 5 works taken up, 1 work has been completed and balance works are in progress.
- Renovations of 7 and construction of 3 new primary health centres under National Urban Health Mission have been taken up at an estimated cost of ₹2.05

crore. Out of which 7 renovations and 2 new construction works were completed and others are in progress.

- Under National Urban Livelihoods Mission, Construction of 2 Shelters for Urban Homeless were taken up at an estimated cost of ₹83.70 Lakh and are in progress.
- Under TURIP, 14.98 km length of roads have been taken up at an estimated cost of ₹6.00 crore and all the works are under progress.
- Under IGFF ₹2.50 crore has been sanctioned for the construction of Sanitary Workers Quarters and ₹5.00 crore has been sanctioned for Improvement of existing Bus Stand under O&M Gap Filling fund.

### **2.18.9 Thoothukudi Corporation**

Thoothukudi Corporation was constituted on 5.08.2008. The population as per 2011 census is 3,70,896 and the extent is 90.63 Sq.Km with an average annual income of ₹93.54 crore.

During the year 2016-17, the following projects have been taken up for implementation:

- 6 Parks at an estimated cost of ₹4.15 crore have been taken up under AMRUT and works are in progress in 2 Parks and others are in tender stage.
- Under SBM, construction of 3,618 Individual House Hold Latrines have been taken up at a cost of ₹4.34 crore of which 1720 numbers have been completed and other works are in progress.

- Under SBM, 6 Community Toilets have been taken up with 48 seats at a cost of ₹0.47 crore and all works are under progress.
- Renovation of 5 and construction of 2 new primary health centres under National Urban Health Mission, have been taken up at an estimated cost of ₹1.40 crore. Works are in progress.
- Under TURIP, 24.542 km length of roads have been taken up at an estimated cost of ₹17.91 crore and all the works are under progress.
- Regarding Drought Relief, water supply through lorries, desilting of water inflow channel at Thamiraparani river, repairs of infiltration wells and arrest of leakage works at an estimated cost of ₹0.69 crore have been taken up from SDRF and own

fund. 8 works have been taken up and completed.

### **2.18.10 Thanjavur Corporation**

Thanjavur Corporation was constituted on 19.02.2014. The population as per 2011 census is 2,22,943 and the extent is 36.31 Sq.Km with an average annual income of ₹89.18 crore.

During the year 2016-17, the following projects have been taken up for implementation:

- Water Supply Improvement Scheme at an estimated cost of ₹48.14 crore has been taken up under AMRUT and is in progress.
- 9 parks at an estimated cost of ₹4.78 crore have been taken up under AMRUT and works are in progress in 3 Parks and others are in tender stage.

- Under SBM, 1,346 Individual House Hold Latrines have been taken up at a cost of ₹1.62 crore of which 1,114 numbers have been completed and other works are in progress.
- Construction of 9 new primary health centres under National Urban Health Mission have been taken up at an estimated cost of ₹1.80 crore. Works are in progress.
- Under National Urban Livelihoods Mission, Construction of 1 Shelter for Urban Homeless and 1 "Short Stay Home" in Medical College Hospital, M.Chavadi, Thanjavur were taken up at an estimated cost of ₹134.50 Lakh. One work has been completed and another work is in progress.



- Regarding Drought Relief, works of erection of new bore wells with pump sets, Flushing of existing Bore wells, water supply through lorries and extension of pipelines at an estimated cost of ₹0.46 crore have been taken up from own fund. 7 works have been taken up and works are under progress.
- Under O&M Gap filling fund ₹7.50 crore has been sanctioned for the Improvement of 20.47 Km roads and all the road works are in progress.
- Under IGFF ₹5.00 crore has been sanctioned for the construction of Office Building and ₹1.00 crore has been sanctioned for Gasifier Crematorium and the works are in tender stage.
- Under TURIP, 23.391 km length of roads have been taken up at an estimated cost

of ₹11.07 crore and all the works are under progress.

### **2.18.11 Dindigul Corporation**

Dindigul Corporation was constituted on 19.02.2014. The population as per 2011 census is 2,07,327 and the extent is 14.01 Sq.Km with an average annual income of ₹41.00 crore.

During the year 2016-17, the following projects have been taken up for implementation:

- 9 Parks at an estimated cost of ₹4.81 crore have been taken up under AMRUT and works are in progress in 3 Parks and others are in tender stage.
- Under SBM, 4,600 Individual House Hold Latrines have been taken up at a cost of ₹5.52 crore of which 1,882 number have been completed and other works are in progress.

- Under SBM, 2 Community Toilets have been taken up with 16 seats at a cost of ₹0.16 crore and it is under progress.
- Integrated Solid Waste Management project for an estimated amount of ₹13.90 crore has been taken up under SBM, ranging from primary collection infrastructure to processing. Out of 18 works taken up 5 works are under progress.
- Renovation of one old and construction of 3 new primary health centres under National Urban Health Mission have been taken up at an estimated cost of ₹1.45 crore. Out of which 1 renovation work has been completed and others are in progress.
- Under National Urban Livelihoods Mission Construction of 1 Shelter for Urban

Homeless and 1 "Short Stay Home" in District Head Quarters Hospital were taken up at an estimated cost of ₹82.20 Lakh. One work has been completed and another work is in progress.

- Under TURIP 14.154 km length of roads have been taken up at an estimated cost of ₹10.20 crore and all the works are under progress.
- Regarding Drought Relief, works of erection of new bore wells with pump sets, flushing of existing bore wells, water supply through lorries and extension of pipelines at an estimated cost of ₹0.89 crore have been taken up from SDRF and own fund. Out of 109 works taken up, 42 works have been completed and 67 works in progress

- Under O&M Gap filling fund ₹5.00 crore has been sanctioned for the Improvement of existing Bus stand and is in tender stage.

## **2.19 Vardah Cyclone 2016**

Due to torrential rain with strong winds under the “Vardah Cyclone” on 12th and 13<sup>th</sup> of December 2016, 9 Municipalities in Kancheepuram and 5 Municipalities in Tiruvallur districts were affected. The normal day to day life of public was affected due to up rooting of a large number of trees, damage to the water supply pipelines, collapse of buildings, compound walls, damages to roads, drains, Street lights, E.B. poles and fittings .

In Municipality areas relief works such as removal of 4,463 of fallen trees, pumping out the stagnated flood water with 69 motors and pump sets, restoration of 6.25 km of damaged pipelines, replacement of 184 electrical panel

boards, 28 motor pumps and 10,595 street lights including electrical poles were taken up on war-footing and normalcy was restored. The expenditure to the tune of ₹6.30 crore has been incurred on these works

## **2.20 Honourable Chief Minister's Best ULB Award**

In the year 2012-13, the Government instituted "Hon'ble Chief Minister's Award" to be presented to the best performing Municipal Corporation / Municipalities.

For the year 2015-16, the Dindigul Corporation was adjudged the best among the Corporations (Cash Prize of ₹25 lakh) and Pattukottai, Perambalur and Ramanathapuram municipalities were declared first, second and third respectively among the municipalities (Cash Prize of ₹15 lakh, ₹10 lakh and ₹5 lakh respectively)

The late Hon'ble Chief Minister distributed the cash prizes with a citation to the urban local bodies during the Independence Day Celebrations in the year 2016.

### **3. GREATER CHENNAI CORPORATION**

Chennai City is the biggest and the most important urban agglomeration in Tamil Nadu. This City portrays both historical and modern contemporary Indian culture. The Corporation of Chennai, established on 29<sup>th</sup> September 1688, is the oldest Municipal Institution in the Country and second oldest in the world.

The population of Greater Chennai Corporation as per 2011 census is 67.27 lakhs. After the expansion of area from 174 sq.kms. to 426 sq.kms in 2011 by inclusion of 42 local bodies, it is the 4<sup>th</sup> largest Municipal Corporation in the country. It has a glorious 329 years of history and, carries good mix of heritage as well as modern infrastructure facilities. It derives its statutory authority from the Chennai City Municipal Act, 1919. Corporation of Chennai was renamed as "Greater Chennai Corporation"



by late Hon'ble Chief Minister of Tamil Nadu on 29.01.2016.

The 155 divisions which were in existence prior to this expansion have been re-organised into 107 divisions and newly included local bodies have been organised into 93 Divisions there by totaling to 200 Divisions. The existing 10 Zones have been re-organised into 7 Zones and recently added 42 local bodies have been divided into 8 new Zones; taking the total number of Zones from 10 to 15. For administrative convenience, these zones have been organised into 3 Regions, namely, North Region, Central Region and South Region each comprising of 5 Zones and headed by Deputy/Joint/Additional Commissioners.

Subsequent to the expansion, Government have sanctioned 784 additional posts, to augment the human resources and for catering to additional responsibilities in an effective

manner. This has facilitated quick response in decision making as well as grievance redressal to the satisfaction of public.

The number of assesees of property tax is 11,95,723 and profession tax is 1,23,773. Target for property tax in Greater Chennai Corporation for the year 2016-17 was fixed as 650 crore, of which property tax collection as on 31.03.2017 is ₹695.46 crore. During 2015-16 the property tax collection was ₹586.46 crore.

The capital expenditure of Greater Chennai Corporation for the year 2015-16 was ₹1,754.53 crore and for the year 2016-17 is ₹2,464.67 crore.

Revenue receipts of the Greater Chennai Corporation over the past five years are given in the table below:

Year	Revenue Receipts (₹crore)	% Increase
2012 - 13	1,591.41	28.43
2013 - 14	2,066.13	29.83
2014 - 15	2,195.90	6.28
2015 - 16	2,347.66	6.91
2016 - 17	2,742.43	16.82

### 3.1 Amma Unavagam

To benefit the poor and needy people residing in slum areas, daily-wage workers, auto drivers and elders, late Hon'ble Chief Minister of Tamil Nadu made an announcement to open "Amma Unavagam" to provide hygienic food at subsidized price. The Greater Chennai Corporation has opened 400 Amma Unavagams at different locations and 7 Amma Unavagams in Government hospitals, totalling to 407 Amma Unavagams and all are running successfully. The price list in Amma Unavagam is : one idly for ₹1.00, one plate of pongal for ₹5.00, a plate of

variety rice for ₹5.00, a plate of curd rice for ₹3.00 and in the evening 2 chapathis with dhal for ₹3.00.

So far, 41.67 crore Idlis, 15.55 crore packets of variety rice and 19.56 crore chappathis have been sold out through Amma Unavagams. Through these Amma Unavagams approximately 3.5 lakh poor people are benefitted every day. This project has been considered as the best social security programme in the world and is also considered as the driving force for future socio-economic developments especially among the people living below poverty line.

### **3.2 Amma Kudineer**

The late Honourable Chief Minister of Tamil Nadu made an announcement on 13.02.2016 to implement "Amma Kudineer Scheme". Accordingly purified drinking water through

Reverse Osmosis is being given to the needy people free of cost.

Till now, 50 drinking water dispensing machines at a cost of ₹5.30 crore were installed in the localities of low / medium income residential areas. These plants are having a production capacity of 2000 liters per hour, which can be increased based on the need of the hour.

The quality of water is being tested in approved laboratories. Under this scheme, each family is provided 20 liters of purified drinking water each day at no cost. "Smart Card" is issued to the consumer who desires to avail the benefit under the scheme. Under this scheme so far 5.37 crore liters of purified water is dispensed. On an average 13,000 families per day are being benefited.

### **3.3 National Urban Health Mission**

Under National Urban Health Mission scheme, one Urban Primary Health Centre shall be there for every 50,000 population. The Greater Chennai Corporation is already running 138 Urban Primary Health Centres and two are under construction. So far, the patients with communicable and non-communicable diseases were only treated in UPHCs. Now the other medical services like antenatal and post-natal care, child health care and basic diagnostic investigations are being done under single roof. Steps have been taken to establish 15 Urban Community Health Centres for every 2.5 lakh population so that there is a minimum of one centre per zone with 100 beds and upgraded diagnostic facilities. 14 are running successfully at present. Work is in progress in one UCHC.

Chennai City Urban Health Mission is administering this scheme and a sum of ₹181.62 crore was allotted from National Urban Health Mission to Greater Chennai Corporation for carrying out the said activities.

Further, 1,025 women groups called Mahila Arokiya Samithi are formed in slum areas to propagate awareness on Health related issues among the public.

### **3.4 AYUSH Clinics**

The Greater Chennai Corporation has opened 3 AYUSH clinics (Ayurveda, Yoga, Naturopathy, Unani, Siddha and Homeopathy) in Zone 4, 10 and 13 to provide the five alternative Indian systems of medicine. These clinics are manned by 5 doctors each from Indian alternative systems of medicine. Since March 2016, every day 200 out-patients are being benefited and upto March 2017, 2,02,800 patients have been treated in these clinics.

### **3.5 Shelter for Urban Homeless**

The Greater Chennai Corporation has established 37 shelters for urban homeless and 10 special shelters (Hospital) for in-patient attendants, which are run by Non-Governmental Organizations.

#### **3.5.1 Special Shelter (Hospital)**

As per late Honourable Chief Minister's 110 announcement, 6 special shelters at the Government Hospitals for attendants of the patients have been inaugurated by the Honourable Chief Minister on 04.03.2017 in the following hospitals:

- Rajiv Gandhi Govt Hospital – 1
- Kilpauk Hospital – 2
- Institute of Obstetrics and Gynecology – 2
- Institute of Child Health – 1



In addition, 4 special shelters-2 at Stanley Government Hospital and 2 at RSRM Hospital were inaugurated by the Hon'ble Minister on 12.04.2017 and 08.05.2017 respectively.

### **Types of Shelters**

<b>Sl. No.</b>	<b>Type of shelters</b>	<b>Total</b>
1	All groups (Men, Women and Children)	1
2	Boys	4
3	Boys & Girls	1
4	Girls	3
5	Elderly Men and Women	2
6	Men	11
7	Men and Women	1
8	Mentally challenged Men	2
9	Mentally challenged Women	1
10	Mentally challenged Boys	1
11	Differently abled women	1
12	Women	8
13	Special Shelters (Hospital)	10
14	Transgenders	1
	<b>Total</b>	<b>47</b>

Further, these shelters have benefited a total of 5,224 people and 1,152 beneficiaries are staying in these shelters presently. The Greater

Chennai Corporation has initiated action to start 23 new shelters to fulfill the requirement.

### **3.6 Public Health Control Activities:**

#### **3.6.1 Animal Birth Control Programme**

The Greater Chennai Corporation is running 3 Animal Birth Control (ABC) centers to control the stray dog population.

The stray dogs are being caught based on specific complaints from the public, sterilized and immunized against rabies and then released in the same area where they are caught, as per ABC rules.

During 2016-17, till March through these ABC centers 21,622 stray dogs have been sterilized. A total of 16 dog-catching vehicles are deployed for dog catching operations. Private dog-catchers are also engaged for catching and release.

During August 2016, as special one-time programme, immunization against rabies for 60,826 stray dogs was successfully completed.

### **3.6.2 Vector Control Activities**

As a special programme to control mosquito menace and vector-borne diseases among the residents staying near the waterways, 5.90 lakhs of mosquito nets at a cost of ₹9.97 crore and 5 lakhs nochi plants were distributed to the public free of cost.

Fogging operations are carried out with the help of 41 vehicle mounted fogging machines and 260 hand held fogging machines. In addition, 568 hand held spraying machines are used to spray larvicides in storm water drains. Gambusia fishes were introduced in water bodies to eradicate larvae breeding.

Further, a sophisticated Amphibian vehicle, which works on land and water, has been

purchased at a cost of ₹4.44 crore from Finland and this machine has been deployed in Buckingham canal and Captain Cotton Canal. So far, hyacinth has been cleared from 89,270 sq.m area and approximately, 24,732 cum of silt have been removed from Captain Cotton Canal . In the same way, hyacinth has been cleared from 14,4,000 sq.m area and approximately 29,250 cum of silt has been removed from Bucklingham Canal.

This has resulted in deepening of these water bodies and ensured free flow of water in the canals and hence, the mosquito density has been reduced in the Chennai City, especially in areas like Dr.R.K Nagar, Tondiarpet, Korrukuppet, Vysarpadi, Royapuram Mylapore. Now, for de-silting micro canals which are of narrower width, 3 Robotic Excavator Machines have been purchased at a cost of ₹19.65 crore from Switzerland. By deploying these Robotic

Excavator Machines, it is proposed to periodically de-silt and de-weed all the 30 micro canals under the control of Greater Chennai Corporation.

In addition, during the year 2016-2017, 11 Fibre boats were purchased for an amount of ₹3.19 Lakhs to spray Larvicides and for removing water Hyacinth in waterways and canals in and around Chennai City. Due to the removal of Hyacinth and accumulated garbage from the water ways, steady flow has been ensured.

Due to all of the above activities, the complaints about mosquito nuisance have drastically reduced from 9,005 in 2015 to 4,495 in the year 2016.

### **3.7 Slaughter House**

Three Slaughter houses are functioning under the direct supervision of Greater Chennai

Corporation for providing clean and wholesome meat to the Public. Veterinary Assistant Surgeons conduct Ante-Mortem and Post - Mortem inspection of animals. In addition, a new slaughter-house has been opened at Kallikuppam in Zone 7.

Effluent Treatment Plants have been installed in these slaughter houses as per the guidelines of Tamil Nadu Pollution Control Board. Two biogas plants with the capacity of 5 M.T per day are proposed to be installed at the Perambur slaughter house for the scientific and hygienic disposal of the solid waste generated at all the slaughter houses of Greater Chennai Corporation.

### **3.8 Education Department**

The Greater Chennai Corporation is running a total of 281 schools of which 119 are Primary, 92 are Middle, 38 are High and 32 are Higher Secondary Schools. Kinder Garten

sections were started in 200 Primary and Middle Schools and they are running effectively. There are a total of 88,792 children studying in Greater Chennai Corporation Schools.

Education Department of Greater Chennai Corporation has been trying to offer holistic education standards equal to private Schools to the needy children. Greater Chennai Corporation provides scholarships for the students to pursue their higher studies in all streams like engineering, medicine, arts & science, law and these scholarships are continued throughout the course period. Uniforms are distributed to students from 9<sup>th</sup> std to 12<sup>th</sup> std free of cost.

100 grams of protein rich "Sundal" is being provided to 10<sup>th</sup> std & 12<sup>th</sup> std students during the evening special classes every day so that they can study without getting tired. Exclusive Art Labs are introduced to train students in fine arts and musical instruments. Smart classrooms

are introduced at all the High and Higher secondary schools to make the learning more interesting to the students.

CCTV surveillance cameras have been established in all the Higher Secondary schools for the safety of students. The students studying in Greater Chennai Corporation schools are actively encouraged to read “Tamil and English” newspapers daily at school to improve their general knowledge. Uniforms and Note books are given to all the kinder-garten students free of cost.

Generators have been installed in all the 70 High and Higher secondary schools to ensure uninterrupted learning process. In Labs congenial atmosphere for teaching-learning process has been enabled by providing suitable equipments. Play parks are established in 30 Primary and Middle schools. For the benefit of children coming from down trodden families,



Two Amma Residential Schools are being run by Greater Chennai Corporation at, Chennai Girls Higher Secondary school, Saidapet and Chennai Higher Secondary School, Subbarayan St. Chetput and the students at these two schools have achieved 100% pass percentage.

Special Programmes like “Spark Programme for the Gifted and Talented Students,” is run to ensure that best students are trained to secure maximum marks and “Spark Programme for the Challengers” is being implemented to ensure that all the slow learners are trained to clear the Board exams to achieve 100% pass in 10<sup>th</sup> and 12<sup>th</sup> standard.

Greater Chennai Corporation School students secure high marks in +2 public exams and join various professional courses every year. In the academic year 2016-2017, more than 200 students have joined Engineering courses, 649 have joined Arts and Science, 24

have joined in Nursing institute, and 7 have joined in Law courses.

Further, the Greater Chennai Corporation Education Department runs an Industrial Training Institute in Zone-9. It has got National Council of Vocational Training (NCVT) Affiliation and runs various courses like Computer Operator and Programming Assistant, Plumber, Fitter, Mechanic Motor Vehicle, Electrician, Electronic and Mechanic. After the completion of the course the trainees are provided with job opportunities in various Industries by the Institute.

Special efforts are taken to ensure that students actively participate in sports. In this regard, annual Corporation Schools Sports Meet is conducted in a professional manner and the winners are felicitated. All these measures have resulted in Greater Chennai Corporation school students securing First place in Boxing

in under 19 Boys category, Second place in under 14 & under 19 Girls category and Third place in under 19 Girls category at the State Level Events conducted by the School Education Department and also First place in Volley Ball in under 17 Girls category at the National Level Tournament conducted by the School Games Federation of India (SGFI).

### **3.9 Parks, Playfields and OSR Lands**

#### **3.9.1 Parks**

Greater Chennai Corporation maintains 525 parks, 118 center medians, 128 traffic islands and 166 road side parks for the use of general public.

As a major policy decision, it was decided to earmark 70% of the total space of the park area for creation of green space and remaining 30% of the area for other essential components of the park. It is also envisaged to incorporate new irrigation systems like water sprinklers for

watering the green space for effective and efficient maintenance of parks.

Further, Sewage Treatment Plant (STP) has been installed in two parks in Chennai city on a pilot basis. The sewage water is tapped from the abutting main sewer line and treated using the STP and the treated water is then used for watering the green space in the parks. Thus, these STPs help in overcoming the dependency on the Ground water / Water Tanker Lorries for watering of plants.

### **3.9.2 Playfields**

Stadium department of Greater Chennai Corporation is maintaining 213 Play Grounds, 96 Modern Gyms, 5 Indoor Stadiums, 3 Swimming Pools, 7 Tennis Court and 11 Skating Rinks, which are located at various parts of Chennai City. More than 10,000 people benefit daily from these sports infrastructures, free of cost.

By utilizing these existing infrastructures, a number of local athletes and players various sports especially Football, Volley Ball, Basket Ball, Weightlifting and Bodybuilding, Volley Ball and Basket Ball have been groomed to National/ International Standard. For instance, local Basket Ball players practicing at the Basket Ball Court at Venkatnarayana Road, T. Nagar, Div.136, Zone-10 have represented the State Tamil Nadu Team at the National level, Indian Team at the South East Asian Games and Asian Games. Further, sports persons practicing Weightlifting and Body Building at the Corporation Gyms have represented Indian Team at the International level and won medals.

During the financial year 2016-17, estimate was prepared for ₹2.50 crore for up-gradation of the existing play ground at Kanigapuram in Division-72, Zone-VI and the work is in progress.

It is also proposed to upgrade the existing Hockey field at Kotturpuram, Canal Bank play ground in Div.175, Zone-13, to international standard by installing Astroturf, viewing gallery and other stadia related facilities at an approximate cost of ₹4.00 crore.

### **3.9.3 Open Space Reservation Lands**

Greater Chennai Corporation is in possession of 752 OSR Lands, which are mostly located in the extended areas. Out of these, 237 OSR Lands have been converted into parks and the, remaining OSR Lands are being converted into Parks / Playfields in a phased manner.

During the financial year 2015-16, 25 new parks and 2 playfields were proposed at an estimated cost of ₹25.82 crore in the OSR Lands, out of which 7 parks have been completed at a cost of ₹5.53 crore and rest of the works are in progress. In the financial year 2016-17, 9 new parks and 1 playfield were proposed at an

estimated cost of ₹18.63 crore in the OSR Lands and the works are in progress.

In addition to this, 8 new parks were taken up under AMRUT Scheme during the financial year 2015-16 at an estimated cost of ₹7.55 crore and for the financial year 2016-2017, 24 new parks have been proposed in the OSR Lands at an estimated cost of ₹12.92 crore and the works are in progress.

### **3.10 Chennai Mega City Development Mission**

With a view to achieve the vision of developing Chennai as a world class city with infrastructure built to international standards, the late Honourable Chief Minister of Tamilnadu announced a path breaking scheme called Chennai Mega City Development Mission (CMCDM).

Under this special scheme, the Government have sanctioned an unprecedented

amount of ₹1,488.00 crore over the last 5 years to the Greater Chennai Corporation. Under this scheme, roads to a length of 1,146.67 km, storm water drain network to a length of 170.69 km, footpaths to a length of 238.83 km and installation of 12,952 LED street lights have been completed at cost of ₹1,451.74 crore and have been put into use for the citizens. Due to effective and speedy implementation of the scheme, the long awaited aspirations of the people living in the extended areas of Greater Chennai Corporation i.e. to have infrastructure on par with the core city areas is fulfilled.

### **CHENNAI MEGA CITY DEVELOPMENT MISSION**

<b>Year</b>	<b>No.of Roads laid</b>	<b>Length (in kms)</b>	<b>Expenditure (₹ in crore)</b>	<b>Remarks Completed / progress</b>
2011-12	1367	344.53	331.06	Completed
2012-13	1932	353.67	404.74	Completed
2013-14	1215	254.8	388.05	Completed
2015-16	446	193.67	327.89	Completed
Total	4960	1146.67	1451.74	



## **3.11 Road Maintenance Programmes**

### **3.11.1 Bus Route Roads**

The Greater Chennai Corporation maintains 471 bus route roads to a length of 387 km. The up-keeping of these Bus Route Roads is normally taken up with the grants of GoTN viz., TURIF and CMCDM funds.

Under TRUIF funds, the year 2011-12, 131 roads to a length 84.76 Km have been over-laid at a cost of ₹50.15 crore and in the year 2012-13, 104 roads to a length of 64.94 Km have been over-laid at a cost of ₹43.71 crore.

Prior to the commencement of Global Investors Meet in September 2015, various new initiatives and methodologies were adopted for laying Bus Route Roads to meet the best of road laying Standards, these initiatives and methodologies are being continued as a Standard Operating Procedure now.

Reputed Project Management Consultants are engaged to monitor, execute, assure quality and to certify for the payments of all the Bus Route Road works.

All the Bus Route Roads have been milled using sophisticated milling machines to ensure that the height of the road does not increase and to ensure smooth riding surface. Three layers have been laid namely Profile Correction, Strengthening layer (Dense Bituminous Macadam) and Wearing layer (Bituminous Concrete).

All the Bus Route Roads are paved with 9 meter (30 Feet) Electronic Sensor Road Laying paving machines to give the best finish and riding quality. 5 level Quality Checks are carried out at all the roads.

All the finished roads are painted with Thermoplastic Reflective Lane Marking and Studs

for the safety of the road users and for lane discipline. All other road improvements namely providing tree grating, water-table, silt catch pit, speed breaker, signage board are taken up to give an enhanced riding performance on par with the best roads laid anywhere.

By using this type of specialized modern techniques and initiatives almost all the Bus Route Roads and 18 Small Bus Route Roads have been improved under various schemes as listed below:

<b>Scheme</b>	<b>Year</b>	<b>No. of Roads</b>	<b>Length in Km</b>	<b>Expenditure (₹ in Crore)</b>	<b>Remarks</b>
TURIP	2013-2014	42	29.35	43.78	Completed-41 In progress - 1
TURIP	2014-2015	54	46.56	88.07	Completed
CMCDM	2015-2016	198	152.56	285.19	Completed
TURIP	2015-2016	92	76.61	117.36	Completed
SDRF	2015-2016	103	40.83	55.7	Completed
TURIP	2016-2017	40	24.17	18.30	Completed-32 To be taken up-8
Total		529	370.08	608.40	

The roads thus laid were not damaged even during the unprecedented heavy rainfall and flood which the Chennai city has never experienced in the past 100 years during the North East Monsoon in the year 2015.

### **3.11.2 Interior Roads**

The Greater Chennai Corporation maintains 33,374 interior roads to a length of 5,525 km. All the works related Interior Roads being done using GCC Capital fund and the grants of GoTN under TURIF, TUFIDCO and CMCDM. The Roads taken up under various schemes are tabulated below:

#### **UPKEEPING OF INTERIOR ROADS**

<b>Scheme</b>	<b>Year</b>	<b>No.of Roads</b>	<b>Length (in kms)</b>	<b>Expenditure (₹ in crore)</b>	<b>Remarks Completed / progress</b>
CMCDM	2011-12	1,367	344.53	331.06	Completed
	2012-13	1,932	353.67	404.74	Completed
	2013-14	1,215	254.80	388.05	Completed
	2015-16	248	41.00	42.70	Completed
MIDF Phase I	2015-16	3,807	624.98	373.53	Completed

MIDF Phase II	2015-16	1,585	255.59	149.64	Completed
TURIF	2016-17	1,471	265.52	84.71	91 under progress, 123 to be taken up.
Total		1,1625	2,140.09	1,774.43	
GCC Capital Fund	2011-12	896	176.23	39.40	Completed
	2012-13	1,174	240.40	81.37	Completed
	2013-14	2,224	295.09	166.34	Completed
	2014-15	7,510	1,180.41	923.94	Completed
	2015-16	1,010	267.87	228.94	Completed
Total		12,814	2,160.00	1,439.99	
Grand Total		24,439	4,300.09	3,214.42	

### **3.12 Promotion of Non Motorised Transport**

Greater Chennai Corporation is the first Municipal Corporation in India to adopt and implement Non-Motorised Transport (NMT) Policy. In order to promote Non-Motorised Transport (NMT) to reduce pedestrian-vehicle conflict, pollution and traffic congestion, Greater Chennai Corporation has undertaken a project for widening the footpaths from 5 feet to 10 feet and improving them to International-Standards. To ensure the safety of pedestrians, especially

the vulnerable sections of the society such as elderly, women, children, students and differently-abled, the Corporation has completed footpath improvement along 49 Bus Route Roads at the cost of ₹39.50 crore in TURIF 2012-13 in the first phase, which was well appreciated by the society. In addition 7 footpath works at an estimated cost of ₹13.61 crore are taken up under TURIF 2012-13 and the works are in progress.

For the first time for the benefit of pedestrians and differently abled people with wheel chairs, the levels of foot path are kept at 15 cm high uniformly in the 49 foot path constructed under turip.

For providing obstruction-free footpath, junction boxes, transformers and other structures of utility departments have been shifted to the edge of the footpath. Granite

bollards are being fixed across the footpath to avoid parking of vehicles on the footpaths.

Since such footpaths ensure safe passage for the travelers, there has been a very positive response to these works from the public. The Disability Rights Alliance (DRA) Group verified these footpaths and they complimented and welcomed this initiative of GCC.

Greater Chennai Corporation has received 5 National level awards and one International award for this project.

The Institute for Transportation and Development Policy (ITDP) has given a street design for various types of roads with provision of differently-abled friendly footpaths maintaining a uniform carriage width of 3.75 m for each lane to maintain the straightness of the road with varying footpath size which will have provision for parking bays wherever the

additional spaces are available. It is being adopted in bus route roads.

### **3.13. Marina Beautification Project**

As part of overall comprehensive re-development of Marina beach, it was proposed to reconstruct the existing compound wall on the western side corridor of Kamarajar Salai. The existing damaged and buried pillars are being relocated and new pillars are being laid wherever necessary, so that it gives a timeless elegance. Ornamental non-corrosive cast iron grill work between the pillars is also being provided. The existing footpath abutting the compound wall is also being re-laid. The total cost of the project is ₹33.10 crore. So far, 96% of the work has been completed and the work is scheduled to be finished by June 2017.



### **3.14 Special Projects**

#### **3.14.1. Smart City**

Chennai City is one of the 20 “SMART CITIES” selected by the Ministry of Urban Development, Government of India. The “Chennai Smart City Limited ” is a Special Purpose Vehicle formed as a public limited company with Government of Tamil Nadu and The Greater Chennai Corporation jointly having 50:50 share for the effective implementation of the Smart City project.

Chennai’s Smart City vision aims to transform the city into a resilient world-class commercial city, that is economically vibrant, ecologically sustainable and inclusive. The proposal aims to improve urban mobility by providing various transport choices by Multi-Model integration of rail, high quality buses, improved infrastructure for walking and cycling, as well as uniform carriageways for

personal transport. Improved solid waste and storm water management, rain-water harvesting as well as continuous water supply are some of the other initiatives proposed.

The Smart City solutions will be carried out in 5 years period (2015-20) with the contribution of ₹500.00 crore each from the State and Central Government.

Thyagaraya Nagar has been selected under Area-Based Development (ABD) based on the citizen's voting. ABD area project will have 40 components under the following 10 heads at a cost of ₹877.92 crore.

1. Pedestrian Friendly Pathways & Non-Motorised Transport
2. Intelligent Traffic Management System
3. Retrofitting of Green Open Spaces
4. Storm Water Drainage and Rain water harvesting

5. Solid Waste Management
6. IT Connectivity and Digitization
7. Sanitation
8. Uninterrupted Water Supply
9. Sewerage
10. Electrical Grid Management and Rooftop Solar Power Generation

Further, under the Pan City initiative 8 components under the following two heads at a cost of ₹488.32 crore will be taken up.

1. Information and Communications Technology (ICT) for Non Motorized Transport
2. Information and Communications Technology (ICT) Water & Disaster Management

The tentative total project cost of Chennai Smart City including ABD area & Pan City proposal is ₹1366.24 crore.

The Programme Management Consultant has been appointed on contract basis with the following 5 experts for monitoring the implementation of Smart City Projects:

1. Urban Management Expert and Team Leader
2. Urban Infrastructure Expert on Water and Sewerage
3. Transportation Specialist
4. Public Private Partnership and Procurement Contract Expert
5. Finance Management Expert

### **3.14.2 Atal Mission for Rejuvenation and Urban Transformation (AMRUT)**

One of the main aims of Atal Mission for Rejuvenation and Urban Transformation (AMRUT) scheme is to increase the amenity value of cities by developing green spaces and well maintained open spaces (e.g.parks) with special provision for child - friendly components.

In this scheme which envisages financial assistance both from the state government and the Government of India, 8 new parks were taken up during 2015-16 and 4 Park works have been completed and other 4 parks are likely to be completed by July 2017.

### **3.15 Bridges**

In order to ensure hassle free movement of traffic, the Greater Chennai Corporation maintains Bridges, Culverts, Foot Bridges and Causeways across major Rivers and Canals, Rail Over Bridges across Railway Crossings and Flyovers across road intersections in a total of 272 locations. In addition, Greater Chennai Corporation also maintains 16 Subways at Railway Crossings and 6 Pedestrian Subways at important Bus Route Roads. During the last 5 years, Greater Chennai Corporation has completed construction of 5 flyovers/over

bridges, 10 minor bridges, 3 subways and taken up improvements to the existing flyover/bridges in various locations at an estimated cost of ₹114.95 crore. This includes the construction of Rail over-bridge(ROB) at Kathivakkam High road – Cochrane Basin road which was completed at an estimated cost of ₹16.66 crore, inaugurated and declared open for the public use by the late Honourable Chief Minister of Tamil Nadu on 28.02.2016. This ROB benefits 5 lakh people in and around Korukkupet area. Further, construction of 6 minor bridges and renovation of 15 bridges at an estimated cost of ₹21.20 crore were completed.

During the current year 2016-17, 27 works at an estimated cost of ₹130.93 Crore were taken up. Out of these, 17 works have been completed. Construction of 5 Box Culverts, improvement works for 2 Subways and improvements to 2 Foot Bridges are in progress.

Construction of an integrated ROB in lieu of existing LC No-2A at Ennore High Road and LC No-2B at Manali Road in R.K. Nagar Assembly Constituency, which was announced under 110 announcement by the late Honourable Chief Minister, has also been taken up at an estimated cost of ₹117.47 Crore and the work is in progress.

### **3.16 Street Lights**

The Greater Chennai Corporation is maintaining 2,77,902 street lights. Out of these 1,74,784 are energy saving LED street lights, 79,255 are sodium vapour lamps and others are 23,863 (CFL, Metal Halide lamps, Induction lamps.) The sodium vapour lamps will be replaced with energy saving LED fitting in a phased manner. In order to ensure safety of women, elderly persons and other road users, uniform street lighting is being provided in all Interior Roads and Bus Route Roads of Greater

Chennai Corporation. With the objective of providing uniform street lighting with fitting that save energy, LED street lights fittings are being provided throughout the city. LED street light fittings consume 45% lesser power than Sodium Vapour Lamps and Metal Halide street light fittings. The project of providing 1,10,000 energy saving LED street light fittings at a total cost of ₹322.00 crore for the newly added areas is completed. Greater Chennai Corporation is one of the few corporations that have provided energy saving LED street light fittings in large numbers.

Greater Chennai Corporation was paying nearly ₹6.00 Crore to TANGEDCO every month current consumption charges for street lights. After conversion to LED street lights, the monthly current consumption charges have reduced to ₹4.50 cores. Hence, ₹1.50 crore is saved per month and this resulted in a total



savings of ₹18.00 crore per year towards the current consumption charges for street lights.

### **3.17 Storm Water Drains**

In order to prevent flooding in the City, Greater Chennai Corporation maintains the Storm Water Drain Network to a total length of 1,894 km comprising of 7,351 No.s Storm Water Drain Structures. Besides this, the Greater Chennai Corporation also maintains 30 canals for a total length of 48.80 km which include Kodungaiyur Canal (5.28 kms), Captain Cotton Canal (3.04 kms), Padikuppam Canal (2.78 kms).

In the last 5 years, a length of 355 kms of storm water drain networks has been additionally constructed in the core Chennai city at a cost of ₹640.00 crore under JnNURM Scheme. With this, the number of flood prone areas in the Greater Chennai Corporation has

reduced to less than 50 Nos from about 300 No.s earlier.

In accordance with the policy of Greater Chennai Corporation to provide infrastructure facilities to the extended areas on par with the core Chennai City for avoiding water inundation by safe disposal of rainwater, integrating the available tanks and lakes for disposal of the rainwater, rainwater harvesting and recharging of ground water and improvement in overall hygiene for sound health, the Greater Chennai Corporation has prepared a Detailed Project Report for Kosasthalaiyaru, Coovum, Adayar and Kovalam basin for the length of 1,069.40 kms of Integrated Storm Water Drain network at a project cost of ₹4,034.30 crore.

In the first phase, storm water drain works for a length 326 kms in the Coovum and Adayar situated in Zone-7,11& 12 of Greater Chennai Corporation at a project cost of ₹1,101.43 crore

are in progress with World Bank funding, under Tamil Nadu Sustainable Urban Infrastructure Development Project (TNSUDP). So far, works to a length of 215 km have been completed. Balance works are in progress.

Further, with the help of German Development Bank (KfW) implementation of Intergrated Storm Water Drains (ISWD) project for Kovalam Basin has been taken up in three components (M1,M2,M3) to a length of 360 kms at a project cost of ₹1,243.45 crore. The KfW has taken action to appoint consultants to revise the DPRs for M1 and M2 components. M/s Kocks Consultants appointed by Kfw has prepared revised DPR for the M3 component.

As far as the ISWD project for Kosasthalaiyar Basin is concerned, the Japan International Co-operation Agency (JICA) has been identified as the funding agency to implement this project at a project cost of

₹1,881.66 crore to a length of 429 kms. Tamil Nadu Urban Infrastructure Financial Services Limited has submitted the Inception Report and it is in the process of finalisation of the revised Detailed Project Report.

### **3.18 Solid Waste Management**

The generation of Municipal Solid Waste in Chennai city has increased to 5,400 metric tons per day. At present, the primary collection consisting of door to door collection and it is, carried out using 5,422 tricycles of Greater Chennai Corporation. The secondary collection of solid waste is carried out by deploying 369 HMV / LMV compactors, 36 Haulage Tipper Trucks, 157 Tipper Lorries, 12 Mechanical Sweepers, 57 Skid Steer Loaders and 24 Front end Loaders.

For solid waste removal purpose, from 2011-12 to 2015-16, 295 types of different vehicles like HMV/LMV Compactors, Tippers,

Mechanical Sweepers, Skid Steer Loaders, Front End Loaders, Hydraulic Excavators and Bulldozers have been purchased at a total amount of ₹62.25 crore under Chennai Mega City Development Fund and Capital fund of Greater Chennai Corporation. 7,600 compactor bins have also been purchased at a total amount of ₹13.26 crore.

Further, in the financial year 2016-17, 1,684 Compactors Bins at a cost of ₹3.31 crore, 500 Tricycles at a cost of ₹90.00 Lakh, 15,000 Tricycle Bins at cost of ₹1.59 crore and 2,000 Roto Mould Bins at cost of ₹43.40 lakh have been procured.

Out of 15 zones of Greater Chennai Corporation, 9 Lorry operating depots are in existence. In addition, two lorry operation depots at Manali and Sholiganallur have been completed at a cost of ₹7.59 crore. In addition, construction of three Lorry operation depots at

Madanakuppam for Zone 3 and Zone 7 and one lorry operation depot for Zone 1 at Thiruvottriyur at a total cost of ₹15.89 crore are under progress.

The Corporation deploys approximately 19,362 conservancy workers including the workers of privatized zones. The attendance of conservancy workers is monitored through Bio-Metric system in all the zones. A detailed route chart for compactor vehicles and tricycles has been drawn up to effectively the supervise solid waste management activities.

In order to ensure safe working conditions for the sanitary workers, they have been provided with masks, gloves and reflective apron for night conservancy work.

Further, in each zone designated locations for collection of Construction and Demolition (C & D) waste have been earmarked and the

details are published in English and Tamil dailies to facilitate the general public to deposit the C & D waste at the above locations. This is aimed at preventing haphazard dumping on the roads, streets and near the banks of water bodies.

Further, a consultant has been appointed for preparation of Detailed Feasibility Report (DFR) for projects like privatization of conservancy operations in 8 zones of newly added extended area, for integrated solid waste processing, construction and demolition waste processing with scientific land filling at the existing dump yards of Kodungaiyur and Perungudi and also remediation of the said dump yards. The consultant has submitted the draft Detailed Feasibility Report (DFR) and the same is under study.

### 3.19 Swachh Bharath Mission

Greater Chennai Corporation has been planning to make entire city, comprising 200 wards, Open Defecation Free. Plan of action is that, 30 wards will be made open defecation free during the year 2016-17, 70 wards during 2017-18 and 100 wards during 2018-19. So far, 46 wards have been declared Open Defecation Free.

To achieve the above target, construction of community toilets and individual house hold latrines have been taken up and the progress is as below:

<b>Scheme</b>	<b>Year</b>	<b>Target</b>	<b>Achieved</b>	<b>Expenditure (₹ in Crore)</b>
Community Toilet (seats)	Mission period (2014-15 to 2018 -19)	1575	913	13.60
Individual House Hold Latrines	Mission period (2014-15 to 2018 -19)	7069	4171	2.79



### **3.20 Vardah Cyclone – 2016**

The Vardah Cyclonic Storm which made landfall on 12.12.2016 with a wind speed of 120-130kmph, created a sea of devastation. 17,157 trees were uprooted on the roads and 1,478 trees were uprooted in 304 parks. 558 Bus Route Roads were blocked due to tree fall. 6,133 street lamp poles were damaged along with 2,226 street lamp fittings. All the fallen trees were immediately removed and street lights were expeditiously restored for the benefit of public.

The Government have sanctioned a sum of ₹75.00 crore for the temporary restoration of damages from State Disaster Response Fund.

Tenders have been floated for ₹44.09 crore towards repair to the roads, parks, buildings and SWD and tenders have been settled on 09.03.2017 for the same and the works are in progress. Also, for the restoration of Bus Route

Roads, footpath and bus shelters, tenders have been setteled for ₹8.64 crore and works are in progress for temporary restoration of lamp post and fittings tenders have been floated at an estimated cost of ₹10.92 crore and same was settled on 06.03.2017 and the works are in progress. A sum of ₹26.39 crore has been spent towards relief and restoration till date.

To replenish the lost green cover, a high level expert committee meeting was held under the chairmanship of GCC Commissioner on 31.12.2016, 09.01.2017 and again on 07.02.2017. This was attended by Landscape Architects, Urban planners, Horticulture and Forest Department officials and along with Non-Governmental Organizations. As part of plantation strategy, a consultant appointed by Chennai River Restoration Trust (CRRT) is preparing DPR. The DPR would suggest scientific approach for plantation and maintenance of trees.

For plantation of new trees in places of the fallenones, GCC roped in private sponsors like MNC's, NGO's voluntary organization, corporate and colony welfare associations.

As of now 40% to 45% of works have been completed and remaining are in progress and all the works are scheduled to be completed by July 2017.

## 4. Directorate of Town Panchayats

Town Panchayats are small units in the third tier urban administration with a mixed character of village and Town. It is striving to provide better civic amenities, development of infrastructure facilities and promotion of employment opportunities so as to keep pace with fast urbanization of Tamil Nadu.

### 4.1 Administrative Setup

Town Panchayats are governed by the Tamil Nadu District Municipalities Act, 1920. There are 528 Town Panchayats in the State of Tamil Nadu.

Sl. No	Grade	Annual Income (₹ in Lakh)	No. of Town Panchayats
1.	Special Grade	Exceeding ₹200.00 lakh	64
2.	Selection Grade	Exceeding ₹100.00 lakh but not exceeding ₹200.00 lakh	202
3.	Grade- I	Exceeding ₹50.00 lakh but not exceeding ₹100.00 lakh	200
4.	Grade-II	Not exceeding ₹50.00 lakh	62
		Total	528

The Director of Town Panchayats is the Head of the Department. There are 17 zones and each zone is headed by an Assistant Director. The Collector of the respective District is entrusted with the task of supervising the affairs of the Town Panchayats. Many Town Panchayats are endowed with tourist spots, pilgrimage centers and heritage monuments .

#### **4.2 Functions and Core Services**

Town Panchayats play a very important role in providing civic amenities to the public, such as drinking water, street lights, sanitation, solid waste management, road connectivity, drains and pavements, burial grounds, water bodies and slaughter houses. Further, the Town Panchayat construct and maintain bus stands, community halls and markets. Town Panchayat issues the Birth and Death Certificates and Trade licenses.

Town Panchayats levy and collect taxes and non tax charges such as Property tax, profession tax and fees for issue of approval of building plans .

### **4.3 Infrastructure Development**

Mobility of Villagers from the rural areas in search of employment, education, better health and quality of life results in growth of urban population. This necessitates the provision of better basic amenities such as water supply, solid waste management, underground sewerage schemes, roads, street lights, crematoria, slaughter houses, parks and playfields, to cater the needs in Town Panchayats. Apart from encouraging the urban local bodies to improve their existing own resource base, the state government, in addition, is transferring SFC devolution funds and supporting creation of urban infrastructure projects through its flagship mission mode

programmes viz Integrated Urban Development Mission (IUDM) and NABARD Loan assistance.

#### **4.4 Integrated Urban Development Mission (IUDM)**

The Hon'ble Chief Minister of Tamilnadu had inaugurated the Flagship Scheme of IUDM during the year 2011 to cater to the infrastructure needs of the Urban Local Bodies.

All type of infrastructure works required for the Town Panchayats are implemented through Integrated Urban Development Mission. A sum of ₹1309.88 crore was provided to the Town Panchayats for taking up the necessary various infrastructure works during the years 2011-2012 to 2016-2017 covering UGSS, Water Supply Improvement, Road improvement and Storm Water Drain works under the above programme as follows:

Year	No of Works			Amount Sanctioned (₹ in crore)
	Taken up	Completed	Under progress	
2011-12	5275	5275	0	250.00
2012-13	569	552	17	248.04
2013-14	1043	905	138	284.96
2014-15	235	211	24	116.66
2015-16	27	0	27	199.88
2016-17	25	0	25	210.34
Total	7174	6943	231	1309.88

#### 4.5 Water Supply

The Government is firmly committed to provide the minimum 70 LPCD of protected drinking water supply to the people in all the Town Panchayats. There are 48 stand alone water supply schemes maintained by Town Panchayats. The TWAD Board maintains the combined water supply schemes in Town Panchayats. All the 528 Town Panchayats are supplying drinking water at the rate of 70 LPCD on a daily basis. The details of Water Supply levels in the Town Panchayats inclusive of the year wise additional capacity provided to tide over the situations is given below:



<b>Sl. No</b>	<b>Year</b>	<b>No of Town Panchayats</b>	<b>Demand (in MLD)</b>	<b>Supply (in MLD)</b>	<b>Additional capacity (in MLD)</b>
1	2	3	4	5	6
1	2011-12	529	564	568.97	4.97
2	2012-13	529	572	589.20	17.20
3	2013-14	528	577	610.70	33.70
4	2014-15	528	585	689.25	104.25
5	2015-16	528	593	776.23	183.23
6	2016-17	528	602	686.00	84.00

From the year 2011-12 onwards water supply schemes were taken up under various schemes namely, Integrated Urban Development Mission, Infrastructure gap Filling Fund, Operation and Maintenance Gap Filling Fund, Part-II Scheme and Drought relief works and the General funds of Town Panchayats. So far, 5,332 works were taken up and 5,295 works had been completed. The remaining 37 works are under progress in various stages and are executed by the TWAD board. Totally 686.00 MLD water is supplied to 528 Town Panchayats on a daily basis without any interruption what so ever.

Due to the shortfall of rainfall in the South West and North East monsoons, the regular quantities of water supply received from CWSS and other local sources have been considerably reduced.

Inadequate rainfall during the North East monsoon in 2016 and subsequent poor rain fall caused drought throughout the State. In order to tide over the water scarcity problems, 3,595 water supply improvement works have been taken up under SDRF and General fund at an estimated cost of ₹46.41 crore. Out of these 3,149 works have been completed so far and 446 works are in progress.

#### **4.6 Sanitation**

In 528 Town Panchayats, sanitation is maintained effectively by means of two modes. One is network system i.e., underground sewerage system, and the other being

non-network system i.e., Septage management system.

#### **4.6.1 Under Ground Sewerage System (UGSS)**

Provision of underground sewerage system is indispensable for upkeep of sanitation and protection of environment in the Town Panchayats thereby ensuring safe sanitation to the residents. Hence, the Under Ground Sewerage Schemes are taken up in the Town Panchayats in a phased manner by availing financial assistance from various sources such as Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) and Integrated Urban Development Mission (IUDM). UGSS have been taken up in 7 Town Panchayats viz. Mamallapuram, Thiruchendur, Thiru mazhisai, Orathanadu, Palanichettipatti, Ulundurpettai and Sriperumbudur at an outlay of ₹219.86 crore, out of which UGSS in 3 Town Panchayats viz., Mamallapuram, Orathanadu and

Thiruchendur have been completed for the remaining 4 Town Panchayats namely Thirumazhisai, Sriperumbudur, Ulundurpettai and Palanichettipatti, the UGSS scheme works are in progress.

A sum of ₹33.51 crore has been sanctioned to implement the UGSS in Velankanni Town Panchayat under AMRUT scheme and the work is under progress. In addition, Conventional UGSS have been taken up in 7 Town Panchayats viz., Thiruporur, Ponneri, Perundurai, Manachanallur, Ayakudi, Vallam, and Kanyakumari at a cost of ₹280.53 crore and they are implemented through TWAD Board.

#### **4.6.2 Septage Management**

Septage means Partially treated sewage that is stored in a septic tank. It includes liquids, solids (sludge), as well as fats, oils and grease (scum) that accumulate in septic tanks overtime. Septage management includes the

process of design, collection, safe treatment & disposal of septage. A comprehensive programme that regulates periodic septic tank cleaning, as well as septage transport, treatment, re-use and scientific disposal is indispensable for septage management.

It is proposed to take up Septage Management in 18 Town Panchayats Viz., Alwarthirunagari, Chengam, Alangayam, Pennagaram, Kaveripattinam, Jalagandapuram, Alampalayam, Kunnathur, Needamangalam, Kurumbalur, Paravai, Mudhukulathur, Sethur, Sambavarvadakarai, Pennadam, TNPL Pugalur, Karunkuzhi and Mamallapuram (Extended area).

Karunkuzhi Town Panchayat in Kancheepuram District has been taken up as a Pilot Town Panchayat to implement Septage Management by using advanced treatment technology at a sanctioned cost of ₹4.93 crore. The work is completed and under trial run.

Based on the outcome of the above pilot scheme, suitable decision will be taken for the implementation of the scheme in a phased manner in other Town Panchayats.

In addition, Feacal Sludge Treatment Plant (FSTP) has been taken up at an estimated cost of ₹3.51 crore in Periyanaickenpalayam Town Panchayat in Coimbatore District with the aid of Bill & Melinda Gates foundation (BMGF).

After completion and utilization of the scheme, it will be extended to Narasimmanaickenpalaiyam Town Panchayat in Coimbatore District.

#### **4.6.3 Eradication of Open defecation**

The Government is determined to make Tamil Nadu an Open Defecation Free State. Public hygiene, sanitation and human dignity are affected by the open defecation. To achieve this objective, Town Panchayats have undertaken a

massive programme of construction of community toilets, repairs to existing toilets, and an effective IEC campaign has been conducted. During the survey conducted by Town Panchayats open defecation has been noticed at 1095 locations.

The details of works taken up in the above places under various schemes are as follows:

Sl. No.	Year	Scheme	Const. of New Toilets	Renovation of Toilets	Project Cost (₹ crore)
1	2011-12	Open defecation free toilet scheme	52	75	5.53
2	2011-12	IUDM	80	-	6.04
3	2012-13	Open defecation free toilet scheme	160	221	22.60
4	2012-13	NABARD (RIDF) Scheme	376	-	45.20
5	2013-14	Open defecation free toilet scheme	174	-	22.60
6	2013-14	Government funds	77	-	10.00
7	2013-14	General fund		401	8.01
8	2014-15	Open defecation free toilet scheme	183	-	22.60
9	2015-16	Swachh Bharat Mission Construction of Community Toilet	432 ( 2,619 seats)	-	17.02

Sl. No.	Year	Scheme	Const. of New Toilets	Renovation of Toilets	Project Cost (₹ crore)
10	2016-17	Swachh Bharat Mission Construction of Community Toilet	320 (2,620 seats)	-	17.03
Total			1,854	697	176.63

Out of these, 1534 new community toilets have been constructed and 697 toilets have been renovated and put into use. Out of 1095 identified Open defecation places, 960 places are now totally free from open defecation due to construction of the community toilets.

Construction of 3,60,577 Individual House Hold Latrines, conversion of 7794 numbers of insanitary Latrines into sanitary Latrines and construction of Community Toilet with 28,868 seats are fixed as a mission target for Town Panchayat with the Government of Tamil Nadu grant dovetailing with Swachh Bharath Mission as tabulated below:



Sl.No	Name of the Work	Cumulative Target	Target (Year Wise)			Total Target	Completed	Balance
			2014-15	2015-16	2016-17			
1	Individual HouseHold Latrines	360577	-	54100	125000	179100	93819	85281
2	Conversion of Insanitary Latrines to sanitary Latrines	7794	-	7794	-	7794	7460	334
3	Community Toilet	28868	2704	2619	2620	7943	6180	1763

The following 21 Town Panchayats have been declared in the 1<sup>st</sup> phase as Open Defecation Free towns by the Ministry of Urban Development.

Sl.No	District	Town Panchayat
1	Kanyakumari	Alur
2		Arumanai
3		Edaicode
4		Karungal
5		Killiyur
6		Kulasekaram
7		Kumarapuram
8		Mailadi
9		Mulakumodu
10		Nallur

11		Palapallam
12		Palukal
13		Ponmanai
14		Puthukkadai
15		Suchindrum
16		Thingalnagar
17		Thiruvithankodu
18		Valvachgostam
19		Verkilambi
20		Villukuri
21	Theni	Highways

Further, action is being taken to declare the remaining Town Panchayats as open defecation free Towns. Action plan for implementation is tabulated below:

<b>Year</b>	<b>No. of Town Panchayats Proposed to be achieved</b>
March 2017	50
September 2017	50
December 2017	50
March 2018	50
September 2018	70
December 2018	75
March 2019	75
July 2019	87
Total	507

## 4.7 Roads

Various types of roads are being maintained by Town Panchayats. The total length of the road is as follows:

Sl. No.	Type	Length (Km)
1	BT Roads	11223
2	CC roads	5349
3	Paver Block	1253
4	WBM Roads	966
5	Gravel Roads	395
6	Earthen roads	1862
Total		21048

During the years 2011-2012 to 2016-17 improvements of roads have been taken up under various schemes as detailed below:

Sl No.	Year	Total length (in Km)	Amount (₹ in crore)	Total No. of Roads	Completed	Under Progress
1	2011-12	1,561	285.56	1,908	1,908	
2	2012-13	1,166	334.40	1,022	1,022	
3	2013-14	808	248.29	768	768	
4	2014-15	743	231.02	694	694	
5	2015-16	699	278.18	713	713	
6	2016-17	600	269.00	323	143	180
Total		5,577	1,646.45	5,428	5,248	180

Out of 5,428 road works, 5,248 works have been completed and put into use by the public. Remaining 180 works are under progress at various stages. Totally 5,577 Km of roads have been upgraded as BT, CC, and paver block road.

#### **4.7.1 NABARD - RIDF – Rural Infrastructure Development Fund**

During the years 2011-2012 to 2016-17, ₹761.51 crore was allocated for 2459 works, such as Improvement of Road, Construction of Bridge, Storm Water Drain, Construction of Sanitary complex, improvement of water bodies and Construction of Slaughter house under this scheme as follows:

<b>SI No</b>	<b>Year</b>	<b>No. of works</b>	<b>Amount (₹crore)</b>	<b>Remarks</b>
1	2011-12	419	97.90	All the works completed
2	2012-13	975	200.14	All the works completed
3	2013-14	381	118.40	All the works completed
4	2014-15	301	115.07	All the works completed.
5	2015-16	232	100.00	231 works completed. 1 work under progress

6	2016-17	151	130.00	149 works are under progress. Re-tender called for 2 works
Total		2459	761.51	

#### 4.7.2 Tamil Nadu Urban Road Infrastructure Project (TURIP)

Tamil Nadu Urban Roads Improvement Project is being implemented since 2011-12 with a view to upgrade the urban roads in the State to the International standards. Besides improving all roads in Town Panchayats, roads have been provided with pavements and storm water drains under this scheme.

During the period, from 2011-12 to 2016-17, 1562 Nos. of roads to a length of 1,438.86 Km were taken up at a cost of ₹391.91 crore.

SI No	Year	Length (in Km)	Amount (₹ crore)	No. of Roads	completed	Balance
1	2011-12	247.00	50.57	440	440	
2	2012-13	222.00	50.00	191	191	
3	2013-14	159.00	50.57	147	147	
4	2014-15	198.00	81.76	228	228	
5	2015-16	328.11	81.76	384	384	
6	2016-17	284.75	77.25	172	143	29
Total		1,438.86	391.91	1,562	1,533	29

So far, 1,533 works have been completed. The balance 29 works are in progress.

#### **4.7.3 Plastic Roads**

Plastic waste and other type of plastic packing material material forms almost 5% of Solid waste and creates stagnation of water and associated hygiene problems. In order to curtail this problem, Plastic waste has been used in laying of Roads.

From the year 2011-2012 onwards, Plastic road scheme is implemented with General fund work and other road schemes namely Environmental Protection and Renewable Energy Development Fund, Integrated Urban Development Mission, Tamil Nadu Urban Roads Infrastructure Improvement Scheme and other schemes. So far, 1,392 plastic roads have been laid by utilizing 1,173.10 MT of plastic waste to a length of 1,236.42 Kms at an expenditure of ₹460.40 crore. From the year 2011 onwards,

₹3.11 crore has been earned by Town Panchayats by means of sale of collected plastic wastes.

Provision has invariably been made in all the road estimates taken up under all the schemes (except NABARD) for addition of 10% plastic for Bituminous Concrete (B.C) this would lead to reducing the plastic quantity and upgrading the environment cleanliness and eco friendly nature of the towns.

#### **4.8 Solid Waste Management**

Effective Solid Waste Management improves environment and hygiene. Every Person in the Urban Local body generates approximately 250 to 300 gms of solid waste per day. 2,100 MT garbage is generated per day in all 528 Town Panchayats of which the organic waste constitutes 966 MT, in-organic waste 747 MT and the remaining 387 MT as silt waste. The physical composition of the garbage in various

Town Panchayats has been analyzed and the ranges are tabulated below:

Sl.No.	Type of Waste	Percentage in garbage
1	Biodegradable	47-60
2	Plastics	4 - 8
3	Paper	2 - 5
4	Rubber	1 - 2
5	Glass	1 - 3
6	Silt	15 - 20
7	Metal	2 - 3
8	Cloth	3 - 5

10,049 SHG members are involved in both collection and segregation of waste and 6,686 sweepers are deployed in street sweeping/collection of solid waste for effective implementation of the solid waste management in the Town Panchayats.

#### **4.8.1 Bio/Vermi Composting**

At present, bio-composting is successfully done in 466 Town Panchayats. Every day, 100.17 M.T of bio compost is produced by the Town Panchayats. A sum of ₹39.42 lakh is earned by the Town Panchayats every month by sale of bio-compost. Totally, 1,184 M.T of



bio-compost stock is available in the Town Panchayats.

Vermi composting is also done successfully in 188 Town Panchayats. Every day 16.21 M.T of vermi compost is produced by the Town Panchayats. A sum of ₹10.29 lakh is earned by Town Panchayats every month by sale of vermi compost. Totally 240.00 M.T of vermi compost stock is available in the Town Panchayats.

Action is being taken by the Executive Officers of Town Panchayats to coordinate with the Agriculture Department for sale of the Bio/Vermi compost to the farmers through identified agencies.

#### **4.8.2 Integrated Solid Waste Management Scheme**

From the year 2013-14 to 2015-16, 395 Town Panchayats had taken up Integrated solid waste management projects involving door to door collection, transportation, segregation, composting at resource recovery parks and Information Education and Communication

activities and the status of the projects is tabulated below:

Sl. No	Year	No. of Town Panchayats sanctioned	Project Cost (in Crore)	No. of Town Panchayats completed	No. of Town Panchayats in progress
1	2013-14	77	48.57	76	1
2	2014-15	214	54.57	209	5
3	2015-16	104	53.75	5	99
	<b>Total</b>	<b>395</b>	<b>156.89</b>	<b>290</b>	<b>105</b>

### 4.8.3 Bio methanation

Under Swachh Bharat Mission construction of bio methanation plants has been taken up in following 5 Town Panchayats viz., Sholingur, Chengam, Periyanaickenpalaiyam, Vathalakundu and Uthamapalaiyam at a total estimated cost of ₹1.00 crore (₹20.00 lakh each) for conversion of the food waste and vegetable waste into bio gas.

<b>Sl. No</b>	<b>District / Town Panchayat</b>	<b>Actual Input /day</b>	<b>Actual output /day</b>	<b>Utilization of Biogas</b>
1	Theni District/ Uthamapalayam Town Panchayat Input – 1MT Output – 120 m <sup>3</sup> Biogas	400-550 Kg food and vegetable waste	50-55 m <sup>3</sup> Biogas Generated	Used for nearby Anganwadi centre & common kitchen
2	Coimbatore District/ Periyanaicken Palayam Town Panchayat Input – 1MT Output – 120 m <sup>3</sup> Biogas	1000Kg food and vegetable waste	50-55 m <sup>3</sup> Biogas Generated	Proposed to be used for lighting situated in the Crematorium premises. Under trial run.
3	Dindigul District/ Vathalagundu Town Panchayat Input – 1MT Output – 120 m <sup>3</sup> Biogas	700- 1100 Kg food and vegetable waste	100-120 m <sup>3</sup> Biogas Generated	Used for nearby community kitchen
4	Vellore District/ Sholinghur Town Panchayat Input – 2MT Output – 120 m <sup>3</sup> Biogas	Under Trial		
5	Thiruvannamalai District/ Chengam Town Panchayat Input – 1MT Output – 120 m <sup>3</sup> Biogas	Under Trial		

In addition to this, 11 Town Panchayats have taken up & completed micro level bio- gas plants and the usage is tabulated as below:

<b>S.No.</b>	<b>District / Town Panchayat</b>	<b>Actual Input /day</b>	<b>Actual output /day</b>	<b>Utilization of Biogas</b>
1	Kancheepuram District/ Mamallapuram Town Panchayat	0.500 MT of food waste	10 KW generated	Utilized for lightings in Resource Recovery Park.
2	Dharmapuri District / Papparapatti Town Panchayat	0.005 MT of food waste	400 grams of Bio gas	Used for cooking purpose by the SHG members
3	Salem District / Kannakurichi Town Panchayat	0.005 MT of food waste	400 grams of Bio gas	Used for cooking purpose by the SHG members
4	Trichy District / Musiri Town Panchayat	0.100 MT of toilet waste	700 grams of Bio gas	Used for cooking purpose by the SHG members
5	Karur District / Puliur Town Panchayat	0.005 MT of food waste	400 grams of Bio gas	Used for cooking purpose by the SHG members
6	Karur District / PUNCHAI Thottakurichi Town Panchayat	0.005 MT of food waste	400 grams of Bio gas	Used for cooking purpose by the SHG members
7	Madurai District / Sholavanthan Town Panchayat	0.005 MT of Vegetable Waste & Toilet Waste	400 grams of Bio gas	Used for cooking purpose in Community Hall Kitchen

<b>S.No.</b>	<b>District / Town Panchayat</b>	<b>Actual Input /day</b>	<b>Actual output /day</b>	<b>Utilization of Biogas</b>
8	Theni District / Uthamapalayam Town Panchayat	0.005 MT of food waste	400 grams of Bio gas	Used for cooking purpose by the SHG members
9	Tiruchirappalli District/ Sirugamani Town Panchayat	0.005 MT of food waste	400 grams of Bio gas	Used for cooking purpose by the SHG members
10	Karur District/ Punjaipugalur Town Panchayat	0.005 MT of food waste	400 grams of Bio gas	Used for cooking purpose by the SHG members
11	Dindigul District/ Chinnalapatti Town Panchayat	0.005 MT of food waste	400 grams of Bio gas	Used for cooking purpose by the SHG members

#### **4.9 Infrastructure Gap Filling Fund**

To bridge the gap, in providing Infrastructure facilities in Town Panchayats the financial allocation has been made under Infrastructure Gap Filling Fund.

During the years 2011-12 to 2016-17, a sum of ₹327.30 crore has been allocated for 805 works such as construction of office building, water supply works, Solid Waste Management,

Storm Water Drain, Slaughter House, Crematorium, Community hall, Bus stand, Burial ground Improvement and ULB Contribution to the water supply / UGS scheme under this scheme as follows:

<b>Year</b>	<b>No. of works</b>	<b>Amount (₹crore)</b>	<b>Remarks</b>
2011-12	155	20.99	All the work completed
2012-13	94	25.62	
2013-14	185	69.45	184 work completed and remaining 1 work (Vellalore Bus stand) under progress.
2014-15	230	85.38	229 work completed and the remaining 1 work are under progress
2015-16	58	65.44	52 work completed and the remaining 6 works are under progress.
2016-17	83	60.42	22 work completed and the remaining 61 works are under progress
Total	805	327.30	

#### **4.10 Operation and Maintenance Gap Filling Fund**

Financial allocation is made from out of the Devolution Grant to bridge the gap under the O & M funds by way of providing Infrastructure facilities to the Town Panchayats.

During the years 2011-12 to 2015-16, a sum of ₹125.74 crore had been allocated for 603 works such as construction of office building, water supply works, Solid Waste Management, Storm Water Drain, Road, Community hall, Bus stand, Improvement of Burial ground and ULB Contribution to the water supply scheme have been completed under this scheme which are as follows:

<b>Year</b>	<b>No. of works</b>	<b>Amount (₹ crore)</b>	<b>Remarks</b>
2011-12	84	13.99	All the works completed
2012-13	169	17.09	
2013-14	112	27.42	
2014-15	111	34.25	
2015-16	127	32.99	
<b>Total</b>	<b>603</b>	<b>125.74</b>	

#### **4.11 14<sup>th</sup> Central Finance Commission Grant**

The 14th Central Finance Commission grant is allotted annually by the Government of India to the Town Panchayats for the period from 2015-16 to 2019-20. The allotment has been provided by way of two components, (viz) General Basic Grant and General Performance Grant. During the year 2015-16, a sum of ₹229.11 crore was provided in the Budget Estimate and the same was released in two installment under Basic Grant. Similarly for the year 2016-17, a sum of ₹317.25 crore was provided in the Budget Estimate and the same was released in two installment under general Basic Grant and a sum of ₹93.63 crore was released under Performance Grant. The above grant was utilized towards payment of contribution to Water supply projects, UGSS projects, payment of E.B. Charges, payment of



water charges, Solid waste Management, Laying of Road and footpath and Park Improvements.

#### **4.12 Rain Water Harvesting**

Rain Water Harvesting Programme was launched in 2001. It has made an impressive impact in ground water recharging. Amendments made to Section 215 (a) of the Tamil Nadu District Municipalities Act 1920 and Building Rules 1973 have made it mandatory to provide RWH structures in all the new buildings. Various measures have been taken up for rejuvenation of RWH structures created already in both the public and private buildings, besides creating new ones. IEC activities will be continued in the Town Panchayats to sensitize all the stake holders to sustain the momentum.

There are 1,916 water bodies, maintained by Town Panchayats with an extent of 6286.84 acres. Total number of buildings in Town Panchayats is 24,99,893 out of which 24,31,525

buildings are provided with Rain Water Harvesting facilities as mentioned in the following table.

<b>Sl. No</b>	<b>Type of Buildings</b>	<b>No. of Buildings</b>	<b>No. of Buildings having RWH Structures</b>
1.	Government Buildings	24,226	23,926
2.	Residential Buildings	23,12,331	22,45,842
3.	Commercial Buildings	1,51,404	1,49,825
4.	Industrial Buildings	11,932	11,932
Total		24,99,893	24,31,525

Out of 1,916 water bodies in the Town Panchayats, so far 807 water bodies have been restored under various schemes.

As a flood mitigation measure, during the months of June, July and August of 2016, special campaigns were carried out in all the Town Panchayats for cleaning the approach channels of water bodies to harvest the rain water from North East monsoon.

#### **4.13 Animal Birth Control**

The Government of India had notified the Animal Birth Control (Dogs) Rules 2001 as required under sub-section 1(9) of section 38 of the Prevention of Cruelty to Animals Act, 1960.

In order to implement these Rules in letter and spirit, a survey was conducted and the stray dogs in all the Town Panchayats were estimated as 1,06,559. Out of which 96,062 were sterilized upto 2016-17. For the balance 10,497 dogs, action is being taken to sterilize the stray dogs during the year 2017-18.

#### **4.14 Satellite Town**

Sriperumbudur Town Panchayat of Kancheepuram District has been selected as a Satellite Town under the Centrally Sponsored Scheme of Urban Infrastructure Development Scheme for Satellite Town (UIDSST). The objective of the scheme is to reduce pressure on

million plus urban agglomerations by developing infrastructure facilities in the Satellite Towns and to sustain them by implementing reforms such as energy audit, water audit, introduction of cost effective technologies and capacity enhancement for improved Operation & Maintenance. Reservation of 10-15% of housing sites for the urban poor and promotion of the urban local body level reforms are the other objectives of the scheme. Under the scheme, 3 projects covering the core sectors of water supply, UGSS and solid waste management have been taken up at a cost of ₹123.75 crore.

<b>Sl. No.</b>	<b>Name of the work</b>	<b>Project Cost (₹ in crore)</b>	<b>Stage of Progress</b>
1	Solid Waste Management infrastructure	4.44	Completed
2	Comprehensive Water Supply Scheme	42.20	Works will be completed by October 2017
3	Comprehensive Sewerage Scheme	77.11	Works will be completed by October 2017
Total		123.75	

#### **4.15 Housing Scheme**

The Hon`ble Chief Minister of TamilNadu had announced ambitious goal of Slum Free Cities under VISION 2023.

The Hon`ble Chief Minister of Tamilnadu announced construction of 20,000 houses having a solar power photovoltaic roof top with a financial assistance of ₹2.10 Lakh per house in Town Panchayats at a total cost of ₹420.00 crore. The beneficiaries are selected from the families belonging to Economically Weaker Section (EWS) living in Huts / Mud houses / Thatched houses in Town Panchayats. 3,946 No.of houses have been completed and the remaining 16,054 houses are under progress in various stages. The project is being implemented through the Tamil Nadu Slum Clearance Board as a state level nodal agency.

#### **4.15.1 Housing for All (Urban) Mission Scheme**

50,170 houses are to be constructed during the year 2016-17 at a rate of ₹2.10 lakh family at a total cost of ₹1,053.57 under 'Housing for All (Urban) Mission' scheme. Beneficiaries have been selected from Economically Weaker Section (EWS). Work orders have been issued to the beneficiaries.

Further, 45,267 houses are to be constructed for Economically Weaker Section (EWS) at a cost of ₹2.10 lakh per family at a total allocated amount of ₹ 950.61 Crore under 'Housing for All (Urban) Mission scheme as Phase-II. Sanction has been given at the 18<sup>th</sup> meeting of the Central Sanctioning and Monitoring Committee (CSMC) held on 18.01.2017.

#### **4.16 Implementation of GIS based Property Tax in Town Panchayat**

The Government in principle have introduced GIS based property tax system in Ponneri Town Panchayat initially, with a view to augment the property tax source by way of identifying un-assessed and under-assessed properties for improving the collection of tax. For that purpose, a sum of ₹32.84 lakh was sanctioned during the year 2013 for implementation of GIS based property tax in Ponneri Town Panchayat on a pilot project basis. The project had been completed and the income of the Town Panchayats had increased by ₹6.00 Lakh per annum over the years. The GIS based property tax assessment will be extended to other Town Panchayats.

#### **4.17 Street Lights**

There are 4,25,783 street lights including 1,230 High mast lights, 2,544 mercury lights,

36,692 sodium lights, 2,60,670 Tube lights, 96,570 CFL, 3,066 Solar lights and 25,011 LED lights are being maintained by the Town Panchayats. All the street lights will be replaced by energy efficient lights in a phased manner.

#### **4.18 Vardah Cyclone**

Vardah Cyclone led to severe wind and rainfall uprooting large number of trees in Chennai, Kancheepuram and Tiruvallur Districts. It caused heavy damage to the infrastructure such as roads, drains, culverts, street lights, water supply. in the Town Panchayats.

6,399 trees and branches which had fallen on the roads were cut and removed and normalcy restored immediately. 2,247 EB poles and 2,761 street lights damaged were restored.

A sum of ₹2.86 lakh was incurred as expenditure for food packets distribution to the people who are accommodated in the relief centers. In order to restore the above damages,



immediate relief measures were taken up in a war footing manner.

In respect of Water Supply, Motor and pumps were operated by gensets and protected water supply distributed and normal life restored.

#### **4.19 Award**

With a view to motivate the Town Panchayats to achieve service level bench mark such as provision of sanitation, water supply, solid waste management and other urban services, the Government had instituted Awards to the best three Town Panchayats with a cash Award of ₹10.00 lakh, ₹5.00 lakh and ₹3.00 lakh respectively.

In the year 2015-16 the first 3 prizes were awarded to Town Panchayats namely, Velur of Namakkal District, Chinnasalem of Villupuram District and Periyanaayakkanpalayam of Coimbatore District respectively.

## **5. Chennai Metropolitan Water Supply and Sewerage Board**

The Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) was established in 1978. It is vested with the responsibility of promoting and securing the planned development of water supply and sewerage services, operation, maintenance and creation of the required infrastructure and implementation of prospective plans to meet the requirements of Chennai Metropolitan area for the present and future.

At present, Chennai Metropolitan Water Supply and Sewerage Board is providing services through 15 Area Offices and 200 Depot Offices covering an area of 426 Sq.Km with a population of 67.27 lakhs (as per 2011 census). It also supplies water to some local bodies, bulk and industrial consumers.

## **5.1 Sources of Drinking Water for Chennai City**

Chennai city draws water from surface sources, desalination plants and ground water to meet its water requirement.

### **5.1.1 Surface Water**

The reservoirs at Poondi, Cholavaram, Redhills (Puzhal) and Chembarambakkam near Chennai city, Veeranam lake in Cuddalore district and the Telugu Ganga Project are the main surface water sources for Chennai city as given below:

<b>Sl.No</b>	<b>Reservoir</b>	<b>Storage Capacity (in Mcft)</b>
1	Poondi	3,231
2	Redhills (Puzhal)	3,300
3	Chembarambakkam	3,645
4	Cholavaram	881
5	Veeranam	1,465
	Total	12,522

In 2004, as an additional source of water to Chennai city, New Veeranam water supply

project with a capacity to supply 180 MLD of water was commissioned.

Krishna water is being received for Chennai city from Kandaleru reservoir situated in Andhra Pradesh under Telugu Ganga Project. As per the agreement signed between the Governments of Tamil Nadu and Andhra Pradesh, 12 TMC of water per annum is to be supplied to Chennai for its drinking water needs. The maximum receipt of water in one year so far has been only 8.2 TMC. In the year 2016-17, the receipt of water was 2.278 TMC only.

### **Rainfall in the catchment areas of the city reservoirs**

Year	Rainfall in mm		Difference in %
	Normal (30 years average)	Actual	
2012	1293.42	981.80	-24.09
2013	1297.50	1064.87	-17.93
2014	1286.21	1025.80	-20.25
2015	1273.17	2155.23	+69.28
2016	1308.05	837.00	-36.03

## **5.1.2 Desalination Plants**

Chennai city is mainly dependent on the rainfall during monsoon for surface water availability. Failure of monsoons leads to acute shortages in reservoir levels and affects water supply to Chennai city. The non-availability of perennial rivers near Chennai adds to the challenge. In 2003-04, the late Hon'ble Chief Minister in a far sighted move, announced the setting up of desalination plants to meet out the growing water demand. The Government has established two desalination plants with a capacity of 100 MLD each which are currently operational at Minjur and Nemmeli. These plants contribute substantially for city water supply.

### **5.1.2.1 Desalination plant at Minjur**

In Minjur, a 100 MLD (Million litres per day) desalination plant, built on Design, Build, Own, Operate and Transfer (DBOOT) basis, is under operation and supplies water to the

northern parts of Chennai city viz., Manali, Madhavaram, Ennore, Kathivakkam, Thiruvottiyur, Tondiarpet and Vyasarpadi.

### **5.1.2.2 Desalination Plant at Nemmeli**

A 100 MLD desalination plant was constructed at a cost of ₹805.08 crore with assistance from Government of India at Nemmeli. This plant was inaugurated on 22.02.2013 by the late Hon'ble Chief Minister and is under operation. Water from this plant is being supplied to the southern parts of Chennai viz., Sholinganallur, Neelangarai, Injambakkam, Karapakkam, Semmancherry, Thoraipakkam, Perungudi, Kottivakkam, Palavakkam, Thiruvanmiyur, Velachery, Taramani, Pallipattu, Adyar, Besant Nagar, Nandanam, MRC Nagar, Raja Annamalaipuram and Mylapore.

During 2012-2014 and 2016-17, deficit monsoons in the catchment areas have increased our reliance on desalination plants and

these plants have helped to ease the water supply situation in the city.

### **5.1.3 Ground water**

The drawal of ground water from the aquifers at Tamaraipakkam, Poondi and Neyveli is 215 MLD.

### **5.1.4 Operations and Maintenance of water supply**

For providing potable water to the city, CMWSSB is operating water treatment plants at Kilpauk, Redhills, Chembarambakkam, Surapattu and Vadakuthu and desalination plants at Minjur and Nemmeli.

#### **Treatment capacity of water treatment plants**

<b>Water treatment plants</b>	<b>Treatment capacity in MLD</b>
Kilpauk	270
Redhills	300
Chembarambakkam	530
Vadakuthu	180

Surapattu	14
Desalination plants at Kattupalli-Minjur and Nemmeli	200
Total	1,494

Since its inception in 1978, the Board's water supply operations have seen manifold increase.

### **Growth in Water supply operations**

<b>Description</b>	<b>In 1978</b>	<b>In 2017</b>
Operational area (sq.km)	174	426
Population (in lakh)	28.60	74.38
Length of water mains (Km)	1,250	6,697
Distribution stations	3	74
Water treatment capacity (MLD)	182	1,494
No. of consumers	1,16,000	6,82,681

### **5.2 Water supply – New Schemes**

After inception of 42 newly added areas to Chennai Corporation, for augmenting water supply to unserved areas with special attention



on covering the added areas, CMWSSB has taken up various schemes.

Water supply schemes have been completed in 9 added areas viz. Thiruvottiyur, Kathivakkam, Ambattur, Maduravoyal, Valasaravakkam, Porur, Alandur, Meenambakkam and Injambakkam.

In 26 added areas namely Edayanchavadi, Sadayankuppam, Kadapakkam, Theeyambakkam, Vadaperumbakkam, Manali, Surapattu, Kathirvedu, Puthagaram, Puzhal, Chinnasekkadu, Madhavaram, Ramapuram, Nolambur, Karambakkam, Manapakkam, Nandambakkam, Mugalivakkam, Ullagaram-Puzhuthivakkam, Pallikaranai, Perungudi, Kottivakkam, Palavakkam, Sholinganallur, Karapakkam and Okkiyum-Thoraipakkam water supply schemes are in progress.

Water supply schemes in 6 added areas namely Mathur, Jalladampettai, Madipakkam, Neelankarai, Semmancheri and Uthandi will be taken up with central and state Government funds.

### **5.2.1 150 MLD capacity Desalination Plant at Nemmeli along ECR Chennai**

The late Hon'ble Chief Minister made an announcement under Rule 110 on the floor of assembly that another 150 MLD capacity desalination plant will be set up in the vacant land of 10.50 acres available in the premises of the 100 MLD desalination plant at Nemmeli.

The Detailed Project Report has been prepared at a cost of ₹1,371.86 crore for setting up 150 MLD capacity desalination plant in the available vacant land of the existing Nemmeli desalination plant. This includes supplying and laying the product water conveyance main also. The DPR cost was revised to ₹1,258.88 crore.

It is proposed to implement the project with loan from KfW, Germany. The loan agreement for 100 million Euro (approximately ₹700 crore) was signed by Government of India and KfW on 28.06.2016. For this project, ₹505.62 crore has also been received as grant from both Government of India and Government of Tamilnadu under AMRUT scheme. Tenders for this project have been invited.

Water produced from this plant will be supplied to improve water supply in the southern parts of Chennai city viz. Velachery, Alandur, St.Thomas Mount, Medavakkam, Kovilambakkam, Nanmangalam, Keelkattalai, Moovara sampettai, Sholinganallur, Ullagaram-Puzhuthivakkam, Madipakkam and IT corridor areas.

### **5.2.2 400 MLD capacity Desalination Plant at Perur along ECR, Chennai**

The late Hon'ble Chief Minister made an announcement under Rule 110 on the floor of assembly that a 400 MLD desalination Plant will be constructed at Pattipulam along the East Coast Road in South Chennai. The location was shifted to a nearby site at Perur on the East Coast Road as the land proposed for the project was found to have some legal problems.

The Detailed Project Report for setting up the 400 MLD capacity SWRO desalination plant at Perur, has been prepared at a cost of ₹4070.68 crore. During scrutiny, by CPHEEO, MoUD the DPR was appraised for an estimate cost of ₹2891.70 crore and sent to Government of India for getting financial assistance under JICA.

JICA study team evaluated the Project and suggested changes including the inclusion of a component for improving the distribution infrastructure of the core Chennai City. Accordingly, the revised project is proposed to be implemented at a cost of ₹5,312.47 crore. A revised DPR has been prepared and sent to Government of India for scrutiny and approval.

Water produced from this plant will be supplied to improve water supply in Chennai and its surrounding areas like Tambaram, Pallavaram, Madambakkam, Sembakkam, Chitlapakkam, Peerkangaranai, Perungalathur, Thirneermalai, Kundrathur, Kattankulathur and Mangadu benefitting a population of about ₹22.67 lakh.

### **5.2.3 Laying second water transmission main from Chembarambakkam to Poonamallee bye-pass junction**

A second pipe line of 2,000 mm diameter from Chembarambakkam Water Treatment Plant to Poonamallee bye-pass junction to convey the

full quantity of 530 MLD of treated water from Chembarambakkam to the city for a length of 6.5 Kms proposed at an estimated cost of ₹41.35 crore is under progress and is expected to be completed before November 2017.

#### **5.2.4 Laying of pipeline from the newly formed reservoir at Kannankottai and Thervoykandigai to convey water to the poondi reservoir**

Laying of 900 mm dia. pumping main for a length of 17 Km at an estimated cost is ₹93.77 crore to transmit water from the proposed Thervoykandigai reservoir to Krishna water canal is under progress and is likely to be completed by November 2017.

#### **5.2.5 Water Supply Schemes under the Chennai Mega City Development Mission (CMCDM)**

Chennai Mega City Development Mission was launched by the late Hon'ble Chief Minister to improve infrastructure and basic amenities in Chennai city with special focus on the newly

added areas. The status of the works taken up under the scheme is as follows:

### **Water supply works taken up under CMCDM**

<b>Sl. No</b>	<b>Year</b>	<b>Name of the scheme</b>	<b>Est. cost (₹in crore)</b>	<b>Status of works</b>
1	2011-12	Laying of water supply lines in uncovered areas of Slums	23.56	Works completed
		Providing Under Ground Tanks and Water filling points in Newly Added areas	12.23	
		Replacement of choked water mains / PVC mains	20.71	
2	2012-13	Nolambur	18.00	Works will be completed by December 2017
		Karambakkam	20.56	Works will be completed by December 2017
		Ramapuram	32.54	Works will be completed by December 2017
		Manapakkam	10.92	Works will be completed by December 2017

Sl. No	Year	Name of the scheme	Est. cost (₹ in crore)	Status of works
		Nandambakkam	6.00	Works will be completed by December 2017
		Okkiyam-Thoraipakkam	46.00	Works will be completed by March 2018
		Injambakkam	22.30	Works completed
		Sholinganallur-Karapakkam	35.70	Works will be completed by October 2017
3	2013-14	Sadayankuppam	28.21	Works will be completed by December 2017
		Edayanchavadi		
		Kadapakkam		
		Manali	21.33	
		Chinnasekkadu	11.00	
		Vadaperumbakkam & Theeyambakkam	20.00	



<b>Sl. No</b>	<b>Year</b>	<b>Name of the scheme</b>	<b>Est. cost (₹ in crore)</b>	<b>Status of works</b>
		Kottivakkam	23.00	Works will be completed by September 2018
		Perungudi	45.00	Works will be completed by December 2017
		Palavakkam	30.00	Works will be completed by September 2018
		Surapattu	82.61	Works will be completed by December 2017
		Kathirvedu		
		Puthagaram		
		Puzhal		
		Pallikaranai	42.82	Works will be completed by September 2018
		Mugalivakkam	31.37	
Total			583.86	

## 5.2.6 Jawaharlal Nehru National Urban Renewal Mission (JnNURM)

Status of the works taken up under the Jawaharlal Nehru National Urban Renewal Mission, is as follows:

Sl. No	Name of the scheme	Est. cost (₹ in crore)	Status of works
1	Improvement works to water supply system in Chennai city	322.00	Works completed
<b>Water Supply Schemes</b>			
2	Maduravoyal	23.30	Work completed
3	Thiruvottiyur	85.11	
4	Ambattur	267.08	
5	Alandur improvement works	64.39	
6	Ullagaram-Puzhuthivakkam	24.24	Works related to commissioning of the scheme will be completed by October 2017.
7	Nerkundram	19.17	70% works completed and the contract has been terminated for slow progress. Retender is invited for the balance works.
Total		805.29	

<b>Deposit works for other Local Bodies</b>			
1	Avadi	103.84	Part of the scheme work completed and commissioned. Balance works will be completed by December 2017
2	Anakaputhur	14.87	Work will be completed by June 2018
3	Sriperumbudur	42.20	Works will be completed by December 2017
Total		160.91	

### **5.2.7 Japan International Co-operation Agency (JICA)**

Madhavaram water supply scheme has been taken up with JICA assistance. The details are as follows:

<b>Scheme</b>	<b>Est. cost (₹in crore)</b>	<b>Status of works</b>
Madhavaram	55.00	Works will be completed by November 2017

### **5.2.8 Tamil Nadu Urban Development Project – III (TNUDP-III)**

The status of works taken under TNUDP III are as follows:

<b>Sl. No.</b>	<b>Scheme</b>	<b>Est. cost (₹in crore)</b>	<b>Status of works</b>
1	Pammal	43.10	Works will be completed by December 2017
2	Pallavaram	99.95	Works will be completed by December 2017
<b>Total</b>		<b>143.05</b>	

### **5.2.9 Replacement of damaged water mains in Chennai City under Infrastructure and Amenities Fund**

In Chennai city, about 914 km of water distribution pipe lines were identified as more than 30 years old. These pipes have been renewed periodically under various schemes. In order to improve the distribution of water supply, the late Hon'ble Chief Minister has announced the proposal of renovation of chocked up water main, providing new water mains in left out streets and laying of feeder mains for a length of about 310 Km at a cost of ₹116.04 crore. Work is under progress and is likely to be completed in December 2017.

### **5.2.10 Laying of water supply transmission main to Tambaram, Pallavaram and Pammal areas**

To extend water supply to Tambaram, Pallavaram, Pammal and other local bodies, Government sanctioned a project to lay a 1,200 mm transmission main from Poonamallee bye-pass junction to Tambaram for a length of 22 km at a cost of ₹93.48 crore from the Infrastructure and Amenities Fund and the Project has been completed.

### **5.3 Sewerage services**

In Chennai city, CMWSSB is providing sewerage services including waste water treatment, reuse of treated water and power generation from Sewage Treatment Plants. Sewage Treatment Plants at Chennai have an installed capacity of 764 MLD.

Chennai city is having the sewerage system for a length of 4,250 km and the Sewage

generated from houses and other buildings is collected through 250 sewage pumping stations. The sewage system of the city is divided into 5 zones with independent zonal collection, conveyance, treatment and disposal facilities. The collected sewage from pumping stations is treated at 12 Sewage Treatment Plants.

### **Capacity of Sewage Treatment Plants**

<b>Sl. No.</b>	<b>Treatment Plant</b>	<b>Capacity in mld</b>
1	Nesapakkam (3 units : 23+40+54 mld)	117
2	Kodungaiyur (3 units : 110+80+80 mld)	270
3	Koyambedu (3 units : 34+60 +120 mld)	214
4	Perungudi (2 units : 79+72 mld)	151
5	Alandur (1 unit : 12 mld)	12
Total - 12 units		764

## Sewage Treatment Plants under construction

Sl. No.	Location	Capacity in mld	Estimate cost (₹ in crore)	Present stage
1	Thiruvottiyur	31	26.33	Works will be completed by December 2017.
2	Sholinganallur-I	18	33.71	Works will be completed by August 2017
3	Sholinganallur-II	54	65.97	Works will be completed by January 2019
Total		103	126.01	

The sewerage services of the Board have increased manifold since the formation of the Board in 1978.

## Improvements in sewerage services

Sl. No.	Description	In 1978	In 2017
1	Length of sewer mains (in Km)	1,223	4250
2	No. of pumping stations	58	250
3	Sewage treatment capacity(MLD)	57	764
4	No. of consumers	1,14,000	8,15,557

### **5.3.1 Sewerage Schemes taken up under the Chennai Mega City Development Mission (CMCDM)**

Under Chennai Mega City Development Mission (CMCDM), CMWSSB is implementing underground sewerage scheme in the added areas of Chennai city to bring significant improvements to the living standards with respect to public health, environment and sanitation of the added area on par with core city. Under this fund, the following schemes have been taken up in the newly added areas:

Out of 42 added areas, Under ground sewerage schemes have been completed in 4 areas viz. Madhavaram, Valasaravakkam, Alandur, and Meenambakkam.

In 15 added areas namely Thiruvottiyur, Kathivakkam, Surapattu, Puthagaram, Kathirvedu, Ambattur, Nolambur, Maduravoyal, Porur, Ullagaram-Puzhuthivakkam, Pallikaranai,



Ramapuram, Perungudi, Sholinganallur and Karapakkam underground sewerage schemes are under progress. The schemes for Nerkundram and Mugalivakkam are in tender stage.

For 8 added areas namely Manali, Chinnasekkadu, Edayanchavadi, Sadayan kuppam, Kadappakkam, Karambakkam, Manapakkam, and Okkiyam Thoraipakkam, DPRs have been prepared and these works will be taken up both under GoI and GoTN funds. DPR for providing under ground sewerage scheme for the balance 13 added areas viz. Puzhal, Mathur, Theeyambakkam, Vadaperum pakkam, Nandambakkam, Kottivakkam, Palavakkam, Neelankarai, Madipakkam, Semmencherry, Jalladampettai, Injambakkam and Uthandi, are under preparation.

## Sewerage schemes taken up under CMCDM

Sl. No	Year	Name of the scheme	Estimate Cost (₹ in crore)	Status of works
1	2011-12	Laying of force mains between pumping stations	9.26	Work completed and put into use
		Enlargement of Sewage Pumping Mains	20.39	
		Insertion of UGSS manholes in Mogappair, construction of Roadside pumping stations with submersible pumpsets	14.08	
		Improvement to existing Sewage Pumping stations	11.24	
		Enlargement of sewer mains	31.18	
		Procurement of sewerage maintenance equipments	9.90	Machines purchased and in use
		Re-routing and enlargement of Sewage Pumping Mains and allied works at Velacherry	36.55	Work will be completed by August 2017
2	2012-13	Kathivakkam	86.15	Work will be completed by September 2017

Sl. No	Year	Name of the scheme	Estimate Cost (₹ in crore)	Status of works
		Sholinganallur-Karapakkam	110.90	Work will be completed by October 2017
		Ramapuram	48.50	Work will be completed by December 2017
		Procurement of sewerage maintenance equipments	15.20	Machines purchased and in use
3	2013-14	Thiruvottiyur (Annai Sivagami Nagar)	8.51	Work completed and commissioned.
		Nolambur	26.01	Work will be completed by September 2017
		Surapattu	35.00	Work will be completed by September 2017
		Puthagaram & Kathirvedu	60.00	Work will be completed by September 2017
		Mugalivakkam	75.24	Retender to be called for.
		Total	598.11	

### 5.3.2 Jawaharlal Nehru National Urban Renewal Mission (JnNURM)

The status of works under Jawaharlal Nehru National Urban Renewal Mission is as follows:

Sl. No	Name of the Scheme	Est. cost (₹ in crore)	Status of works
1	Providing water supply and sewerage facilities along Rajiv Gandhi Salai	41.77	Work completed
<b>Under Ground Sewerage Schemes</b>			
2	Ullagaram-Puzhuthivakkam	28.08	Work will be completed by July 2017
3	Ambattur (Package-II, III, IV & V)	130.91	Work completed under Packages III, IV & V). For Package II, retender to be called for balance works.
4	Maduravoyal	57.45	Work will be completed by December 2017
5	Porur	38.29	Work completed but can be commissioned only after completion of Ramapuram UGSS in December 2017
6	Perungudi	20.19	Work will be completed by October 2017
7	Pallikaranai	58.61	Work will be completed by October 2017
Total		375.30	

<b>Sl. No</b>	<b>Name of the Scheme</b>	<b>Est. cost (₹ in crore)</b>	<b>Status of works</b>
<b>Deposit works for other local bodies</b>			
8	Avadi Municipality	158.05	Work will be completed by December 2017
9	Tambaram Municipality	160.97	Work will be completed by December 2017
10	Thirumazhisai Town Panchayat	20.47	Work completed.
11	Sriperumbudur Town Panchayat	47.40	Work will be completed by December 2017
<b>Total</b>		<b>386.89</b>	

### **5.3.3 Tamil Nadu Urban Development Project – III (TNUDP- III)**

Under TNUDP-III scheme, assistance has been provided for the following three works:

<b>Sl. No</b>	<b>Name of the Scheme</b>	<b>Est. cost (Rs.in crore)</b>	<b>Status of works</b>
1	Madhavaram – UGSS	50.22	Work completed
2	Thiruvottiyur – UGSS	87.63	Work will be completed by December 2017.
3	Ambattur, Phase:I-UGSS	65.75	Work completed.
<b>Total</b>		<b>203.60</b>	

#### **5.3.4. Tamil Nadu Investment Promotion Programme (TNIPP) - Construction of additional 54 MLD sewage treatment plant at Sholinganallur.**

To treat the sewage generated from added areas located in the southern part of Chennai city, construction of new 54 mld sewage treatment plant at Sholinganallur has been taken up at a cost of ₹65.97 crore. This plant has been designed with latest treatment technology with provision for power generation. Work order has been issued and work is under progress.

#### **5.3.5 Mechanisation of sewer cleaning operations**

In Chennai City, the Board has mechanized the operation and maintenance of the sewerage system, by procuring adequate number of machines and is presently operating 113 Jet Rodding machines, 238 Desilting machines, 30 Jetting cum suction machines and

43 Super Sucker machines for effective maintenance of its sewer system.

### **5.3.6 Preventive maintenance of sewer system**

CMWSSB is serving 8,15,557 consumers by maintaining sewer lines of 4,250 km. Due to the topography of Chennai city (Flat terrain), CMWSSB has now implemented preventive maintenance for its sewer network. Sewers have been classified depending on the periodicity of maintenance required and accordingly the equipment is deployed and the sewer network is maintained by the Board. By the implementation of preventive maintenance of sewer system, the number of sewer blocks in the city has been considerably reduced.

### **5.3.7 Plugging of sewage outfalls**

It was proposed to plug 337 sewage outfalls at a cost of ₹300 Crore during the Budget 2012-13. This would prevent untreated

sewage from entering Chennai city water ways and the sewage would be appropriately treated and disposed.

In phase-I, works for plugging 179 of the 337 outfalls were taken up and are in progress. An amount of ₹150 Crore was sanctioned under Infrastructure and Amenities Fund. These works will be completed by September 2017.

In phase-II, to carry out the works for plugging of balance 158 sewage outfalls, Government has sanctioned ₹163 crore. These works are taken up under 7 package. Out of these, works are in progress in 4 package and tenders for three package are under evaluation.

### **5.3.8 Reuse of secondary treated water in Industries**

Secondary treated water to the tune of 28.53 MLD is being supplied to M/s. Chennai Petroleum Corporation Ltd., M/s. Madras Fertilizer Ltd., and M/s. Manali Petro Products



Ltd. by CMWSSB. The revenue accrued to the Board is ₹17.54 crore for the year 2016-17.

### **5.3.8.1 Recycling of waste water - 45 MLD TTRO Plant at Koyambedu**

Government of Tamil Nadu has accorded Administrative sanction for the construction of a 45 MLD capacity Tertiary Treatment Reverse Osmosis (TTRO) plant at Koyambedu to supply treated water to the industries at Irungakattukottai / Sriperumbudur / Oragadam at a cost of ₹486.21 crore. For this scheme, ₹231.50 crore has been received as loan under TNIPP and ₹208.82 crore has been sanctioned as grant from GoI and GoTN under AMRUT. Work order has been issued and work is under progress.

### **5.3.8.2 Recycling of waste water - 45 MLD TTRO Plant at Kodungaiyur under TNSUDP**

To cater to the Industries and Power plants in North Chennai, the late Hon'ble Chief

Minister of Tamil Nadu had announced on the floor of the Assembly that Government would promote reuse of treated waste water for industrial purposes in place of fresh water by constructing another 45 MLD TTRO Plant at Kodungaiyur at a cost of ₹330 crore. Administrative approval has been accorded by Government of Tamil Nadu. For this scheme ₹229.50 crore has been received as loan under TNSUDP and ₹118.67 crore has been sanctioned as grant from GoI and GoTN under AMRUT. Work order has been issued and work is under progress.

#### **5.4 Sustainable Water Security Mission**

The late Hon'ble Chief Minister has announced the Sustainable Water Security Mission to encourage sustainable practices in water management in Chennai city. Under this Mission, Campus Rainwater Harvesting, Storm water harvesting, Campus grey water recycling and reuse & Restoration and rejuvenation of

lakes are under progress. The main objective of this mission to implement the good practices in water management by public participation.

### **5.5.Rainwater Harvesting**

Tamil Nadu is the pioneer in implementing rain water harvesting (RWH) programme in the country. Implementation of rain water harvesting programme was started by CMWSSB from the year 2002. This has made Chennai a pioneer in rain water harvesting. The Board is creating awareness to the residents of Chennai city about rain water harvesting by issuing pamphlets, booklets, seminars and exhibitions.

To avail new/renewal of water and sewer connections, installation of Rain Water Harvesting structures has been made mandatory for all buildings irrespective of size and area.

In Chennai city about 7,92,700 buildings are in existence with a total no. of 8,62,700

RWH structures. During the year 2016-17, a total number of 15,200 rainwater harvesting structures were constructed through new/renewal of water and sewer connections. Recharge potential from Rain Water Harvesting structures is 2.70 TMC. Awareness campaigns and special camps are conducted before monsoon every year to encourage consumers to maintain the structures properly. The Area / Depot Engineers are monitoring the installation and maintenance of Rainwater Harvesting Structures in Chennai city.

Following the implementation of the Rain Water Harvesting scheme, ground water levels and its quality is improving every year, especially during the monsoon period.

## **5.6 Drought Mitigation Works**

Due to deficit in rainfall in the year 2016 the supply pattern had been re-organised and CMWSSB is maintaining reorganized piped water

supply of about 550 MLD from 01.01.2017 to 31.03.2017 and 500 MLD from 01.04.2017 to 31.05.2017. The current water supply is 470 MLD. CMWSSB has taken the following emergency drought mitigation and management measures in order to maintain adequate water supply till the monsoon season.

### **5.6.1 Measures taken for water source augmentation**

#### **5.6.1.1 Hiring of Agricultural wells**

The project to draw 100 MLD of water from Thiruvallur District by hiring private agricultural wells have been completed and 100 MLD of water is currently being drawn from 240 agricultural wells.

#### **5.6.1.2 Neyveli, Paravanar and Gadilam Borewells**

Since Veeranam Lake had completely dried by the end of last year (2016), only 25 MLD of water could be drawn from the well fields near

Gadilam area, Neyveli mines and from Paravanar river. From the above water sources, it was proposed to increase drawal to 85 MLD of water and currently around 90 MLD of water is received and supply to Chennai city, after completion of the works taken up in this regard.

#### **5.6.1.3 Pumping of dead storage from Cholavaram and Redhills Lake**

In order to utilize the dead storage from Cholavaram lake, the water has been pumped to Redhills lake, via lower supply channel and supplied for distribution to Chennai city. Similarly, the dead storage from Redhills lake, is pumped and supplied to Chennai city.

#### **5.6.1.4 Extraction of water from Quarries**

22 abandoned quarries were identified at Sikkarayapuram near Kundrathur in which around 3000 ML of water were stored. The water samples were sent for Quality testing and after the positive test report, this water

is pumped from the quarries to Chembarambakkam treatment plant at an estimated cost of ₹13.63 Crore. The work has been completed and now, 30 MLD of water is received from these quarries.

#### **5.6.1.5 Augmentation of water from small lakes near Chennai**

In order to meet out the drought contingency it has been proposed to treat and supply the available water from Porur Lake at the rate of 4 MLD. The work is in progress and it has been planned to commission by the end of June 2017.

#### **5.6.2 Water supply improvement works in Chennai**

##### **5.6.2.1 Augmentation of water supply by Mobile tankers**

In order to manage the drought and provide water supply to streets which are not receiving piped supply, 180 water lorries has been mobilized in addition to the existing 520

hired lorries and is now operating around 7000 trips per day through 700 water lorries.

#### **5.6.2.2 Installation and Rehabilitation of IM II pumps**

In Chennai City, 5,100 IM II pumps are in use. Out of this 566 IM II pumps have been rehabilitated. In addition to this 150 IM II pumps were newly erected and put in to use.

#### **5.6.2.3 Procurement of additional HDPE Tanks and repairs**

For the Defective streets, water supply has been made through mobile tankers and distributed to 10,800 HDPE tanks. In order to manage the drought, it is proposed to erect additional 660 new HDPE tanks, in which 535 HDPE tanks are erected and works are under progress for the installation of remaining tanks.

#### **5.6.2.4 Installation of new filling posts**

Currently from 41 water distribution stations, water is being filled through the



existing 169 filling posts and distributed to the consumers through water lorries. In addition to this, 22 new filling posts are installed and put in to use for the distribution of water more effectively.

In anticipation of drying of Poondi, Cholovaram, Puzhal and Chembrambakkam lakes, various emergency drought mitigation works have been taken up on a war footing and are being implemented at a cost of ₹105 crore.

## **5.7 Financial Position**

The total revenue expenditure for the year 2016-17 is ₹1084.25 crore. The total income of the Board is ₹786.04 crore. Of this, the income from Water and Sewerage Taxes is ₹165.38 crore, water and sewerage charges is ₹280.45 crore and other income is ₹53.85 crore. For purchase of desalinated water and other purposes, the Government of Tamil Nadu

provides grants to the Board. CMWSSB received a sum of ₹286.36 crore as grant during the year 2016-17.

## **5.8 Grievance Redressal**

To improve service delivery, ensure transparency and speedily redress grievances of consumers, the Board has taken the following steps:

### **5.8.1 24x7 Complaints Registration & Monitoring System**

A 24x7 complaint cell is functioning at the CMWSSB Head Office to receive, register and monitor the grievances of the consumers. Consumers can register their complaints / grievances either in person or by dialling 45674567. The registered complaints are immediately transferred online and also by SMS to the respective Depot Engineer to rectify the defects. Accordingly, rectification of the defects is being attended to immediately. On an

average, 160 complaints are being registered in the complaint cell daily. The grievance redressal system has been revamped to make it user friendly. A separate grievance redressal and facilitation office has been set up at Head office to serve the consumers.

Short Message Service (SMS) is being maintained by the Board to enable the consumer to get an acknowledgement through SMS for the complaint preferred. Action taken is informed to the consumer through SMS after redressal of the complaint.

### **5.8.2 Complaint redressal through website**

Consumers can register their complaints online through the Board website [www.chennaietrowater.tn.nic.in](http://www.chennaietrowater.tn.nic.in). The registered complaints are forwarded to the respective Area Offices and the same are redressed within the norms of the Citizens' Charter.

### **5.8.3 Open House Meeting**

To improve service delivery to the consumers of Chennai city, the Board conducts Open House Meetings in all the Area Offices between 10.00 A.M. and 1.00 P.M. on the 2nd Saturday of every month. The Senior Officers of the Board preside over these meetings. The complaints / grievances / suggestions received during these meeting are also attended to immediately.

## **6. Tamil Nadu Water Supply and Drainage Board**

Government of Tamil Nadu, with the objective of providing protected water supply as well as Under Ground Sewerage Schemes to the local bodies in Tamil Nadu excluding Chennai Corporation constituted Tamil Nadu Water Supply and Drainage Board as a statutory body on 14.04.1971. The Board is headed by the Principal Secretary to Government, Municipal Administration and Water Supply Department as Chairman and Managing Director is the Chief Executive supported by Technical, Financial and Administrative Wings. There are four Chief Engineers at Regional level with Headquarters at Vellore, Thanjavur, Coimbatore and Madurai. There is one Project Chief Engineer at Dharmapuri.

## **6.1 Functions of TWAD Board**

- a. Planning, Investigation, Design, Implementation and Commissioning of Water Supply and Sewerage Schemes.
- b. Operation and Maintenance of Combined Water Supply Schemes.
- c. Water Quality Monitoring and Surveillance Programme.
- d. Ensuring Sustainability of Drinking Water Sources.
- e. Training Activities.

## **6.2 Rural Water Supply Programme**

The norm for Rural Water Supply has been enhanced, by the Government of India from 40 lpcd to the service level of 55 lpcd for the 12<sup>th</sup> Five year Plan.

Based on the surveys to assess the gap between current supply and the service standard, Water Supply Schemes are implemented for Rural Habitations. Rural Water

Supply Schemes are being implemented with State Government Funds under the Minimum Needs Programme, Government of India assistance under the National Rural Drinking Water Programme and financial assistance from National Bank for Agriculture and Rural Development.

Rural Habitations are provided with Water supply by implementing Combined Water Supply Schemes. The schemes are handed over to the local body for maintenance on completion, when the beneficiary is an individual local body. TWAD Board maintains the scheme, if it is meant for more than one local body.

There are 1,00,018 rural habitations in Tamil Nadu. Out of this, 93,463 habitations are fully covered with water supply at 40 lpcd and the balance 6,555 habitations including 295 Quality affected habitations are partially covered.

3,269 Partially Covered habitations including Quality affected habitations have been taken up for full coverage with water supply at 55 lpcd during 2016-17 and 2,769 habitations have been completed.

### **6.3 Sustainability of Sources**

In addition to implementation of water supply schemes, measures have been taken to augment ground water sources for source sustainability by creating recharge structures such as check dams, recharge shafts, percolation ponds under Government of India and State Government Assisted Programmes.

3,348 Recharge Structures have been constructed by TWAD Board at a cost of ₹228.24 Crore since 2011-12 .



## **6.4 Combined Water Supply Schemes**

With the objective of providing sustainable and potable water supply to the public, TWAD Board formulates and implements Combined Water Supply Schemes in coastal, quality affected and needy areas for more than one local body with common source of water supply viz., Rivers, Dams and Reservoirs. Combined Water Supply Schemes implemented by TWAD Board are for the benefit of both urban and rural local bodies.

24 Combined Water Supply schemes have been taken and these are under various stages at an estimated cost of ₹901.33 crore to benefit 22.71 lakh people. Out of these two Combined Water Supply Schemes (CWSS), have been completed at an estimated cost of ₹54.66 crore, benefiting 1.00 lakh people. These schemes are implemented with financial assistance from the Minimum Needs Programme, National Bank for

Agriculture and Rural Development, the National Rural Drinking Water Programme, Urban Infrastructure Development Scheme for Small and Medium Towns.

The details of various schemes taken up are given below:

<b>Sl. No</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in Crore)</b>	<b>Population (in lakh)</b>	<b>Physical Progress in %age</b>
1.	Augmentation of water supply to 185 habitations in 9 village panchayats of Karamadai union in Coimbatore District	42.94	0.81	Completed
2.	CWSS to 88 habitations in Karapadi and 5 other Village Panchayats, in Bhavanisagar and Nambiyur Unions in Erode District.	11.72	0.19	Completed
3.	CWSS to 158 Rural habitations in Gudimangalam and Udumalaipettai union in Trippur District	54.14	1.23	98%
4.	CWSS to 281 rural habitations of Jeyankondam Union in Ariyalur District	26.06	1.09	95%
5.	CWSS to Vellakoil, Kangayem Municipalities and 528 Rural habitations in	91.40	2.00	95%

<b>Sl. No</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in Crore)</b>	<b>Population (in lakh)</b>	<b>Physical Progress in %age</b>
	Erode and Tiruppur District.			
6.	CWSS to 60 Quality affected and 59 way side habitations in Kattumannarkoil Union and Lalpettai Town Panchayat in Cuddalore District	18.16	0.60	93%
7.	CWSS to 100 habitations in Koodanukulam and 12 other Village Panchayats in Radhapuram and Valliyoor Unions situated around Koodankulam Nuclear Power Plant in Tirunelveli District	68.10	0.88	92%
8.	CWSS to Athangaraipatty and 14 Habitations in Kadamalaikundu - Myiladum parai Union in Theni District	2.65	0.07	85%
9.	CWSS to 90 Rural Habitations in Karungulam (Part), Srivaikundam (Part) and Thoothukudi (Part) Unions in Thoothukudi District	17.17	0.48	78%

<b>Sl. No</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in Crore)</b>	<b>Population (in lakh)</b>	<b>Physical Progress in %age</b>
10.	CWSS to Mulligur and 54 rural habitations in Mulligur, Italar and Nanjanadu Village Panchayats in Nilgiris District.	25.85	0.30	73%
11.	Augmentation of Water supply to 147 Rural Habitations of Alangulam and Sankarankoil unions in Tirunelveli District	31.32	1.56	72%
12.	CWSS to Keelapavoor Town Panchayat (Part) and 163 Rural Habitations in Pappakudi (Part), Kadayam and Keelapavoor Unions in Tirunelveli District	46.55	1.55	70%
13.	CWSS to 248 rural habitations in Kovilpatti (Part), Kayathar (Part), Ottapirdaram (part), Vilathikulam (part) and Pudur (Part) unions in Thoothukudi District	94.04	1.25	64%
14.	CWSS to 170 Rural Habitations in Manur (Part) and Palayamkottai (Part) Unions in Tirunelveli District	32.40	1.13	63%

<b>Sl. No</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in Crore)</b>	<b>Population (in lakh)</b>	<b>Physical Progress in %age</b>
15.	CWSS to 1262 rural Habitations in Vellakoil, Mulanur, Dharapuram, Kundadam, Kangayam Unions in Tiruppur District and Chennimalai Union in Erode District - Phase -II	91.16	2.72	20%
16.	CWSS to Vadugapatti Tpt. & 57 Habs. in Periyakulam Union and Horticultural College and Research Institute at Periyakulam in Theni Dt. and Batlagundu Tpt. in Dindigul District.	45.70	0.92	18%
17.	CWSS to 253 Rural Habitations in Kulithalai and Thogamalai Unons in Karur District	52.75	0.69	Work commenced
18.	CWSS to 306 rural habitations in Perambalur, Veppan thattai and Alathur Unions, Arumbavur and Poolambadi Town Panchayats in Perambalur District	61.11	2.57	Trial run Water Supply effected in 306 habitations

<b>Sl. No</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in Crore)</b>	<b>Population (in lakh)</b>	<b>Physical Progress in %age</b>
19.	CWSS to 101 rural hubs in Thoppampatti Union in Dindigul District (under Vedasandur CWSS)	4.11	0.43	Trial run under progress and Water Supply effected to 57 habitations
20.	CWSS to 109 rural habitations in Oddanchatram Union in Dindigul District (under Vedasandur CWSS)	4.08	0.59	Trial run under progress and Water Supply effected to 78 habitations
21.	CWSS to 201 rural habitations in Reddiarchatram Union in Dindigul District (under Vedasandur CWSS)	8.96	0.86	Trial run under progress and Water Supply effected to 94 habitations
22.	CWSS to 17 quality affected habitations and 69 Way Side Habitations in Parangipettai and Kumaratchi Unions of Cuddalore District and Kodiyampalayam habitation in Nagapattinam District	19.14	0.38	Tender Stage

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)	Physical Progress in %age
23.	CWSS to 135 rural habitations in Marungapuri and Vaiyampatty unions in Tiruchirappalli District utilizing the bulk provision made in Natham CWSS in Dindigul District	46.32	0.29	Tender Stage
24.	CWSS to Kandamanur and 15 Rural habitations in Andipatti and Kadamalaikundu-Myladumparai Unions in Theni District	5.50	0.12	Tender Stage
	Total	901.33	22.71	

## 6.5 Major Combined Water Supply Schemes

CWSS to 1,751 Rural Habitations in Pudukottai District and Vallam Town Panchayat in Thanjavur District has been completed at an estimate cost of ₹315.70 crore, benefiting 7.63 lakh people during 2016-17. 10 Major Combined Water Supply Schemes are under implementation at an estimated cost of

₹2,572.56 crore to benefit 53.28 lakh people. These schemes are implemented with financial assistance from the Minimum Needs Programme (MNP), National Bank for Agriculture and Rural Development (NABARD), National Rural Drinking Water Supply Programme (NRDWP), Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT), Integrated Urban Development Mission (IUDM) and KfW.

The details of the schemes are given below:

<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in crore)</b>	<b>Population (in Lakh)</b>	<b>Physical progress in %</b>
1.	CWSS to 1153 Rural Habitations and Peravurani, Adhirama-pattinam and Perumagalur Town Panchayats in Thanjavur District	495.70	7.00	95 %
2.	CWSS to 1766 Rural Habitations in Pudukottai District and 125 Habitations in Sivagangai District.	301.50	6.65	93 %



<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in crore)</b>	<b>Population (in Lakh)</b>	<b>Physical progress in %</b>
3.	CWSS to Cuddalore Municipality, Bhuvanagiri and Parangipettai Town Panchayats and 812 Rural Habitations in Cuddalore District	260.54	7.75	90%
4.	CWSS to 295 Quality affected Habitations and 315 wayside Habitations in Nagapattinam District	105.70	3.70	77%
5.	CWSS to 698 Rural Habitations in Nangavalli and Mecheri unions with bulk provision to 6 Town Panchayats in Salem District	158.64	3.93	77%
6.	CWSS to Thondamuthur, 6 Town Panchayats and 134 Rural Habitations in Coimbatore District	130.46	1.83	76%
7.	CWSS to Natham, 2 Town Panchayats & 1276 Rural Habitations in Dindigul District (with bulk provision to 2 Town Panchayats & 354 Rural Habitations in Dindigul District & 135 Rural Habitations in Trichy District)	636.00	11.27	69 %
8.	CWSS to 755 Rural Habitations in Virudhunagar District	234.00	6.51	63%
9.	CWSS to Azhagiyapandipuram, 8 Town Panchayats and 246 Rural Habitations in Kanyakumari District	109.80	2.96	55%

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population (in Lakh)	Physical progress in %
10.	CWSS to 293 rural Habitations in Musiri, Thathaiyangarpettai, Thuraiyur and Uppiliyapuram Unions of Trichy District.	140.22	1.68	3%
	Total	2572.56	53.28	

## 6.6 Revamping of Combined Water Supply Schemes

Revamping works are taken up for Combined Water Supply Schemes wherever there is a reduction in yield of sources or a decrease in the efficiency of pumpsets or damages to pipe lines and valves. These revamping works help to make the CWSS fully functional and enhance the supply to the designed level. 1,898 Revamping works were taken up during 2016-17 at a cost of ₹98.57 Crore under SMS/NRDWP/GoI National Calamity Fund / SDRF.

The details of Revamping works are given below

Sl. No.	Category	No.of works	Amount (₹in Crore)
<b>Under NRDWP / SMS</b>			
1	Source Improvement	11	1.34
2	Replacement of pipeline	380	24.35
3	Replacement or overhauling of Pumpsets, Valves, Water meters.	217	11.08
<b>Under GOI Natural Calamity/SMS</b>			
4	Source Augmentation and allied works	642	30.63
<b>Under SDRF / Drought Relief</b>			
5	Erection of New Borewells, Rectification of Borewells and allied works.	238	20.00
<b>Under Additional Drought Relief</b>			
6	Source Restoration works, Replacement / Overhauling of Pumpsets, Cables.	410	11.17
	Total	1,898	98.57

## **6.7 Water Quality Surveillance and Monitoring**

TWAD Board has established one State level water testing laboratory at Chennai, 31 District level and 51 sub district water testing laboratories all over Tamil Nadu to achieve the objective of ensuring safe drinking water supply to the public. Facilities for testing all the basic

chemical and bacteriological water quality parameters and for effective surveillance and monitoring of water supply sources in both Rural and Urban areas are available in these laboratories. Government of India have recognized the State level water testing laboratory at Chennai as State Referral Institute for Tamil Nadu.

NABL Accreditation (National Accreditation Board for Testing and Calibration Laboratories) has been obtained for the State level water testing laboratory, Chennai. 50,000 water samples have been tested in state and district laboratories during the year 2016-17. 12,524 Field water testing kits were supplied to the Panchayats. 10,000 grass root level functionaries were trained for using Field water testing kits.

It is proposed to further intensify the activities of the Lab during 2017-18 by testing

more samples, giving training to grass root level functionaries and supply of testing kits.

## **6.8 Drinking Water Safety Week Campaign**

The Government of Tamil Nadu are conducting week long campaign on water safety to create awareness among the public on Water quality.

Drinking Water Safety Week Campaign has been conducted from 27.06.2016 to 03.07.2016. 31 District rallies, 385 Block rallies, 6,262 Grama Sabha meetings were conducted for creating water quality awareness. 3,000 Field water testing kits were given at free of cost to Panchayats. 26,374 Teachers and 13,187 pump operators were trained for water sample collection and testing during this campaign. About 2 lakh water samples were collected and tested.

## **6.9 Urban Stand Alone Water Supply Programme**

TWAD Board functions as Project Implementation Agency for Stand Alone Water Supply Schemes to Urban Local bodies. These schemes are handed over to the respective Urban local bodies for maintenance on completion.

27 Water Supply Improvement Schemes have been taken up covering 2 Corporations, 15 Municipalities and 10 Town Panchayats for the benefit a population of 18.26 lakh, at a cost of ₹949.88 crore.

Further, Government of Tamil Nadu have accorded administrative sanction for the implementation of Water Supply Improvement Schemes to 9 urban local bodies (5 Corporations and 4 Municipalities) at a cost of ₹2,244.65 crore to benefit a population of ₹43.99 lakh, under State and GOI sponsored Atal Mission for

Rejuvenation and Urban Transformation (AMRUT) – 2015-16.

### **6.10 Operation and Maintenance of CWSS**

As per G.O. (Ms) No.84, Municipal Administration and Water Supply Department, dated 10.03.1994, the CWSS covering more than one local body are being maintained by TWAD Board. As on date, 553 Combined Water Supply Schemes covering 8 Corporations, 66 Municipalities, 324 Town Panchayats, 47,136 Rural Habitations and 532 Industries / Institutions, benefiting a population of 4.21 Crore are being maintained by TWAD Board.

Inspite of the prevailing drought conditions, an average of 1,440 MLD of water is supplied during June 2017 through these 553 Combined Water Supply Schemes to local bodies and Industries/Organisations as detailed below:

<b>Sl. No.</b>	<b>Name of Beneficiary</b>	<b>No.of Beneficiary</b>	<b>Designed Quantity (in MLD)</b>	<b>Average Supplied Quantity in June 2017 (in MLD)</b>
1	Corporations	8	265	137
2	Municipalities	66	264	162
3	Town Panchayats	324	334	263
4	Rural Habitations	47136	1066	859
5	Industries / Institutions/ Commercial Organisations	532	144	19
	<b>Total</b>	<b>48066</b>	<b>2073</b>	<b>1440</b>

During the year 2016-17, the Operation & Maintenance expenditure is ₹667.37 Crore and the Revenue collected through water charges is ₹269.84 Crore.

Government of Tamil Nadu have released ₹140.00 Crore during the year 2014-15, ₹207.11 Crore during the year 2015-16 and ₹103.79 Crore during the year 2016-17 as special grant to meet the gap between Income and Expenditure in Operation and Maintenance of CWSS.



## 6.11 Investigation and Preparation of Detailed Project Reports

### 6.11.1 Water Supply Schemes

34 Nos. of Water Supply Schemes at an estimated cost of ₹14,434.04 crore, to benefit a total population of 136.98 Lakh are under investigation during 2016-17, as detailed below:

Sl. No.	Description	No. of WSS	Beneficiaries	Population benefited (in lakh)	Estimated cost (₹ in crore)
1	Schemes sanctioned	6	8 Municipalities, 11 Town Panchayats & 643 Rural Habs	13.08	1257.74
2	Schemes in various stages of sanction.	9	5 Municipalities, 25 Town Panchayats & 4638 Rural Habs.	28.61	2944.12
3	Investigation/ DPR under preparation	19	2 Corporation, 10 Municipalities. 42 Town Panchayats & 14,173 Rural Habs	95.29	10232.18
	Total	34	2 Corporation, 23 Municipalities, 78 Town Panchayats & 19,454 Rural Habs	136.98	14434.04

### **6.11.2 New UGSS for Urban Local Bodies**

Detailed Project Reports for providing Under Ground Sewerage Schemes in 5 Corporations and 5 Municipalities are prepared at a total cost of ₹2936.84 Crore during 2016-17 and are at various stages of approval.

### **6.11.3 Formation of Water Supply Grid between Chennai and Bangalore exclusively for Industrial needs**

TWAD Board had carried out detailed investigation for Water Supply to meet out the industrial Water Supply needs and to encourage setting up of new industries along Chennai-Bangalore Industrial Corridor. 10,881 industries have been identified between Chennai and Hosur and grouped into 46 industrial clusters. Pre-Feasibility Report has been prepared to cater to the Water Supply needs of these industrial clusters.

Detailed Project Report for Ponneri and Hosur Industrial nodes are under preparation as Phase-I as advised by the Tamil Nadu Infrastructure Development Board (TNIDB).

Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) have been entrusted the works in respect of Ponneri Industrial node by the Government. TWAD Board has been requested to prepare Detailed Project report for Hosur node. Assesment of actual demand is under progress.

### **6.12 Under Ground Sewerage Schemes**

Under Ground Sewerage Schemes in selected District Head Quarters and other towns are being implemented by TWAD Board.

636 Detailed Project Reports at an estimated cost of ₹20,820 Crore to provide UGSS to 3 Corporations, 117 Municipalities and 516 Town Panchayats are prepared by TWAD

Board taking into consideration the objective of the Government of Tamil Nadu to provide Under Ground Sewerage Scheme to all the Urban Local Bodies.

### **6.12.1 Status of the Under Ground Sewerage Schemes**

Under Ground Sewerage Schemes to Perambalur (omitted areas), Ariyalur (omitted areas) and Krishnagiri Municipalities benefiting a population of 74,848 at an estimated cost of ₹50.25 Crore have been completed during the year 2016-17. 22 Under Ground Sewerage Schemes benefiting a population of 15.80 lakh at an estimated cost of ₹1260.49 Crore are in various stages of progress.

Further administrative approval has been accorded to provide Under Ground Sewerage Schemes to Thiruporur, Ponneri and Vallam Town Panchayats and Mettupalayam Municipality

benefiting a population of 1.45 lakh at an estimated cost of ₹222.99 crore.

### **6.12.2 Septage Management Projects**

As a Pilot project, Septage Management project in Karunkuzhi Town Panchayat benefiting a population of 12,000 at an estimated cost of ₹4.93 crore is taken up and is in advanced stage of completion.

Based on the success of this Pilot Project in Karunkuzhi Town Panchayat, the possibility of extending this technology to other Town Panchayats with lesser population density will be examined.

### **6.13 Hydrogeological Activities**

TWAD board extensively uses the state-of-art Technology for remote sensing and GIS (Geographical Information Systems) for Scientific Source Finding Activities and

identification of suitable locations for Recharge Structures.

Ministry of Drinking Water and Sanitation, Government of India had sanctioned the project on preparation of Ground water Prospect Maps (HGM Maps) and district-wise ATLAS for Tamil Nadu and accordingly these maps and ATLAS were prepared. Further, Ground Water Quality map for all Districts have also been prepared and draft water quality maps have been sent to National Remote Sensing Centre (NRSC), Hyderabad and GOI for final approval.

Research & Development project for Tamiraparani River Basin in Tirunelveli and Thoothukudi Districts for the Sustainability of Drinking water sources for future requirement has been taken up by TWAD Board at an estimated cost of ₹2.75 Crore for a period of 3 years. Automatic weather stations have been installed in 5 locations. Automatic water level

recorders have been installed in 10 locations and data are being collected and analysed. High resolution satellite imageries have been procured from NRSE, Hyderabad and the analysis completed.

In order to utilize the defunct Quarry as rain water harvesting cum water supply source, a feasibility study at a cost of ₹48.20 lakh has been taken up by TWAD Board in Kancheepuram and Villupuram Districts in Tamil Nadu. Study is completed in 6 defunct Quarries identified in Kancheepuram and Villupuram Districts.

The State Planning Commission has sanctioned a pilot project to TWAD Board at a cost of ₹99.00 lakh under Tamil Nadu Innovation Initiatives 2015-2016 on Conjunctive use of Ground and Surface Water along with Rain Water Harvesting to ensure 24x7 water supply in Lagampalayam Village Panchayat of Nambiyur union in Erode District. Under this project the

water balance in the Village Panchayat will be worked out by the Community to ascertain the stage of utilization. The drinking water security will be worked out based on the ground water potential available. A detailed plan will also be worked out with Community to ensure rainwater harvesting and to identify needy and unserved area for equitable distribution of water supply.

A detailed O & M plan to provide sustainable drinking water supply will be arrived. As part of achieving good health, hygiene and open defecation free clean environment, awareness on sanitation will be created. This will pave the way for achieving sustainable drinking water security.

Government have accorded Administrative Sanction for implementation of Sustainable Water Security Mission ("SuWaSeM") at a cost of ₹20.00 Crore. The main components of the programme are Roof top Rain water Harvesting



(RRWH), Campus RWH (RWH other than Roof area), Storm water harvesting, Restoration and rejuvenation of water bodies, Grey water recycling, Reduce & Reuse, Research activities and Community outreach. The scheme is proposed to be taken up in the urban areas other than Chennai. Tamil Nadu Water Supply and Drainage Board will be the nodal agency for the programme.

#### **6.14 Material Testing Laboratory in TWAD Board**

There are four Material Testing Laboratories functioning in the TWAD Board at Coimbatore, Madurai, Trichy and Tindivanam. ISO 9001:2008 certifications have been awarded to the Laboratories in Coimbatore and Madurai.

The laboratories are fully equipped with necessary machineries, equipments and instruments for conducting the parametric tests as per the procedures postulated in the relevant

Bureau of Indian Standards. The test facilities adorning the Laboratories include the following for quality and conformity to Indian Standards:

- ❖ Construction materials like Ordinary Portland cement, Sulphate Resistant Portland cement, steel rods, sand, coarse aggregates, bricks and concrete cubes.
- ❖ Filter media, Hollow blocks, Paver blocks.
- ❖ PVC Pipes, UPVC Pipes, HDPE pipes, GI pipes, DI pipes and Stoneware pipes.
- ❖ Mix design of concrete for the M30 grade
- ❖ Electric Cables.

The qualitative assessment of each project has been improved by testing the materials in the TWAD Board Lab. The materials received

from local bodies and private agencies are also tested for quality in these laboratories.

4,716 samples have been tested in the 4 laboratories during the financial year 2016-17.

### **6.15 Management Information System**

To manage data flow relating to all schemes, Project Management, Financial Accounting, Human Resource, Billing Tamil Nadu Water Supply and Drainage Board has implemented TWAD Board integrated E-Governance System (TWAD NEST). Information about the physical and financial progress and performance of all water supply, sewerage and maintenance schemes and recharge structures are provided online. The quantity of water pumped from the Head works of various water supply schemes maintained by TWAD Board is uploaded daily and monitored through online.

For the purpose of planning and design in water supply distribution network, sewer network design and analysis, structural analysis. CAD softwares are used by TWAD Board.

For periodical review of works executed by TWAD Board all over the state, Head office, five Chief Engineers offices in Vellore, Madurai, Thanjavur, Coimbatore, Dharmapuri and four Superintending Engineers offices in Cuddalore, Trichy, Salem, Tirunelveli are interconnected through Video Conference (VC) System. TWAD Board is well equipped to monitor the functions and Schemes in an effective manner.

## **7. Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL)**

The Government of Tamil Nadu, along with private sector participation, established a public limited company in the name of Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL), with an authorized capital of ₹2.00 crore. The paid-up share capital of the company is ₹1 crore, of which a sum of ₹49 lakh is contributed by the Government of Tamil Nadu. ICICI Bank Limited, Housing Development Finance Corporation Limited and IL & FS Financial Services Limited, are the other shareholders.

The Tamil Nadu Urban Development Fund, Water and Sanitation Pooled Fund and various Government Grant Funds are managed by TNUIFSL. Project development, project appraisal, project structuring, resources

mobilization and fund management are the main functions undertaken by TNUIFSL.

The company provides a complete end-to-end solution for the promotion of urban infrastructure development, from concept to commissioning of the projects. TNUIFSL has been operating on profit since its establishment, with regular dividends being declared and paid.

### **7.1 Tamil Nadu Urban Development Fund (TNUDF)**

The Government of Tamil Nadu, established a Trust named Tamil Nadu Urban Development Fund (TNUDF) with private sector participation by ICICI Bank Limited (ICICI), Housing Development Finance Corporation Limited (HDFC) and IL & FS Financial Services Limited (IL & FS).

The vision of TNUDF is “to be a sustainable financial intermediary that enhances the flow of private capital to the urban sector in the State of

Tamil Nadu and facilitates urban local bodies to become capable and sustainable organizations, sensitive to stake holders in providing the highest quality of urban services.”

The mission of TNUDF is “to contribute to improvement in urban quality of life in Tamil Nadu by facilitating efficient urban infrastructure asset creation and provision of urban services through innovative project development, independent appraisal and sustainable financing.”

### **7.1.1 Objectives of TNUDF**

The objectives of TNUDF are as follows:

- Finance urban infrastructure projects, which improve the living standards of the urban population.
- Facilitate private sector participation in infrastructure through joint venture and public –private partnership.

- Improve the financial management of urban local bodies and enabling them to access debt finance from markets.

TNUDF provides finance to Urban Local Bodies for implementation of basic service projects such as roads, bridges, storm water drains, sewerage & sanitation, water supply, solid waste management, and commercially viable remunerative projects such as bus stands and market complexes.

TNUDF is managed by a corporate trustee viz., Tamil Nadu Urban Infrastructure Trustee Company Limited (TNUITCL) and is operated by a Fund Manager viz., the Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL).

A sum of ₹142.91 crore has been contributed by Government of Tamil Nadu and a sum ₹56.69 crore has been contributed by ICICI,



HDFC and IL & FS to TNUDF. The total corpus of the Fund is ₹199.60 crore.

## 7.2 External Aided Projects

Two external lines of credit are being operated by TNUDF, viz, the Sustainable Municipal Infrastructure Financing–Tamil Nadu (SMIF-TN) Programs (Phase-II-Part-1 and Part-2) assisted by KfW, and the World Bank assisted Tamil Nadu Sustainable Urban Development Project (TNSUDP). The total fund available under the above lines of credit is ₹5286.55 crore is detailed below:

### Size of External Lines of Credit

(₹ in crore)

Sl. No.	Components	TNSUDP ₹ In crore	SMIF-TN		Total
			Phase-II - Part 1	Phase-II - Part 2	
1	Loan to ULBs	1225.92	289.08	407.15	1922.15
2	Capital Grants to ULBs	1225.92	289.08	407.15	1922.15
3	Grant to Model Cities	389.48	0	0	389.48
4	Technical Assistance Grant	344.80	0	22.39	367.19
5	Bonds and	644.88	0	40.70	685.58

Sl. No.	Components	TNSUDP ₹ In crore	SMIF-TN		Total
			Phase-II - Part 1	Phase-II - Part 2	
	others				
	Total	3831.00	578.16	877.39	5286.55

### **7.2.1 KfW (German Funding Agency) assisted Sustainable Municipal Infrastructure Financing–Tamil Nadu (SMIF – TN) Program**

The Sustainable Municipal Infrastructure Financing –Tamil Nadu (SMIF–TN) Program with the assistance of KfW, the German funding agency, was launched with the objective of contributing towards the improvement of environment and preservation of natural resources and the living conditions of the urban population.

The Program has two Phases (Phase-I and Phase-II), of which the Phase –I Program was completed in December 2015. The Phase–II Program has two parts i.e., Part -1 and 2.

The project implementation period of SMIF–TN-II-Part-1 Program is from December 2012 to June 2018. The total outlay of the Program is ₹578.16 crore (Euro 80 million). This will be provided as loan and capital grant to ULBs for implementing urban infrastructure projects.

The project implementation period of SMIF–TN-II-Part-2 Program is June 2014 to December 2019. The total outlay of the Program is ₹877.39 crore (Euro 107.75 million), of which ₹814.30 crore (Euro 100 million) will be provided as loan and capital grant to ULBs for implementing urban infrastructure projects. A sum of ₹22.39 crore (Euro 2.75 million) will be provided for strengthening the technical capabilities of the ULBs. A sum of ₹40.70 crore (Euro 5 million) has been earmarked as loan for Water and Sanitation Pooled Fund to facilitate

mobilization of resources by issue of Municipal Bonds in the capital market.

A sum of ₹1,389.53 crore has been committed for 33 projects under SMIF-TN-II-Part-1 and Part-2 Programs.

### **7.2.2 World Bank assisted Tamil Nadu Sustainable Urban Development Project (TNSUDP)**

The World Bank assisted “Tamil Nadu Sustainable Urban Development Program (TNSUDP)” was launched in March 2015 with an outlay of ₹3,831 crore (US\$ 600 million), of which the World Bank assistance is ₹2,554 crore (US \$ 400 million). The project implementation period is from June 2015 to March 2022. A sum of ₹2,413.91 crore has been committed for 16 projects under TNSUDP.

### **7.2.3 Tamil Nadu Urban Flagship Investment Program (TNUFIP) assisted by Asian Development Bank (ADB)**

A proposal was sent to Government of India for seeking financial assistance from Asian Development Bank (ADB) for the newly proposed Tamil Nadu Urban Flagship Investment Program (TNUFIP) with a total outlay of ₹4790 crore (US \$ 715 million). Out of this ADB's assistance will be about ₹3350 crore (US \$ 500 million). The Government of India have recommended the proposal to ADB during November 2016. The appraisal for funding is under process by ADB and will be completed during the year 2017-18.

### **7.3 Water and Sanitation Pooled Fund (WSPF)**

The Government of Tamil Nadu have created a Trust in the name Water and Sanitation Pooled Fund (WSPF) to cater to civic

infrastructure needs like water and sanitation in small and medium towns by raising resources from capital markets. This Trust has been created as a not-for-profit entity.

The objectives of WSPF are:

- To provide financial assistance for setting up infrastructure projects,
- To mobilize resources from the capital market under pooled finance structure,
- To facilitate the participation of private sector in water and waste water sectors through direct investment and public private partnership,
- To enable urban local bodies to access debt finance from markets and
- To act as the Nodal Agency on behalf of Central and / or State Government for water, sanitation and / or any other infrastructure projects.

Taxable and Tax-Free Bonds for a sum of ₹222.30 crore have been mobilized by WSPF as given below:

Sl.No.	Details	₹ in crore
1	<b>9.20%, 15 year Non-Convertible Redeemable Bonds</b> Taxable bonds issued by pooling the requirements of 13 ULBs in the year 2002.	30.41
2	<b>7.25%, 10 year Tax Free Non-Convertible Redeemable Bonds under PFDF Scheme</b> Tax free bonds (first tranche) issued by pooling the requirements of 7 ULBs under the Pooled Finance Development Fund (PFDF) scheme of Government of India in the year 2008.	6.70
3	<b>7.50%, 10 year Tax Free Non-Convertible Redeemable Bonds under PFDF Scheme</b> Tax free bonds (second tranche) issued by pooling the requirements of 7 ULBs under the PFDF scheme of Government of India in the year 2010.	83.19
4	<b>10.60%, 10 year Non-Convertible Redeemable Bonds</b> Taxable bonds (first tranche) issued by pooling the requirements of 10 ULBs in the year 2012 under SMIF-TN Program	51.00
5	<b>8.71%, 10 year Non-Convertible Redeemable Bonds</b> Taxable bonds (second tranche) issued by pooling the requirements of 10 ULBs in the year 2013 under SMIF-TN Program	51.00
	Total	222.30

## **7.4 Chennai Mega City Development Mission**

The Chennai Mega City Development Mission (CMCDM) was launched by the Government of Tamil Nadu and the Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) was designated as the Nodal Agency for CMCDM. Under CMCDM, funds will be made available to Greater Chennai Corporation and Chennai Metropolitan Water Supply and Sewerage Board to implement various urban infrastructure and basic services projects like roads, storm water drains, street lighting, water supply and sanitation in Chennai and its suburban areas. The fund is provided through budgetary provision every year by the Government.

The projects costing ₹3,209.16 crore have been sanctioned under CMCDM thus far. A capital grant of ₹2,492.10 crore and a technical



assistance grant of ₹7.90 crore have been committed under this mission. A sum of ₹1,853.55 crore has been disbursed to both Greater Chennai Corporation and Chennai Metropolitan Water Supply and Sewerage Board & for Consultancy and Fees as given below:

**Funds committed under CMCDM**

(₹ in crore)

<b>Sl. No</b>	<b>Name of the Agency</b>	<b>Project Cost</b>	<b>Grant Committed</b>	<b>Grant Disbursed</b>
1	Greater Chennai Corporation	1487.55	1274.24	1175.73
2	Chennai Metropolitan Water Supply and Sewerage Board	1721.61	1217.86	675.03
3	Consultancy and Fees	7.90	7.90	2.79
	Total	3217.06	2500.00	1853.55

## **8. CHENNAI RIVERS RESTORATION TRUST**

The State of Tamil Nadu is committed to improving the ecological condition of rivers and water bodies. The Chennai Rivers Restoration Trust (CRRT) was set up to pursue necessary action in this direction. The Government of Tamil Nadu have directed Chennai Rivers Restoration Trust to carry out the functions of planning, coordinating and monitoring activities for the restoration of various rivers and water bodies such as the Cooum, Adyar, Kosasthalaiyar rivers, the Buckingham Canal along with other smaller canals and water bodies in the Chennai Metropolitan Area. To achieve the goals set for it, Chennai Rivers Restoration Trust has taken up various initiatives by following an integrated approach, and involving various line departments in its eco-restoration projects and initiatives.

## **8.1 Eco-Restoration of Adyar Creek**

The Government of Tamil Nadu conceived an ambitious and pioneering project in wetland conservation in the restoration of 358 acres Adyar Creek and Estuary. During Phase I, the restoration activities were undertaken in 58 acres of Adyar Creek. These activities were started in 2008 and completed in 2010. The major restoration activities undertaken are: (i) to increase the water spread and tidal interaction area (ii) plantation of native plants such as Tropical Dry Evergreen Forest species, mangroves, its associates and reeds. (iii) landscaping for interactive environmental programmes.

The eco-park now serves as a hub for environmental education and research activities. Regular environmental education programmes are being conducted, particularly for school children, in order to impart knowledge on the

environment and the need to protect it. 62,455 students and

3,832 teachers from 853 schools have visited the eco-park and experienced the concept of eco restoration upto 31<sup>st</sup> March 2017. Corporate Social Responsibility (CSR) funds are received annually from TNUIFSL for conducting education programmes at Adyar Eco-park.

The Eco-Park is open to interested general public on every Tuesday, Thursday and Saturday, so as to impart environmental awareness and showcase the efforts taken by Government in the field of conservation and protection. So far, a total of 2449 visitors have visited the Eco-park between July, 2014 and 31<sup>st</sup> March, 2017.

Regular ecological and biodiversity monitoring is being taken up to evaluate the impact of restoration. The restoration process of

Adyar Eco-park has to comply with Designated-Best-Use Class 'D', which, according to the CPCB guidelines, would allow propagation of wildlife and fisheries. The results indicate that the current

water quality is in class 'D' - Designated- Best-Use that allows propagation of wildlife and fisheries. The details of faunal diversity in Adyar Eco-Park are detailed below:

<b>Fauna</b>	<b>2007-08</b>	<b>2009-10</b>	<b>2011-12</b>	<b>2013-14</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>
Molluscan	-	-	-	6	6	6	8
Crabs	-	-	4	9	9	9	9
Dragonflies	-	-	12	15	17	19	25
Butterflies	-	-	51	55	56	60	73
Fishes	14	27	27	10	10	6	10
Amphibian	7	10	10	10	10	10	10
Reptiles	19	19	19	19	19	19	19
Birds	88	90	98	100	97	99	103
Mammals	13	13	13	15	15	16	16
<b>Total</b>	<b>141</b>	<b>159</b>	<b>234</b>	<b>239</b>	<b>239</b>	<b>244</b>	<b>273</b>

## **8.2 Eco-Restoration of Adyar Estuary**

To restore the ecologically fragile ecosystem of Adyar Creek and Estuary, Phase-II of the eco-restoration plan was prepared with important activities like removing the debris, plastics and sludge from the creek, plantation of mangroves and native species, implementing bioengineering techniques to stabilize bunds and to enhance the biodiversity in the Adyar Creek and Estuary. The Government of Tamil Nadu have accorded administrative sanction to restore 300 acres of Adyar Creek and Estuary at an estimated cost of ₹24.93 crore. All the restoration activities proposed above have now been completed. Removal of exotic and invasive species like *Prosopis juliflora*, followed by bund stabilization removal of debris and plastics to enhance tidal interaction and to increase the water spread in the degraded Creek has also been completed; about 57,000 mangroves and

35,000 terrestrial saplings have been planted. All the project activities have now been completed in total and regular maintenance work is being carried out.

### **8.3 Integrated Cooum River Eco-Restoration Plan**

The Cooum river originates from a village with the same name in Tiruvallur district, about 70 km upstream of Chennai. It drains into the Bay of Bengal, south of Fort St George, just downstream of Napier Bridge. The eco restoration plan for the stretch of the river between Paruthipattu and the river mouth was prepared and the major components proposed are interception and diversion of wastewater, solid waste management, river channel improvement, rehabilitation and resettlement, biodiversity management and riverfront development.

This eco-restoration river project is proposed to be implemented in three phases. The Short Term Plan covers a period of three years which will see the completion of the largest number of sub-projects. The Short term proposals were proposed by line departments for an amount of ₹1,646.52 crore consisting of 60 sub projects. The Government of Tamil Nadu accorded administrative sanction to Chennai Rivers Restoration Trust for implementing Sixty (60) sub-projects committed under Phase 1 for a period of 3 years at an estimated cost of ₹604.77 crore.

Various line Departments viz., Public Works Department, Greater Chennai Corporation, Commissionerate of Municipal Administration, Directorate of Rural Development and Panchayat Raj, Chennai Metropolitan Water Supply and Sewerage Board, Tamil Nadu Slum Clearance Board and Chennai



Rivers Restoration Trust have commenced the implementation of the sub-projects. Out of ₹604.77 crore, works worth ₹144.48 crore have been initiated. Letters of acceptance have been issued by the line departments for works worth ₹74.40 crore. Tender process for projects worth ₹146.96 crore has also been initiated. So far, ₹67.41 crore have been disbursed to the implementing agencies.

#### **8.4 Master Plan for Phase III Adyar River Restoration from Origin to Mouth**

Adyar river has its origin at Adhanur lake near Guduvancheri. Surplus water from Chembarambakkam lake joins it near Thiruneermalai giving it shape as a river and flows 42 km through the districts of Kanchipuram and Chennai. It confluences with the Bay of Bengal near Adyar. Adyar river has been under heavy anthropogenic disturbance for a very long time and is highly degraded. The

ecorestitution plan for the stretch of the river from Adhanur lake to the river mouth has been prepared and the major components proposed are sewage management, solid waste management, river channel improvement, rehabilitation and resettlement, biodiversity management and riverfront development.

### **8.5 Master Plan for Waterways and Water bodies in Chennai Metropolitan Area**

In order to have a holistic approach towards restoring the degraded water bodies & waterways within Chennai Metropolitan Area, a Master Plan for Restoration and Protection of Water bodies and Waterways has been prepared by CRRT. In this study, about 200 water bodies have been identified and concept plans prepared for 38 lakes.

## 8.6 Detailed Project Report for Restoration and Protection of Water bodies and Waterways

The Government of Tamil Nadu have taken up an initiative to revive and rejuvenate the following water bodies in Chennai Metropolitan Area and Detailed Project Reports are being prepared, to this end.

Narayanapuram Eri, Zamin Pallavaram Periya Eri and Keelkattallai Eri	Projects are proposed under the World Bank funded "Tamil Nadu Sustainable Urban Development Project (TNSUDP)" for implementation
Paruthipattu Lake, Avadi	DPR is completed
Kadapakkam Lake, Nesavalur Nagar Lake Kolathur Lake, Velacherry Lake Nanmangalam Eri, Kovilambakkam Eri	Draft DPR is completed
Plugging of outfalls, Interception & Diversion of Sewage, Solid Waste Management and R&R in Major drains in Cooum Basin	DPR preparation is under progress

Plugging of outfalls, Interception & Diversion of Sewage, Solid Waste Management and R&R in Major drains in Adyar Basin	DPR preparation is under progress
Restoration of Buckingham Canal in Chennai Metropolitan Area from Ennore Creek to Muttukadu Backwaters and all Major Drains draining into Buckingham Canal	DPR preparation is under progress

## **9. TAMILNADU URBAN FINANCE AND INFRASTRUCTURE DEVELOPMENT CORPORATION**

TamilNadu Urban Finance and Infrastructure Development Corporation Ltd (TUFIDCO) was created with the objective to provide financial assistance and guidance to Urban Local Bodies for their development schemes on 21.03.1990 under Companies Act, 1956. TUFIDCO is acting as a Mission Directorate for the Government of India's flagship programme of Smart Cities Mission and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Scheme. The following Government programmes / schemes are also implemented by TUFIDCO as a nodal agency:

1. Jawaharlal Nehru National Urban Renewal Mission – Urban Infrastructure and Governance (JnNURM-UIG).

2. Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT).
3. Urban Infrastructure Development Scheme for Satellite Towns (UIDSST).
4. Metropolitan Infrastructure Development Fund (MIDF).
5. Integrated Urban Development Mission (IUDM).

TUFIDCO is also functioning as a Fund Manager for Entertainment Tax Compensatory Fund (ETCF), Education Fund (Corporation / Municipality School Student Fund), Infrastructure Gap Filling Fund (IGFF) and Operation and Maintenance Gap Filling Fund (O&MGFF).

### **9.1 Smart Cities Mission**

In order to create world class infrastructure, the Government of India have

launched the Smart Cities Mission to develop 109 cities all over the country during June 2015. Government of Tamilnadu has proposed all 12 Corporations under this programme.

The mission period for the programme is 5 years (2015-2020). Government of India contributes ₹500 Crore per city. The Government of Tamil Nadu has also proposed to contribute ₹500 Crore per city. The Charman and Managing Director, TUFIDCO is nominated as Mission Director under this scheme.

The Government of India have selected 20 cities nationwide in Round-1 which includes Greater Chennai and Coimbatore Corporations in Tamil Nadu to be taken up for development as Smart Cities for the year 2015-16. Out of 40 cities selected throughout India in Round-2 (2016-17), Madurai, Salem, Thanjavur and Vellore Corporations have also been selected in Tamil Nadu. It is expected that the Government

of India would sanction remaining 49 Cities during the year 2017-18. As suggested by Government of India, the remaining 6 Cities i.e., Tiruchirapalli, Tiruppur, Tirunelveli, Thoothukudi, Erode and Dindigul have improved their "Smart Cities Proposals" for third round competition and submitted the same to Government of India on 31<sup>st</sup> March, 2017.

As per the Smart Cities Mission guidelines, the Special Purpose Vehicles [SPV] have been formed in Chennai, Coimbatore, Madurai, Salem, Vellore and Thanjavur to implement Smart Cities projects. TUFIDCO has formed 7 verticals in these Smart Cities associating the experts, NGOs and academicians and finalised the projects to be taken up in ideation phase.



## **9.2 ATAL MISSION FOR REJUVENATION AND URBAN TRANSFORMATION (AMRUT)**

The Atal Mission for Rejuvenation and Urban Transformation [AMRUT] scheme was launched by the Government of India during the year 2015 covering the following thrust areas:

1. Water supply
2. Sewerage facilities and septage management
3. Storm Water Drains
4. Pedestrian, non-motorized and public transport facilities, parking Spaces.
5. Creating and upgrading green spaces, parks and recreation centers, especially for children.

**The following towns are selected under this scheme:**

<b>Sl.No</b>	<b>Name of the ULBs</b>	<b>Sl.No</b>	<b>Name of the ULBs</b>
1.	Chennai Corporation	15	Tambaram
2.	Coimbatore Corporation	16	Cuddalore
3.	Madurai Corporation	17	Kancheepuram
4.	Trichy Corporation	18	Erode Corporation
5.	Salem Corporation	19	Tiruvannamalai
6.	Tirunelveli Corporation	20	Kumbakonam
7.	Tiruppur Corporation	21	Rajapalayam
8.	Avadi	22	Pudukottai
9.	Thoothukudi Corporation	23	Hosur
10.	Nagercoil	24	Ambur
11.	Thanjavur Corporation	25	Karaikudi
12.	Pallavapuram	26.	Nagapattinam
13.	Dindigul Corporation	27.	Velankanni
14.	Vellore Corporation	28.	Rameswaram

Chairman and Managing Director,  
TUFIDCO is nominated as Mission Director under  
this scheme

### 9.2.1 Financial Pattern

The funding pattern of the Government of India and State Government are as follows:

SI No.	Population	Govt. of India Share – Grant	State Government Share – Grant	ULB's share
1	Cities with more than 10 lakhs population	33.33%	20%	46.67%
2	Cities with below 10 lakhs population	50%	20%	30%
3	Green space (all AMRUT cities)	50%	20%	30%

### 9.3 JAWAHARLAL NEHRU NATIONAL URBAN RENEWAL MISSION Urban Infrastructure and Governance (UIG)

Three mission cities, namely, Chennai, Coimbatore and Madurai and their Urban Agglomerations have been taken up under UIG for a period of 9 years i.e, from the year 2005 to 2014. Under this Sub- Mission, 48 projects at an estimated cost of ₹5250.15 crore have been sanctioned by Government of India.

(₹ in Crore)

Name of the Cities	No. of Projects sanctioned	Approved Cost	GOI Share	GoTN Share	ULB/parastatal agencies share
Chennai	35	3,585.43	1,294.40	533.42	1,757.61
Madurai	8	838.52	419.26	167.70	251.56
Coimbatore	5	826.20	413.10	165.24	247.86
Total	48	5,250.15	2,126.76	866.36	2,257.03

Out of 48 projects sanctioned, 34 projects have been completed and the remaining 14 projects are at various stages of implementation.

### **9.3.1 Transition Phase Projects**

A total of 17 projects have been sanctioned by the Government of India during the Transition phase of the JnNURM – UIG at an approved cost of ₹867.83 crore.

## **9.4 Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT)**

The objective of UIDSSMT is to improve infrastructure facilities in all the towns except 67 Mission cities covered under the JnNURM-UIG component. Under this scheme, 122 projects have been sanctioned at a cost of ₹882.73 crore

### **9.4.1 Transition Phase Projects**

The Government of India have sanctioned 13 projects in the Transition phase of the UIDSSMT at the cost of ₹507.41 crore

## **9.5. Urban Infrastructure Development Scheme for Satellite Towns (UIDSST)**

The Government of India have launched UIDSST with the purpose of creating infrastructure facilities in Satellite Towns situated near to large urban centres. Sriperumbudur Town has been approved under the scheme in Tamil Nadu. The projects sanctioned by the Government of India under the scheme are as follows:

(₹In Crore)

<b>S.No.</b>	<b>Name of the Project</b>	<b>Approved Project Cost</b>
1.	Water Supply schemes	40.71
2.	Under Ground Sewerage	56.22
3.	Solid Waste Management	4.43
	Total	101.36

Among the sanctioned 3 projects, Solid waste management project has been completed and the remaining 2 projects are under implementation.

## **9.6 Metropolitan Infrastructure Development Fund (MIDF)**

An amount of Rs.2090 crore created as Revolving Fund from the Megacity programme is the source fund for the Metropolitan Infrastructure Development Fund. The objective of the scheme is to extend financial assistance to develop infrastructure in Chennai Metropolitan

Area. 34 projects have been sanctioned under MIDF at an estimated cost of ₹4,342.65 crore. Out of 34 projects sanctioned, 22 projects have been completed and the remaining 12 projects are in progress.

### **9.7 TUFIDCO Infrastructure Funding Scheme**

TUFIDCO has created an Infrastructure Funding Scheme aiming to finance infrastructure projects in Urban Local Bodies and Government Agencies. The source fund for this scheme is from Share Capital, Reserves and Surplus of TUFIDCO and loans from Banks.

During the year 2016-17, 3 projects have been sanctioned at an estimated cost of ₹212.08 crore.

(₹ in Crore)

SI No	Name of the Project	Project Cost	TIFS Loan	ULB Share
1	TIDEL Park, Coimbatore - Take over finance	171.00	171.00	---
2	Shopping Complex - Krishnagiri Municipality	1.35	1.21	0.14
3	Renovation existing sewerage system to Madurai Corporation	39.73	39.73	---
	Total	212.08	211.94	0.14

### **9.8. Integrated Urban Development Mission (IUDM)**

The State Government has launched a flagship programme namely “Integrated Urban Development Mission” (IUDM) during the year 2011 with the objective of improving Urban Infrastructure facilities.

A total of 13,445 Projects were sanctioned (fully funded/partly funded) to address the infrastructure needs of the Urban Local Bodies at



the estimated cost of ₹10,773.22 crore. The details of project sanctioned are as follows:

Sector	Total No. of works	₹ in crore		
		Project cost	ULB Share / Others	IUDM share sanctioned
Water Supply	1061	3900.83	2558.47	1342.36
Sewerage	66	4589.96	3587.92	1002.04
Roads	3,713	923.13	82.51	840.62
Storm Water Drains	2,078	366.42	63.24	303.18
Solid Waste Management	1,091	231.30	4.93	226.37
Street Lights	2,963	551.80	315.87	235.93
Eradication of Open Defecation	2,066	160.10	105.65	54.45
Others	407	49.68	6.44	43.24
Total	13,445	10,773.22	6,725.03	4,048.19

Out of 13,445 Projects sanctioned, 12,974 Projects have been completed and the remaining projects are under implementation.

## **9.9 Fund Manager for the State Government Schemes**

The Government of TamilNadu has formulated Entertainment Tax Compensatory Fund, Education Fund (Corporation / Municipality

School Student Fund), Infrastructure Gap Filling Fund (IGFF) and Operation and Maintenance Gap Filling Fund (O&MGFF) with the aim of improving the Infrastructure facilities in Urban Local Bodies. The Government has appointed TUFIDCO as the Fund Manager for the above mentioned schemes.

An amount of ₹236.68 crore has been released under IGFF and ₹105.07 crore under O&MGFF in the year 2016-17.

## **10. New Tirupur Area Development Corporation Limited**

New Tirupur Area Development Corporation Limited (NTADCL), a Special Purpose Vehicle, was formed by Government of Tamilnadu to provide Water Supply and Sewerage facility exclusively to Tiruppur Municipality (now Corporation), adjacent areas and industries. A Concession Agreement was signed between the Government of Tamilnadu, Tiruppur Municipality and NTADCL to implement a 185 million litre per day (mld) water supply project mainly to meet the requirements of hosiery and related industries in and around Tiruppur. This project was the first Public Private Partnership Water Supply and Sewage project in the country and the foundation stone was laid on 20/06/2002 and the project was inaugurated in February 2006.

Cost of the project was ₹1,023 crore. The original equity contributed by 15 Institutions was ₹322.70 crore. The senior debt funded by 19 financial institutions was ₹613.80 crore and subordinate debt was ₹86.50 crore.

Under the project, 38.957 MLD of water is supplied to Tiruppur Corporation for domestic usage and around 18.26 MLD of water being supplied to 8 Village Panchayats and about 600 rural way side habitations belonging to 5 Panchayat Unions. A domestic sewerage system in major parts of Tiruppur Corporation has also been completed and functioning. Presently, around 7.5 MLD of sewage received from 15,246 sewer connections is being treated. Low cost sanitation facilities (31 sanitary complexes) have also been provided for the urban poor.

The water demand for industries in Tiruppur had substantially reduced since February 2011 consequent to closure of dyeing

and bleaching industries due to Hon'ble Madras High Court Order dated 31.01.2011 and subsequent introduction of common effluent treatment facilities resulting in reuse of water. Notwithstanding this, NTADCL has been maintaining its committed quantum of supply to the domestic sector both to Tiruppur Corporation and wayside villages.

The poor financial situation of New Tirupur Area Development Corporation Limited, resulting from low offtake of water by industries, was tackled in 2011-12 through a Corporate Debt Restructuring (CDR) package, under which the lenders rescheduled the debt, reduced the interest rate and converted 15 per cent of the debt into equity and the Government assured to buy up to 100 MLD of water additionally for domestic usage from the company. Presently, around 54 MLD of water is being supplied additionally to Tiruppur Corporation.

Government also agreed for a capital infusion by way of equity share capital of ₹150 crore.

Government had permitted the Company to expand its water distribution network in selected area outside TLPA. Accordingly, Company had identified customers in Palladam in Tiruppur district and Perundurai in Erode district. In addition, TWAD Board has implemented three schemes to cover 461 habitations under 68 Village Panchayats in Erode, Perundurai, Chennimalai and Uthukuli Unions of Erode and Tiruppur Districts. These schemes are implemented in Konavaikal, Gangapuram, Vavikadai, Saralai, Perundurai, Vijaya mangalam, Pallagoundanpalayam, Chengappalli, Sarkarperiapalayam and Agarharaperiapalayam resulting in additional domestic consumption of around 11 MLD. Hence 65 MLD of water is being supplied additionally for domestic usage.

The industrial / institutional water supply is currently 35 MLD and is slowly picking up.

The assistance provided by the Government of Tamil Nadu in the form of equity capital infusion, purchasing additional quantity of water of around 65 MLD by Tiruppur Corporation and other local bodies the decision of allowing the company to meet the industrial demand outside the TLPA by increasing the project service area has paved the way for the Company to revive itself and turn profitable from 2015-16 onwards. This has enabled the Company to serve the public in the area continuously.

NTADCL has prepared a Detailed Project Report (DPR) to further augment the water supply and sewerage facilities in Tiruppur Corporation.

## **11. Tamil Nadu Water Investment Company Limited**

Government of Tamil Nadu and Infrastructure Leasing and Financial Services Limited (IL&FS), formed Tamilnadu Water Investment Company Limited (TWIC) as a Special Purpose Vehicle, under Companies Act, 1956 as an investment Company to promote the first PPP in water sector, namely New Tirupur water project (185 MLD, ₹1,023 crore) an Integrated Water Supply and Sewerage Project . TWIC has expertise ranging from urban water and sewerage systems, desalination, industrial effluent management, recycling and facilitates in developing projects from concepts to implementation through a model aimed at reducing life cycle costs within a sustainable framework .



New Tirupur Area Development Corporation Limited is promoted by Tamil Nadu Water Investment Company Limited (TWIC). Government of Tamil Nadu holds 46% of the share capital in the TWIC.

The Company has over the years developed leadership in Industrial effluent management and Urban water management. It developed expertise in unique Zero liquid discharge technology (ZLD) and Brine Reuse technology. The company has been engaged as Project Management Consultant by Government of Tamil Nadu for the establishment of Textile Parks with ZLD based CETPs at Kadayampatti, Sri Bhavani, Perundurai SIPCOT in Erode District, Green Kaveri Green Environmental Company at Pallipalayam and Kumarapalayam at Namakkal District. It had undertaken water supply DPR for Tambaram through TNUIFSL, Water Source Improvement for Gobichettipalayam, Energy

Audit for TUFIDCO AMRUT Cities, 24x7 Water Supply DPR for Vijayawada Municipal Corporation, Source to tap 24x7 Water supply DPR for 2 cities in Jharkhand state namely Chotta govindpur and Bagbera, Water Security Policy and demand assessment with GIS Mapping and development of dash board for Gujarat Industrial Development Corporation, Dahej.

In addition, the Company has been engaged as PMC by CMWSSB for construction of TTRO plants at Kodungaiyur and Koyambedu and for the water supply improvement scheme under AMRUT for Thanjavur Municipal Corporation. In addition the company has been engaged as PMC for Vishtec Tannery CETP by CLE, Chennai.

The Company provides Operation & Maintenance services to Seven Zero Liquid Discharge (ZLD) Common Effluent Treatment

Plants (CETPs – Arulpuram, Rayapuram, Murugampalayam, Chinnakarai, Kasipalyam, Kunnakalpalayam, S.Periyapalayam) in Tirupur and water management Operations including desalination, waste water and recycle to ITPCL, Cuddalore and BARC Kalpakkam.

The Government of Tamil Nadu have decided that the expertise gained by the Company in the area of water supply and waste water management projects should be utilized and have ordered to nominate the Tamilnadu Water Investment Company Limited as Programme Management Agency (PMA) on behalf of the Government of Tamilnadu for the following:

- a. Dedicated Agency for development and operation and maintenance of Common Effluent Treatment Plants.

b. Industrial Water Supply through reuse of sewerage water and desalination.

The company has successfully bagged orders for the preparation of DPRs for 2 CETPs with Zero Discharge at Sri Bhavani and Kadayampatti for catering to Micro-dyers to be funded by the Government of India under the IPDS Scheme.

The Company has been engaged under the National Mission for Clean Ganga for 4 Textiles clusters and one leather cluster at Jajmau in Uttar Pradesh. The company has been engaged by Haryana Urban Development Authority for preparation of DPRs for implementing ZLD systems in their Textiles clusters in Panipat. The company has also conducted full diagnostic and feasibility for Konabari Textile Cluster, Bangladesh through World Bank Group-International Finance Corporation.

The turnover of the company from Operation and Maintenance Contract has gone up from ₹18.89 crore in the year 2015-16 to ₹22.14 crore in the year 2016-17. Further, the turnover from consultancy services has gone up from ₹5.16 crore in 2015 – 16 to ₹6.83 crore in 2016 – 17.

**S.P. VELUMANI**

Minister for Municipal Administration,  
Rural Development and  
Implementation of Special Programme