

## **DEMAND No. 34**

### **MUNICIPAL ADMINISTRATION AND WATER SUPPLY DEPARTMENT**

#### **Policy Note - 2016-2017**

#### **1. Introduction**

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 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, employing new, relevant green technologies will be the key to meet these challenges.

The Municipal Administration and Water Supply Department is responsible for the development of urban areas in the State and for ensuring provision of water supply to all the areas of the State. The Greater Chennai Corporation, the Commissionerate of Municipal Administration and the Directorate of Town Panchayats are an integral part of this Department and are entrusted with the responsibility of planning, financing, implementing and monitoring projects which are aimed at attaining service level benchmark.

The Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) and Tamil Nadu Water Supply and Drainage Board (TWAD Board) are responsible for the provision of Water Supply and Underground Sewerage facilities. The New

Tiruppur Area Development Corporation Limited (NTADCL) caters to the water supply and industrial water needs of Tiruppur and nearby areas.

**The vision of the Hon'ble Chief Minister Puratchi Thalaivi J Jayalalitha** is to make Tamil Nadu '**numero uno**' among the Indian States. '**Vision Tamil Nadu 2023**' document unveiled by the Hon'ble Chief Minister envisages the improvement of urban infrastructure, with a focus on the development of ten World Class Cities in Tamil Nadu. These cities in turn will become the nuclei and engines of economic growth, thereby facilitating regional and balanced development across the State. **The Hon'ble Chief Minister's vision** is to provide piped and pressurized 24x7 **water supply** to all the citizens and ensure that 100% of them have access to safe sanitation

including **open defecation free and garbage free** environment.

### **I. Population:-**

The Urban demographic scenerio is captured in the following table

<b>Sl. No.</b>	<b>Categories</b>	<b>No's</b>	<b>Area in Sq.km</b>	<b>Area %</b>	<b>Popula tion in lakhs</b>	<b>Urban Popul ation %</b>
1	Greater Chennai Corpora tion	1	426	4.01	67.27	21.34
2	Other Corpora tions	11	1278.31	12.05	80.66	25.59
3	Municipali ties	124	2516.05	23.72	86.39	27.41
4	Town Panchayats	528	6388.20	60.22	80.90	25.66
<b>Total</b>		<b>664</b>	<b>10608.56</b>	<b>100</b>	<b>315.22</b>	<b>100</b>

## II. Elected Representatives:

The following table gives the position of Elected representatives in the Urban Local bodies.

SI.No.	Categories	Mayors/ Chairmans	Councillers
1	Greater Chennai Corporation	1	200
2	Other Corporations	11	719
3	Municipalities	124	3,613
4	Town Panchayats	528	8,288
<b>Total</b>		<b>664</b>	<b>12,820</b>

## III. Finance of the Urban Local Bodies:

The following table illustrates the financial position of various categories of the Urban Local Bodies.

SI.No.	Sources	GCC	Other Corporations	Municipalities	Town Panchayats	Total
1	Own Sources	1031.15	954.60	1186.00	490.97	3662.72

2	State Government Devolution Fund	408.53	654.15	865.16	827.62	2755.46
3	14 <sup>th</sup> Central Finance Commission Grant	117.48	185.32	245.11	229.11	777.02
4	Grants From State / Central Schemes	709.02	341.96	402.09	591.95	2045.02
5	Loans	159.78	174.28	181.08	---	515.14
<b>Total</b>		<b>2425.96</b>	<b>2310.31</b>	<b>2879.44</b>	<b>2139.65</b>	<b>9755.36</b>

With the closure of Tamil Nadu Urban Development Project-III, the Tamil Nadu Sustainable Urban Development Project with the aid of World Bank was started at a cost of ` 3,831 Crore with the scope to develop the infrastructure and basic amenities in Urban Local Bodies and to implement better Urban Management procedures.

With the assistance of KfW, the German Funding Agency, to provide water supply, UGSS, street lights, roads and storm water drains under the Sustainable Municipal Infrastructure Financing – Tamil Nadu Phase-II Programme, Part-I and Part-II schemes are being implemented at a cost of `578.16 crore and `877.39 crore respectively.

Under Atal Mission for Rejuvenation and Urban Transformation (AMRUT), major water supply and sewerage projects will be taken up. Further, Greater Chennai Corporation and Coimbatore Corporation have been selected to be developed as Smart Cities in 2015-16 by the Government of India.

#### **IV. Amma Unavagam**

To benefit the poor and needy people residing in slum areas, daily-wage workers, auto drivers and elders, Hon'ble Chief Minister of Tamil Nadu has made an announcement to open

**“Amma Unavagam”** to provide hygienic food at subsidised price. The Greater Chennai Corporation has opened 293 Amma Unavagams at different locations and 7 Amma Unavagams in Government hospitals and totally 300 Amma Unavagams are running successfully. In other Corporations and Municipalities 247 Amma Unavagams are being operated. Thus there are 547 Amma Unavagams in the state serving one idly for `1, pongal for `5, variety rice for `5, curd rice for `3 to benefit the poor and needy.

## **V Urban Sanitation**

In order to improve the Urban Sanitation and to implement the Solid Waste Management effectively in ULBs, Swatch Bharath Mission is being implemented with Central and State Funds from 2<sup>nd</sup> October, 2014. Under the Scheme so far 82,356 individual household toilets are constructed and 8010 community toilets seats are

constructed. Further, Integrated Solid Waste Management Projects are taken in up 475 ULBs and completed in 78 ULBs.

## **VI Sustainable Water Sanitary Mission**

**The Hon'ble Chief Minister of Tamil Nadu**, during her tenures as the Chief Minister of Tamil Nadu has taken several bold and innovate steps that have brought about revolutionary changes in the entire approach to deal with the problems of urbanization. **The Hon'ble Chief Minister** launched the historical **Rain Water Harvesting** movement **in** the State in the year 2001. Necessary Legislative measures were taken to make installation of Rain Water Harvesting Structures mandatory in all buildings. As a logical sequel to the RWH movement, Hon'ble Chief Minister has announced the "Sustainable Water Security Mission" during the year 2015 – 2016, which aims at campus rain water harvesting, storm water harvesting, renovation of water bodies with community involvement and recycle

and reuse of grey water. Pilot project have been succefully implemented in the Chennai Metropolitan Area.

The Municipal Administration and Water Supply Department is thus fully committed to implement progressive schemes for the creation of urban infrastructure, improved civic governance, delivery of civic services and making the cities and towns in the State safe, clean and liveable. By doing so, this Department will strive hard to make the **Hon'ble Chief Minister's Vision for Tamil Nadu, "to become India's most prosperous and progressive State with no poverty, and where its people enjoy all the basic services of a modern society and live in harmonious engagement with the environment and with the rest of the World"**, a tangible reality.

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

The Commissionerate of Municipal Administration is the nodal department responsible for coordinating and supervising the functions of all Municipalities and Municipal Corporations in the State except the Corporation of Chennai. The Commissionerate of Municipal Administration is headed by the Commissioner of Municipal Administration and assisted by Joint Commissioners, Additional Directors, Joint Director and 7 Regional Directors of Municipal Administration (one each for Chengalpattu, Vellore, Salem, Tiruppur, Thanjavur, Madurai and Tirunelveli regions).

There are 11 Municipal Corporations (except Chennai) viz, Madurai, Coimbatore, Tiruchirappalli, Tirunelveli, Salem, Tiruppur, Erode, Vellore, Thoothukudi, Dindigul and 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
<b>Total</b>			<b>124</b>

### **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 were conducted on 17<sup>th</sup> and 19<sup>th</sup> October 2011. During these

elections, the Corporation Mayors and Municipal Chairpersons were elected directly by the people. The elected Corporation Mayors, Municipal Chairpersons and Councillors assumed their Offices on 25<sup>th</sup> October 2011.

The Bye-Elections to the vacant posts were conducted on 18<sup>th</sup> September 2014. The Elected Mayors, Municipal Chairpersons and Councillors have assumed their offices on 24<sup>th</sup> September 2014. Category -wise elected Mayors, Municipal Chairpersons and Councillors are given below: -

Urban Local Bodies	SC (General)	SC (women)	ST (Women)	Women (General)	General	Total
<b>Corporations(including Chennai Corporation)</b>						
Mayors	--	1	--	4	7	12
Councillors	58	34	--	275	552	919
<b>Municipalities (*)</b>						
Chair persons	10	6	1	34	73	124
Councillors	271	194	4	1007	2137	3613

At present, there are 7 women Mayors out of a total of 12 Mayors and 53 women Chairpersons out of a total of 124 Chairpersons.

## **2.1 Infrastructure Development**

Creating and maintaining urban infrastructure is an important function of the Urban Local Bodies (ULBs). The Government accords highest priority to the creation of quality and effective infrastructure. Infrastructure works in ULBs are taken up by accessing financial assistance from Central/State Governments and external funding agencies like World Bank, German Development Bank (KfW) and Japan International Cooperation Agency (JICA).

## **2.2 Integrated Urban Development Mission**

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 in improving the basic standards of infrastructure like roads, drinking water supply, street lights, sewerage, storm water drains, sanitation, solid waste management, bus stands, parks etc., in an integrated manner.

During the last 5 years, `2428.10 crore has been infused for development of urban infrastructure. Out of 6492 works undertaken, 5615 have been completed, and the balance works are in various stages of implementation.

The sector wise projects taken up during the year 2015-16 under IUDM are as follows: -

Sl. No	Sector	No. of ULBs	Amount Sanctioned ( in Crore)	Number of Works taken up	Works under progress
(1)	(2)	(3)	(4)	(5)	(6)
1	Under Ground Sewerage Scheme	16	123.00	16	16
2	Water Supply	10	70.19	10	10
<b>Total</b>			<b>193.19</b>	<b>26</b>	<b>26</b>

An amount of `886.00 crore has been allocated for this scheme during the year 2016-17.

### 2.3 Water Supply

Norms prescribed by 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 ULBs 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>Range</b>	<b>Status</b>	<b>Municipalities</b>	<b>Corporations</b>
90LPCD & Above	Good	58	6 (110 Lpcd & above)
40 to 89 LPCD	Comfor- table	66	5 (70- 109 Lpcd)
20 to 39 LPCD	Poor	0	0 (less than 70 Lpcd)
Less than 20 LPCD	Acute	-	-
<b>Total</b>		<b>124</b>	<b>11</b>

The Government has 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 has 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) and JnNURM. 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).

In the year 2011, a total of 1567.10 MLD of water has been supplied to all ULBs at an average rate of 93 LPCD. In the year 2016, after the

implementation of several water supply schemes under TNUDP-III, JnNURM, KfW, JICA, IUDM, IGFF etc., the supply level has been increased to 1862.05 MLD at an average rate of 111.47 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 (Thachanalur)	5.94	36.72	77	55.00	116
2	Gobichetty palayam	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	Kuniamuthur		3.5	40	8.00	75
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 are as follows: -

S. 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), 13** Water Supply Improvement Schemes (WSIS) have been taken

up at an estimated cost of `1193.74 crore, of which 9 schemes have been completed.

The supply level has increased in the 8 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	Madurai	71.23	71.6	67	118.6	110
2		9.14	Due to construction of 3 check dam in River Vaigai			
3	Coimbatore	159.85	176.00	109	216.00	135
4	Tambaram	32.62	8.77	55	16.12	90
5	Anaiyur (merged with Madurai Corporation)	7.88	3.48	46	4.12	90
6	Tirupparankundram & Harvipatti (merged with Madurai Corporation)	9.70	2.69	69	3.71	90

	tion)					
7	Tiruman-galam	68.13	8.08	90	11.18	135
8	Madurai added area	106.99	17.14	90	27.55	135
9	Coimbatore added area	29.03	10.64	70	36.08	135

The status of remaining 4 Water Supply Schemes are as follows: -

SI. No	Name of the ULB	Project cost ( in crore)	Present stage
1	Avadi	103.84	Partially completed and balance work in progress
2	Anakaputhur	14.88	Work in progress
3	Poonamallee	23.87	Tender Stage
4	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, **30** Water Supply Improvement schemes (WSIS) have been completed.

The supply level has increased in the 30 completed ULBs as follows: -

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 development		infrastructure	
2	Karur	1.35	6.9	84	8.4	110
3	Valparai	2.21	0.75	42	2.51	122
4	Tirupathur	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	70	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	Vickramasinga Puram	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
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18	Erode	8.00	<b>Changing the pipe line in water supply pumping main and distribution</b>			
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	<b>Changing the pipe line in water supply pumping main and distribution</b>			
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

The status of remaining **10** Water Supply Schemes are as follows: -

Sl. No	Name of the ULB	Project cost (in Crore)	Present stage
1	Vellakoil	17.41	Work progress in
2	Kangeyam	16.07	
3	Cumbum	18.8	
4	Kovilpatti	81.82	
5	Kayalpattinam	29.67	
6	Periyakulam	15.54	
7	Tiruvathipuram	13.44	
8	Tindivanam	52.45	
9	Arani	36.26	
10	Kodaikanal	46.31	

With the financial assistance of **JICA**, **9** water supply improvement schemes have been taken in Tiruchirappalli, Dindigul and Thoothukudi Corporations, Palani, Coonoor, Idappadi, Devakottai, Mettupalayam and Udumalpet Municipalities at a cost of **`663.68 crore**. The projects in Tiruchirapalli Corporation and 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	Tiruchirapalli	221.42	90	98	154	135

2	Devakottai	8.32	4.06	78	4.67	81
3	Idappadi	18.52	3.14	61	6.3	113
4	Coonoor	13.85	2.82	62	3.46	76

The status of remaining **5** Water Supply Schemes are as follows: -

<b>S. No</b>	<b>Name of the ULB</b>	<b>Project cost ( in Crore)</b>	<b>Present stage</b>
1	Palani	21.60	Partly completed 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**, 13 works have been taken up at a cost of `777.69 crore, out of which, 4 Works have been completed. The supply level

has 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	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

The status of remaining 9 Water Supply Schemes are as follows: -

S. No	Name of the ULB	Project cost ( in crore)	Present stage
1	Karur	24.67	Work nearing completion
2	Thanthoni	25.16	Work nearing

			completion
3	Inam Karur	18.57	Work nearing completion
4	Udhagamandalam	27.20	Partly completed, balance work is in progress.
5	Tirunelveli	230.00	Tender Stage
6	Cuddalore	148.09	Work is in progress
7	Trichirappalli	63.70	Work is in progress
8	Coonoor	40.19	Tender Stage
9	Coimbatore added area	108.16	

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

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

Sl. No	Name of the ULB	Project Cost ( in crore)	Daily Water Supply Service Level I			
			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	14.26	135
2	Krishnagiri	93.59	4.00	56	8.00	112
3	Hosur	149.32	6.50	27	15.50	63

**CWSS 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
Narasingapauram	1.30	56	1.90	82

**Vellore Combined Water Supply Scheme (CWSS)** has been completed at an estimated cost of `1044.90 crore with funding under HUDCO, Kfw

and Integrated Urban Development Mission (IUDM) with `104.50 crore as ULB Contribution. The above scheme has been completed and water supplied to Vellore Corporation and 11 municipalities. The supply level has been increased in 1 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 Cororation	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
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CWSS to Melur Municipality has been completed at an estimated cost of `23.80 crore and put into use.

Apart from the above, Detailed Project Reports have been prepared for 6 Corporations and 10 Municipalities at a total project cost of `3236.59 crore, and is under fund tie up under AMRUT, World Bank and KfW schemes. Implementation of these projects will be taken up after arranging funding.

### **2.3.1 Efficient Water Management System**

The Government has given priority to the improvement of Water Management Systems in Corporations and Municipalities. The following measures have been taken: -

- Replacing inefficient motors and pumps to improve the efficiency of the pumping system.
- Revamping the existing water supply 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 etc., have been taken up in the water supply schemes in Corporations and Municipalities.
- In Coimbatore Corporation, SCADA implementation has been completed by TWAD Board which is maintained by them. For Pillur-II, Tender has been received for implementation of SCADA.

- SCADA system has been partially implemented and commissioned in the Corporations of Tirunelveli, Tiruppur, Madurai and Tiruchirappali.
- In Rasipuram, Komarapalayam, Tiruchengode and Namakkal Municipalities, SCADA works are nearing completion.
- In Tirunelveli, Thoothukudi and Dindigul Corporations SCADA will be implemented in 2016-17.
- Provision made for SCADA in all the new water supply schemes for this year.

### **2.3.2 Improvement of Distribution system**

A detailed study has been taken up in all ULBs about the status of existing water supply system in a prescribed format devised 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 42 ULBs at a total project cost of `1220.15 crore for improvement of Distribution system and other infrastructure facilities like OHTs, Sumps etc., Out of the 42 DPRs prepared, 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. For the remaining 16 projects, the process of funding under KfW and other sources are underway and for the remaining 11 projects, action is being taken to arrange funding. Apart from the above,

all the new water supply schemes would be inclusive of distribution system improvement.

### **2.3.3 Rain Water Harvesting**

The path-breaking Rain Water Harvesting (RWH) Programme was launched in 2001 under the visionary leadership of the Hon'ble Chief Minister of Tamil Nadu. The vigorous implementation of this scheme during 2001-2006 has reaped rich dividends in enhancing ground water table.

On the directions of the Hon'ble Chief Minister, necessary amendments were made to the Tamil Nadu District Municipalities Act, 1920, the Tamil Nadu District Municipalities Building Rules, 1972, the Multi- Storied 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 June 2016, out of 42.55 lakh buildings in Corporations (Except Chennai) and Municipalities, 35.09 lakh buildings (25,650 Government buildings and 34.84 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 1482 Ponds and temple tanks, 716 have already been provided with RWH structures.

With this drive, 82% of Buildings and 48.31% of Ponds and Tanks have been covered upto June 2016. The harvestable rain water from buildings and water bodies is calculated at 4.82 TMC which

may be recharged into the aquifers (Source: TWAD).

During the year 2016-17, RWH structures will be taken up in the remaining Buildings, Ponds and Tanks in the ULBs.

#### **2.3.4 Northeast monsoon – 2015 (State Disaster Response Fund)**

In 2015-16, to restore the damages due to Northeast monsoon 2015, the Government have sanctioned `75.00 crore under State Disaster Response Fund for temporary restoration of roads and other infrastructures. The road and culvert restoration works were taken up in 8 Corporations and 58 Municipalities. Out of 861 works taken up 744 works have been completed and the balance works are nearing completion.

#### **2.4 Under Ground Sewerage Scheme**

As per the policy decision of the Government, the implementation of UGSS to all the Urban Local

Bodies will be taken up 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 in a phased manner after necessary financial tie up.

Under the **Tamil Nadu Urban Development Project-III**, UGSS have been taken up in 22 Towns for implementation at a total cost of `1025.51 crore, of which the UGSS in Udhamandalam, Chinnamanur, Namakkal, Dharmapuri, Perambalur, Dindigul (part), Thiruvannamalai, Kancheepuram, Ramanathapuram, Tiruvarur, Cuddalore, Theni-Allinagaram, Vellore, Nagapattinam, Pudukottai, Tiruvallur and Pallavapuram Municipalities have been completed and put into use at a cost of `691.87 crore.

Under the **Urban Infrastructure and Governance** component of JnNURM, UGSS in 4 ULBs viz., Madurai and Coimbatore Corporations, Avadi and Tambaram Municipalities were taken up at a total cost of `925.49 crore and the works are at various stages of implementation.

Under the **Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT)** component of JnNURM, UGSS in 10 Towns viz., Maraimalai Nagar, Ariyalur, Arokkonam, Sathur, Chidambaram, Thirupathur, Periakulam, Mettur, Nagerkoil and Udumalpet were taken up at a total cost of `954.86 crore, of which Maraimalai Nagar and Udumalaipet have been completed and put into use. The remaining projects are in advanced stages of implementation.

Under **German Development Fund (KfW)**, UGSS in Erode Corporation at a cost of `209.09 crore, Karaikudi at a cost of `112.53 crore, Pollachi at a cost of `109.62 crore and Villupuram at a cost of `49.36 crore were taken up. Villupuram UGSS has been completed and the process of effecting House Service Connections is in progress. Erode, Karaikudi and Pollachi UGSS are at various stages of progress.

For Hosur Municipality, the Administrative Sanction for `283.94 crore was sanctioned vide G.O.M(s) No.1 dated 02.01.2015 under TNSUDP and action is being taken for getting necessary clearances for the commencement of work.

Upto June 2016, 4,31,895 House Service Connections (previous year 3,31,769 connections) have been effected in 30 ULBs viz., Coimbatore

(part), Dharmapuri, Thiruvannamalai, Dindigul, Pallavapuram, Maraimalainagar, Chinnamanur, Kancheepuram, Tirunelveli, Tiruchirapalli, Madurai, Udthagamandalam, Namakkal, Karur, Mayiladuthurai, Kumbakonam, Thanjavur, Tiruppur, Perambalur, Ramanathapuram Thiruvarur, Cuddalore, Pudukottai, Vellore, Udumalaipet, Tiruvallur, Theni-Allinagaram, Virudunagar, Nagapattinam and Villupuram in which the Under Ground Sewerage Scheme has been completed.

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 etc., are being explored.

## **2.5 Sanitation**

With a vision to ensure that the towns are sanitized, healthy and liveable and sustain public health for all the citizens, the Government have brought to focus, access to safe sanitation including open defecation free and garbage free environment as priority areas.

### **2.5.1 Eradication of Open Defecation**

Recognizing the absence of adequate number of toilets linked to Under Ground Sewerage Scheme, absence of sufficient and well maintained public / community toilets and the age old practice of open defecation posing serious sanitation problems and health hazards, the Government has announced the total elimination of open defecation by 2015. Necessary Guidelines and instructions were issued to the Urban Local Bodies and suitable sites have been identified for construction of toilets.

A massive awareness campaign has been launched to create awareness on health hazards of open defecation and need for behavioural change. 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 the Survey, 3024 number of Community toilets with 18144 number of seats have been taken for improvements and construction of new toilets to eradicate open defecation.

In addition to this scheme since October 2014 Swatch Bharath Mission Programme has also been taken up. In the year 2015-16, for the construction of IHHL a target of 83,048 numbers has been fixed. Out of which 52,183 numbers were completed and 29,239 numbers are at different stages of implementation. Under Community toilet for a target of 6422 numbers

2490 were completed and 3932 seats under different stages of implementation.

In the last 5 years, construction of 1205 new Community toilets and rehabilitation of 2059 existing Community toilets have been taken up at a cost of `210.60 crore, out of which construction of 883 new Community toilets and rehabilitation of 1809 existing Community toilets has been completed and remaining works are in various stages of progress.

With a view to improve the usability by different types of user groups, such as Men, Women, Children, Elders, Differently Abled, a “Universal Design Toilet – Namma Toilet” has been developed by the Commissionerate of Municipal Administration. 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 for improving the existing toilets has been prepared. So for 265 Namma Toilets are taken up and 204 are completed and the balance installation work is in progress.

### **2.5.2 Septage Management**

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 time. Septage management includes the process of design collection, safe treatment & 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.

### **Need for Septage Management**

In order to regularize and monitor the handling of faecal sludge, comprehensive

guidelines have been issued by the Government vide G.O. (Ms) No. 106 MA&WS Department, dated 01.09.2014. The guidelines contemplated the following initiatives: -

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

23 clusters of Local Bodies have been identified based on the existing location of STPs. The local bodies have been grouped in such a way that all collection points are situated approximately at a radius of 18-20 Km from the designated STP.

The enumeration of existing Septic Tanks, identification of insanitary latrines and establishment of decanting facilities in functioning STPs are in progress. So far in Corporations and Municipalities 211 number of lorries registered with 1,02,299 number of trips 818.39 MLD Sewage has been collected from septic tank, carried through lorries to nearby Sewage treatment plant and treated there.

## **2.6 Animal Birth Control (ABC) Programme**

The Animal Birth Control (ABC) Programme is part of the Public Health Function of Corporations and Municipalities. To implement the Animal Birth Control Programme in a humane manner, Sanitary Workers and Municipal staff have been provided with training from reputed NGOs. As per G.O. No. 181 of M.A. & W.S. Department, dated 05.04.2013, 60 permanent dog catching Mini Vans were provided to the ULBs for catching and transporting the dogs at a cost of `3.00 crore.

80 permanent dog Shelters sanctioned at a cost of `2.40 crore have been constructed in the ULBs.

Under ABC Programme, the stray dogs in the ULBs (except Chennai) were enumerated as 2,42,655. Upto May 2016, 1,47,245 dogs were sterilized at a cost of `6.60 crore. Sterilization procedure was done by outsourced Veterinary Surgeons. The dogs were maintained in well established dog shelters during the operative and post-operative periods and properly taken care of. They were given anti-rabies vaccines also. The remaining street dogs will be sterilized in a phased manner.

## **2.7 Solid Waste Management**

In Tamil Nadu, about 7597 MT of Municipal Solid Waste is being generated daily in 11 Corporations and 124 Municipalities. To strengthen primary collection, transportation and processing of Municipal Solid Waste, vehicles,

mechanaries and equipments are being procured under Special SWM fund and Swachh Bharath Mission. For processing of MSW activities Windrow composting, vermicomposting, establishment of Resource Recovery Centres, Biomethanation plants, Biomining and other processing facilities are encouraged.

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 II Phase Waste to Energy project will be taken up with expected electrical power output of 2.9MWh.

### **2.7.1 Integrated Solid Waste Management Schemes**

As per the directions of the Hon'ble Chief Minister, Special Solid Waste Management (SWM)

Fund has been constituted with an annual allocation of `100 crore to support financially weaker ULBs for implementation of ISWM projects. So far 80 Urban Local Bodies have been covered at an estimated cost of `746.36 crore wherein 878 works have been taken up and 153 projects were completed and rest of the projects are at different stages of implementation.

### **2.7.2 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 etc., 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 164 TPD in 8 Corporations and 23 Municipalities at a cost of `30.39 crore with financial assistance through IUDM Scheme, Part-II scheme and SWM Fund.

Among 31 ULBs, in 20 ULBs with a capacity of 96 TPD the works have been completed and in the remaining ULBs the works are in different stages of implementation. In the completed ULBs on an average 5000 Kwh energy is being produced.

The energy derived out of these Biomethanation plants are used for illuminating the lights at compost yard, for the functioning of processing plant machinaries, Energy for the STP plants available at the site, thermal energy for the Amma unavagam, for the crematorium will be used for other such useful purposes. Any extra electrical energy so derived will be fed to the grid in association with TANGEDCO.

### **2.7.3 Composting**

In all ULBs by utilizing the bio degradable segregated waste by formation of windrows composting is being taken up. In 5 Corporation and 49 Municipalities annually 60225 MT of compost and Vermi Compost has been prepared and used for farm purpose.

## **2.8 Roads**

Roads form the backbone of the Urban Infrastructure development. 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 a total length of roads of 23,349.93Km of which 5,334.437Km are cement

concrete roads, 15,316.999Km are black topped roads, 772.38Km are WBM roads, 1638.17Km are earthen roads and 287.94Km are other roads like cut stone pavement, paver block etc.,

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 detailed below.

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

The Government put much emphasis on improving roads damaged due to laying of sewer lines, water mains and natural calamities over a period of time and which require restoration to full width to make it motorable. To this effect, the

Government has announced an "Urban Road Infrastructure Programme".

For the last five years under this programme, 3141.84Km 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 `1624.38 crore comprising 4,514 works, of which 4,298 have been completed at a cost of `1200.03 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	1068	16
2015-16	258.29	1016.410	248	50	198
<b>Total</b>	<b>1173.52</b>	<b>3141.842</b>	<b>4514</b>	<b>4298</b>	<b>216</b>

For the year 2016-17, `332.43 crore, has been allocated under this scheme.

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

Since the launch of IUDM, from the year 2011-12 to 2014-15, 1416.03Km length of roads were taken up at an Estimated cost of `501.58 crore comprising 2115 works, of which 2114 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
2013-14	172.97	432.86	303	303	0
2014-15	4.01	3.100	7	6	1
<b>Total</b>	<b>501.58</b>	<b>1416.03</b>	<b>2115</b>	<b>2114</b>	<b>1</b>

### **2.8.3 Uniform Retro Reflective Road Signage**

The Government has taken massive restoration and relaying of roads in the ULBs under various schemes. In order to enhance the utility and usefulness of these roads to the commuters and tourists by giving proper signage like names, cautions, tourist destination etc., a programme was taken up to provide uniform retro reflective road signage. 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.

### **2.8.4 Plastic Roads**

Plastic waste poses a major threat to the environment. This Government has 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.

During the last five years, 1476.408 Metric Tonnes of plastic waste has been utilized in laying 935.23Km length of roads with a financial assistance from general fund and Government special fund. To promote the collection, segregation and shredding of plastic waste, Self Help Groups (SHGs) are trained and engaged in these activities.

## **2.9 Street Lights**

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.

On a pilot basis, energy efficiency measures, including Operation and Maintenance has been taken up in 9 Corporations and 35 Municipalities of Thanjavur and Tiruppur Region utilizing ESCO's. It is expected to bring about 25–35% 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. There are 3,13,507 street lights of which; the retrofitting of 2,11,925 existing street

lights with energy efficient LED fittings is in progress. Retrofitting of 1,34,689 numbers of existing street lights has been completed so far.

Regarding the work of Retrofitting 50,922 street lights with energy efficient LED fitting in Thoothukudi Corporation and Thanjavur Regional Municipalities, tender has been received.

## **2.10 Special Infrastructure Programme**

### **2.10.1 Modern Gasifier Crematorium**

As a measure to protect the environment by reducing direct burning of wood, construction of crematoriums based on the Gasifier technology have been taken up in the urban local bodies. This reduces the use of firewood by more than 50%.

Accordingly, out of the 135 ULBs, the 92 ULBs were identified for construction of 108 modern gasifier crematorium and an allocation of

₹34.63 crore has been made. Out of the gasifier Crematoriums available in the state, 84 are maintained by NGOs / Philanthropic Organisations. Constructions of the remaining crematoriums are in various stages of implementation.

### **2.10.2 Modern Slaughter Houses**

In order to modernize the slaughter houses and to make them environmental friendly and free from health hazards, during the last five years, under Part-II and Infra Gap Filling Funds, 35 Modern Slaughter houses were taken up in 6 Corporations and 25 Municipalities at a cost of ₹9.01 crore. 28 Slaughter houses have been completed and others are in various stages of implementation.

A Modern Abattoir at an estimated cost of ₹9.85 crore has been sanctioned for Tiruchirapalli

Corporation with the assistance of 50% grant from the Ministry of Food Processing Industries, Government of India. Another 5 modern abattoirs at Tiruppur and Coimbatore Corporations at an estimated cost of `63.92 crore are also proposed to be funded with assistance from GoI.

### **2.10.3 Roof Top Solar Energy**

In order to fulfil the Hon'ble Chief Minister's vision to generate 3000 MW of power from Solar energy, this department is taking various steps. 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 electrical energy and use it for office requirements and subsequently for street lights, water supply works in due course of time.

To train the ULB engineers on solar power technologies, a training programme with the assistance of Auroville on technology and management aspects of solar energy was conducted 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 50KW power for office use and every day, about 250Kwh power is generated in the day time there by reducing electricity charges considerably. So far, roof top solar energy aggregating to 2198Kwh has been installed in 445 ULB buildings. In continuation of this effort, it is proposed to establish roof top solar photovoltaic panel in all ULB buildings including water supply head works, treatment plants, sewerage treatment plants, and compost yards in due course.

In phase I, in view of implementing roof top solar harvesting in all the Municipal owned

building a feasibility study has been done by engaging a technical consultant. The electrical load being used in all the buildings is calculated of erection of photovoltaic panel and the anticipated solar energy that can be harvested and theoretically determined. It is also proposed to invite the private service provider operators based on the payback period.

#### **2.10.4 Non Motorized Transport**

As most of our city roads and streets do not have dedicated facilities for pedestrians, cyclists and public transport system, the Commissionerate of Municipal Administration has prepared a project - "Sustainable Cities through Transport" and initiated the planning process 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. Hon'ble Chief Minister of Tamil Nadu has announced under the rule 110 for creation of NMT Infrastructure for 3 Corporations viz., Coimbatore, Tiruppur, and Tiruchirappalli at a project cost of `62.42 crore under Infrastructure and O&M Gap Filling Fund and General fund.

## **2.11 Infrastructure and O&M Gap Filling Fund**

Based on the recommendations of the 4<sup>th</sup> State Finance Commission, Government has increased the share of Infra Gap and O&M Gap Filling Fund from 3% to 7% and 2% to 3% respectively. During the last 5 years, 4666 works have been taken up at an estimated cost of `965.18 crore under Infrastructure Gap Filling Fund, out of which 3897 have been completed and the balance works are in various stages of implementation. Under the Operations and Maintenance Gap filling funds, 468 works have been taken up at an estimated cost of `375.11 crore of which 188 works have been completed and balance works are in various stages of implementation.

**For the year 2016-17, an amount of `192.64 and `82.56 crore have been allocated**

**under Infra Gap and O&M Gap Filling Fund respectively.**

## **2.12 Construction of Office Buildings**

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

During the last five years, a grant of `100.46 crore has been sanctioned to 73 ULBs under Infrastructure Gap Filling Fund, Operation and Maintenance Gap Filling Fund and Part-II scheme, out of which, 34 office buildings have been completed and remaining are in various stages of implementation.

## 2.13 Sanitary Workers Welfare

Sanitary workers constitute about 70% of the workforce (30109 persons out of total 43089 persons) of the Urban Local Bodies. 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 make their profession dignified and to give them a safe and healthy working atmosphere.

The government has sanctioned ₹39.11 crore under IGFF, O&M GFF and Part II scheme during the last five years to 33 ULBs for construction of 902 quarters for sanitary workers, as detailed below: -

Year	No. of ULBs	No. of unit	Present Status	
			completed	progress
2011-12	3	72	72	0
2012-13	6	80	68	12
2013-14	11	336	126	210
2014-15	8	214	0	214
2015-16	5	200	0	200
<b>Total</b>	<b>33</b>	<b>902</b>	<b>266</b>	<b>636</b>

## **2.14 Centrally Sponsored Schemes**

### **2.14.1 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 the aspirations and needs of the citizens.

The programme intends to provide core infrastructure to the citizens along with the application of 'Smart' Solutions.

The Government of India have proposed to create 100 Smart Cities and its duration will be five years. The Government of India have allocated 12 Smart Cities for Tamil Nadu State.

In the first year, based on the "City Challenge Competition", the 12 Corporations selected in Tamil Nadu, have participated in the competition by submitting "Smart City Proposal"

to compete among the 100 Smart Cities throughout the Country. Of which Chennai and Coimbatore Corporations were selected for the year 2015-16 in Tamil Nadu. Special Purpose Vehicle have been established.

#### **2.14.2 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.

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

The Jawaharlal Nehru National Urban Renewal Mission envisages an integrated

approach to infrastructure development in the Mission Cities and their suburbs. In Tamil Nadu, Chennai, Madurai and Coimbatore are the Mission Cities. The development works are taken up under the following Sub Missions and Programmes: -

1. a. Urban Infrastructure and Governance (UIG)  
b. Basic Services to the Urban Poor (BSUP)
2. Urban Infrastructure Development Scheme for Small & Medium Towns (UIDSSMT)
3. Integrated Housing and Slum Development Programme (IHSDP)

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

Details of the works taken up under the UIG

<b>SI No</b>	<b>Name of the scheme</b>	<b>No of ULBs</b>	<b>Sanctioned</b>	<b>Number of projects</b>
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			amount ( crore)	Taken up	Completed
1	Water supply	7	1193.74	13	9
2	Storm Water Drains	2	528.31	2	2
4	Solid Waste Management	4	215.01	3	2
5	Under Ground Sewerage Scheme	4	925.49	4	0
<b>Total</b>		<b>17</b>	<b>2862.55</b>	<b>22</b>	<b>13</b>

Thas converted to Hinduism with the name of he has converted to Hinduism with the name of above 22 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.

### 2.14.5 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 / up gradation 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	30
3	Under Ground Sewerage Scheme	11	607.54	11	2
4	Solid Waste Management	1	3.58	1	1
	<b>Total</b>	<b>68</b>	<b>1421.00</b>	<b>68</b>	<b>49</b>

### 2.14.6 Housing for Urban Poor

The prime objective of the Government is to provide access to safe, healthy, affordable and sustainable housing for the urban poor. 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.

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

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

Under this scheme, the Government of India has so far sanctioned 51 projects, at a project cost of `2316.02 crore for construction of 89,720 dwelling units, out of which 78,971 have been completed. Balance 10,749 works are in various stages of implementation. Out of 3,852 infrastructure works, 3,765 have been completed. Balance 87 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	35	30
CMA	679.51	42010	37130	4880	934	932	2
DTP	43.16	2348	2348	0	186	186	0
COC	223.07	3044	2950	94	2667	2612	55
<b>Total</b>	<b>2316.02</b>	<b>89720</b>	<b>78971</b>	<b>10749</b>	<b>3852</b>	<b>3765</b>	<b>87</b>

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

The IHSDP projects aim at the holistic development of slums by providing adequate shelter and basic infrastructure facilities to the slum dwellers. The Government of India has

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, 36,733 dwelling units have been completed and 982 units are under progress. Out of 2,233 infrastructure works sanctioned, 2,148 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 :-

Of the Implement ent)	ect cost ( in crore	Housing units	Infrastructure works
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		Sanctioned	Completed	In Progress	Sanctioned	Completed	In Progress
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TNSCB	20.09	1443	1443	0	-	-	-
CMA	486.57	31730	30748	982	1957	1872	85
DTP	59.45	4542	4542	0	276	276	0
<b>Total</b>	<b>566.11</b>	<b>37715</b>	<b>36733</b>	<b>982</b>	<b>2233</b>	<b>2148</b>	<b>85</b>

## 2.15 External Aided Projects

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

**1. Japan International Cooperation Agency (JICA) assisted TNUIP**

Under this project 9 water Supply improvement Schemes at an estimated cost of `663.68 crore in 9 Urban Local Bodies were taken up for implementation. Out of which 4 schemes have been completed and remaining 5 schemes are under progress.

**2. German Development Bank (KfW) assisted SMIF**

Under this project 22 schemes (Road improvement, Storm water drain, Water Supply improvement and Under Ground Sewerage schemes) were taken up in 17 ULBs at a cost of `1376.44 crore. Of which, 9 schemes have been completed and the remaining 13 schemes are under progress.

**3. Tamil Nadu Sustainable Urban Development Project (TNSUDP)**

Government has accorded administrative sanction for implementation of World Bank

assisted Tamil Nadu Sustainable Urban Development Project (**TNSUDP**) at a cost of `3831.00 crore vide G.O.(MS) No.5 MAWS (MA2) Dept, dated 13.01.2016

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

### **2.16.1 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 and an amount of `153.24 crore each to Erode and Vellore Corporation and on amount of `76.62 crore to Hosur Municipality are to be released as grant in the next 5 years towards the achievement in Disbursement Linked Indicators (DLIs).

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

Under TNUDP III, Tamil Nadu State Wide Area Network (TNSWAN) has been established in 48 Municipalities, 7 Regional Offices and Commissionerate of Municipal Administration. Under e-Governance PFM and GIS sub component of urban sector TA component, a major e-Governance Project namely " Centralized web based software application for all ULBs" at a cost of `18.31 crore is being implemented. At present 12 Modules are implemented in 51 ULBs. All the 29 Modules targeted under this project will be implemented in all the ULBs before the end of 2016-2017. As a result centralized web enabled software has been implemented in 51 ULBs in full shape. Under TNSUDP, the TNSWAN is to be established in remaining 77 Municipalities, 7 Corporations in the year 2016-2017.

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

The door-to-door survey of properties, preparation of Base Map and Utility Mapping using Geo-spatial techniques was taken up in 7 Corporations and 10 Municipalities under TNUDP III. The data submitted by the consultants are being verified by the Urban Local Bodies.

GIS based property tax mapping will be expanded to other ULBs in a phased manner.

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

Tamil Nadu Institute of Urban Studies, Coimbatore was established in 1981 with a view to achieve greater efficiency in the functioning of the administration of ULBs. A new Hostel has been constructed to improve the residential training programmes.

The Institute has signed Memorandum of Understandings (MoU) with the reputed State, 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 for collaborative learning in the field of Urban Governance, Engineering and ICT.

In order to enhance the knowledge and skills of the ULB personnel to international standards, MoU has been signed with Public Enterprises Agency (PEA), Kanagawa Prefectural Government – Japan for capacity building specifically in the water supply sector including exposure visits and establishment of technical cooperation facility. Water treatment, distribution, leak detection and reduction of Non Revenue Water (NRW) etc., would be focus area of this cooperation in capacity building.

## **2.19 Corporations**

### **2.19.1 Madurai Corporation**

Madurai Corporation was constituted on 01.05.1971. The population of Madurai Corporation as per 2011 census is 15,61,129 and the extent is 147.99Sq.Km. It has an average annual income of `334.25 crore.

During the year 2015-16, the following works have been taken up for implementation: -

- Under Special Road Programme, `26.04 crore have been allotted for restoration of damaged roads at a length of 56.87Km due to laying of sewer lines.
- Under the Toll revenue, `22.44 crore have been allotted for formation of roads at a length of 68.17Km.

- Under Infra Gap Filling Fund, `0.90 crore was sanctioned for construction of new community toilets.
- In Thirupparankundram area Under Town and Country Planning Assisted Fund, `1.00 crore has been sanctioned for laying paver block, construction of Storm Water Drain, construction of building with R.O. plant and pathway.
- In order to reduce the traffic congestion in core city, shifting of 25 whole sale and 240 retail fruit shops to the site near Integrated Mattuthavani bus stand at a cost of `12.30 crore has been allocated and the work is in progress.

### **2.19.2 Coimbatore Corporation**

Coimbatore Corporation was constituted on 01.05.1981. The population of Coimbatore Corporation as per 2011 census is 16,01,438 and

the extent is 265.36Sq.Km, with an average annual income of `642.72 crore.

During the year 2015-16, the following projects were taken up for implementation: -

- Under Kfw scheme fund, for providing uninterrupted drinking water supply to Kavundampalayam, Vadavalli, Veerakeralam areas at the cost of `108.16 crore will be implemented through TamilNadu Water Supply and Drainage Board.
- Under UIG JnNURM scheme, a project for (24X7) water supply system at an estimated cost of `556.57 crore has been sanctioned, and same is in tender stage.
- Under Tamil Nadu Government Fund and AMRUT scheme for the year 2015 -16, `4.28 crore has been sanctioned for development of 6 parks and tender fixed.
- To protect the Environment, the construction and debris wastes are

proposed to be recycled and reused at an estimated cost of `9.00 crore and G.O issued on 31.05.2016 vide G.O (MS) No.79, Municipal Administration and Water Supply Department under PPP mode.

### **2.19.3 Tiruchirappalli Corporation**

Tiruchirappalli Corporation was constituted on 01.04.1994. The population of Corporation as per 2011 census is 9,16,857 and extent is 167.23 Sq.Km. with an average annual income of `303.88 crore.

During the year 2015-16, the following projects were taken up for implementation: -

- Under Special Road Programme, `26.22 crore was sanctioned to improve roads for 53.51Km and works are under progress.
- 11 Nos. of Community Toilets were constructed at an outlay of `0.63 crores under Swachh Bharat Mission.

- A sum of `10.49 crore sanctioned to this Corporation by the Ministry of Food Processing Industries (MOFPI), Government of India to establish Modern Abattoirs at 2 locations. Works are in progress.
- Tenders are to be received to construct Modern Fish Market at an outlay of `3.32 crore with the financial assistance from Tamil Nadu Government and National Fisheries Development Board.
- Works are in progress at the total cost of `63.70 crore to provide water supply to the residents of newly added areas in Ward No.61 to 65 under KfW Grant and loan.
- 6 Nos. of flood related works at an outlay of `1.20 crore were completed under Disaster Management Grant
- Tenders were received to execute 3 Nos. of works such as Modern Gasifier Crematorium and construction of

community kitchen using Methane Gas from the Kitchen Waste at a total cost of `1.70 crore under Operation & Maintenance Gap Filling Fund.

- 5 Nos. of Tourism related works such as Construction of Sanitary Complexes, Provision of streetlights and Energy Efficient Lights, Signages and Street furniture for the total value of `5.96 crore under ADB Funding are in progress.

#### **2.19.4 Salem Corporation**

Salem Corporation was constituted on 01.06.1994. The population as per 2011 census is 8,31,038 and the extent is 91.34Sq.Km with an average annual income of `164.59 crore.

During the Year 2015-16 the following projects were taken up for implementation: -

- The works on laying of 50 Nos of roads under special road scheme are in progress,

to the length of 29.767Km at an estimated cost of `18.00 crore.

- The work of 30 Nos of community toilets are being constructed at an estimated cost of `4.54 crore under Swatch Bharat Mission and State Government Grant.
- Under Infrastructure Gap filling fund the construction of II and III floor of Corporation main office new building and Modern Gassfire crematorium. Community kitchen, Construction of railway under bridge at Bodinaikenpatty and Bio-methonation plant at an estimated cost of `8.91 crore are taken up.
- Tenders are invited for formation of four Park under the scheme of Tamil Nadu Government fund and 'AMRUT' at an estimated cost of `1.35 crore.
- 293 road works to the length of 122Km are taken up at an estimated cost of `67.00 crore with loan from TUFIDCO.

### **2.19.5 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 `113.46 crore.

During the Year 2015-16 the following projects were taken up for implementation: -

- `230 crore has been sanctioned for implementation of Water supply Improvement scheme under KfW Fund. TWAD has called for tender.

### **2.19.6 Erode Corporation**

Erode Corporation was constituted on 01.01.2008. The population as per 2011 census is 4,98,129 and the extent is 109.52Sq.Km with an average annual income of `155.65 crore.

During the year 2015-16, the following projects have been taken up for implementation: -

- Under Special Road Programme, 27.13KM length of road have been taken up at an estimated cost of `25.86 crore.
- Under TUFIDCO loan assistance, 341 roads at a length of 100.02 Km have been taken up for restoration at an estimated cost of `86.53 crore.
- Under Infra and O&M Gap filling fund and Swachh Bharat Mission 11 toilet construction works have been taken up at an estimate cost of `1.42 crore.
- Under Swachh Bharat Mission, Construction of 3554 Individual Household Latrine have been taken up at a project cost of `4.26 crore.
- Under National Urban Health Mission, Construction of five of Primary Urban

Health Centre works have been taken up at an estimated cost of `2.47 crore.

- Under Infrastructure Gap filling fund, 2 Nos of works at an estimated cost of `1.08 crore have been taken up for installation of Bio digester unit in community toilet for production of methane gas and Bio methanation plant at gasifier crematorium.
- Under the State balance growth fund, one mobile toilet unit has been taken up at an estimated cost of `0.78 crore.
- For Solid Waste Management an amount of `12.77 crore has been allotted for construction of Pre-processing unit to prepare manure, and purchase of machineries and vehicles.
- Under Tamil Nadu Government Fund and AMRUT scheme, an amount of `2.26 crore has been allotted for 4 Nos of park improvement works.

### **2.19.7 Tiruppur Corporation**

Tiruppur Corporation was constituted on 01.01.2008. The population as per 2011 census is 8,77,778 and the extent is 159.35Sq.Km with an average annual income of `170.69 crore.

During the year 2015-16, the following projects were taken up for implementation: -

- Under Special Road Programme, `25.25 crore was sanctioned for Road works.
- Under TUFIDCO Infrastructure Funding Scheme (TIFS), ` 52.17 crore was sanctioned for Road works.
- Under Swachh Bharat Mission, `7.35 crore was sanctioned for Construction of New Toilets.
- Under Infrastructure Gap Filling Fund, `0.71 crore was sanctioned for Construction

of Bio-methanation Plant, Methane Plant and Kitchen shed.

### **2.19.8 Vellore Corporation**

Vellore Corporation was constituted on 01.08.2008. The population as per 2011 census is 5,04,079 and the extent is 87.91Sq.Km with an average annual income of `75.24 crore.

During the year 2015-16, the following projects were taken up for implementation :-

- Under Special Road Programme scheme, `12.00 crore has been sanctioned for improvement to damage roads to a length of 23.450Km.
- Under Flood restoration fund, a sum of `2.50 crore was sanctioned for providing

temporary restoration of roads to a length at 5 Km.

- An amount of `10.72 crore sanctioned under Solid Waste Management Project for Construction of compost sheds, purchase of primary and secondary collection vehicles.
- An amount of `2.48 crore sanctioned under Swachh Bharath Mission for Sathuperi & Sathupalayam compost yard improvement to compound wall and Platform.
- Under Tamil Nadu Government Fund and AMRUT, `2.014 crore was sanctioned for development of green spaces and parks.

#### **2.19.9 Thoothukudi Corporation**

Thoothukudi Corporation was constituted on 05.08.2008. The population of Corporation as per 2011 census is 3,70,896 and the extent is 90.63 sq. Km. with an average annual income of `88.07 crore.

During the Year 2015-16, the following projects were taken up for implementation: -

- Under Special Road Programme ₹27.85 crore has been allotted to restore 50.64Km of roads damaged due to the implementation of WSIS & UGSS 70 works have been taken up and all works are nearing completion.
- Under State Disaster Relief Fund ₹8.74 crore was sanctioned for restoration of 47 roads, and all works were completed.
- Under Infrastructure Gap Filling Fund, ₹1.27 crore was sanctioned for improvement of Water bodies, Installation of Bio-digester unit in Community Toilet with Community Kitchen, and Provision of Kitchen/ Organic waste based Bio-Methanation plant for fuel to Gasifier Crematorium, construction of bridges and maternity centre.

#### **2.19.10 Thanjavur Corporation**

Thanjavur Corporation was constituted by Hon'ble Chief Minister of Tamil Nadu on 19.2.2014. The population as per 2011 census is 2,22,943 and the extent is 36.31Sq.Km with an annual Income of `80.57 crore.

During the Year 2015-16 the following works have been taken up for implementation: -

- Under Special Road Programme, `16.99 crore has been allotted to restore 34.37Km of roads.
- Under Infrastructure Gap Filling Fund, `0.70 crore was sanctioned for Construction of Bio Diegester Community Toilet with Kitchen and Organic waste Bio-methanation plant for Gasifier Crematorium.
- Under National Urban Health Mission scheme `0.35 crore sanctioned for Construction of Shelter for Urban Homeless.

- Under Swatchh Bharat Mission `0.21 crore has been sanction for construction of Community Toilet at 3 Places.

### **2.19.11 Dindigul Corporation**

Dindigul Corporation was constituted by Hon'ble Chief Minister of Tamil Nadu on 19.2.2014. The population as per 2011 census is 2,07,327 and the extent is 14.01Sq.Km with an average annual income of `40.50 crore.

During the year 2015-16, the following works have been taken up for implementation:-

- Under Special Road Programme a sum of `10.00 crore has been sanctioned for Restoration of 14.825Km damaged roads due to implementation of UGSS works and Improvement of Water Supply works.

- Under State Disaster Relief Fund a sum of `0.70 crore has been sanctioned for Restoration of damaged roads due to flood. All the works are completed.
- Under Tamil Nadu Government fund and AMRUT Scheme a sum of `2.14 crore has been sanctioned for Improvements of parks. Tender has been called for.
- Under National Urban Livelihood Mission a sum of `0.25 crore has been sanctioned for Construction of Shelter for Urban Homeless and the work is nearing completion.
- Under National Urban Health Mission a sum of `0.10 crore has been sanctioned for Maintenance of Kamala Nehru maternity centre and the work is completed.

## **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 2014-15, the Madurai Corporation was adjudged the best among the Corporations (Cash Prize of `25 lakh) and Pudukottai, Mannargudi and Gobichettipalayam Municipalities were declared first, second and third respectively among the Municipalities (Cash Prize of `15 lakh, `10 lakh and `5 lakh respectively)

The Hon'ble Chief Minister distributed the cash prizes with a citation to the ULBs during the Independence Day Celebrations for the year 2015.

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

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 lakh. With the expansion of area from 174Sq.Km to 426 Sq.Km in 2011 by inclusion of 42 local bodies, it is the 4<sup>th</sup> largest Municipal Corporation in the country. With its 329 years of history, it 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 has been renamed as "Greater Chennai Corporation" by Hon'ble Chief Minister of Tamil Nadu on 29.01.2016. It is governed by an elected Council which is headed by a Mayor.

The 155 Divisions which were in existence prior to this expansion have been reorganised into 107 Divisions and newly included local bodies have been organised into 93 Divisions there by totaling 200 Divisions. Also, the existing 10 Zones have been reorganised into 7 Zones and recently added 42 local bodies have been divided into 8 new Zones; thus 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 I.A.S. Officers in the rank of Deputy/Joint/Additional Commissioners.

In addition to this, Government have sanctioned 784 additional posts subsequent to this expansion to augment the human resources 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 assesses of Property Tax is 11,87,564 and Profession Tax is 1,21,805. The overall revenue receipts in the year 2015-16 is `2920.77 crore. Target for property tax in Greater Chennai Corporation for the year 2015-16 was fixed as `600 crore; of which property tax collection is `586.46 crore. During 2014-15 the property tax collection was `581.63 crore. The capital expenditure of Greater Chennai Corporation for the year 2014-15 is `1672.92 crore and for the year 2015-16 is `1765.28 crore.

Income of the Greater Chennai Corporation over the past five years is given in the table below.

Year	Income (in crore)	% Increase
2011 – 12	1239.13	17.37
2012 – 13	1591.41	28.43
2013 - 14	2066.13	29.83
2014 - 15	2195.90	6.28
2015 – 16	2920.77	33.00
<b>Average</b>	<b>2002.67</b>	<b>22.98</b>

### 3.1 Amma Unavagam

To benefit the poor and needy people residing in slum areas, daily-wage workers, auto drivers and elders, Hon'ble Chief Minister of Tamil Nadu has made an announcement to open "Amma Unavagam" to provide hygienic food at subsidised price. The Greater Chennai Corporation has opened 293 Amma Unavagams at different locations and 7 Amma Unavagams in Government hospitals, totally 300 Amma Unavagams are running successfully. The price list in Amma Unavagam is that one idly for `1, pongal for `5, variety rice for `5, curd rice for `3 and in the

evening 2 chapathis with dhal for `3 are provided to benefit the poor and needy.

Till 18.07.2016, 31.81 crore Idlys, 12.49 crore variety rice and 15.27 crore chappathis have been sold through Amma Unavagams. Through these Amma Unavagams approximately 3 lakh poor people are benefitting 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. Remaining 107 "Amma Unavagams" will be opened by October 2016.

### **3.2 Amma Kudineer**

On 13.02.2016 the Hon'ble Chief Minister of Tamil Nadu announced to implement "Amma Kudineer Scheme" wherein purified drinking water would be given to fulfill the desire of poor and

deprived people of the society to get Reverse Osmosis treated water. In the first phase 20 drinking water dispensing machines have been installed in the localities of low / medium income residential areas at a cost of `3.00 crore. These plants are having production capacity of 2000 liters per hour which is expandable depending on the local demands.

The quality of water is being tested in approved laboratories. By this scheme, each family is getting 20 liters of purified drinking water per day at no cost. In order to facilitate the consumer who desire to avail this benefit a "Smart Card" is being issued. By this scheme so far (till 18.07.2016) 1.73 crore liters of purified drinking water were dispensed on an average 11,000 families per day. Further additional locations were identified for installing 30 water dispensing machines.

### **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 136 Urban Primary Health Centres and four 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, child health care are being given under single roof. Steps have been initiated to establish 15 Urban Community Health Centres for every 2.5 lakh population, one centre per zone with 100 beds, diagnostic laboratories etc., out of which 9 are running successfully at present. The remaining 6 UCHC are under different stages of constructions.

This scheme is being administered by Chennai City Urban Health Mission and a sum of

`172.70 crore is allotted from National Urban Health Mission to Greater Chennai Corporation for carrying out activities.

Further 1025 women groups called Mahila Arokiya Samithi are formed in slum areas to propagate Health related issues and awareness among the public.

### **3.4 AYUSH Clinics**

The Greater Chennai Corporation has opened 3 AYUSH clinics (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy) in Zone 4, 10 and 13 to provide five alternative Indian system of medicines. These clinics are manned by 5 doctors each from Indian alternative system of medicines. Since March 2016, every day 200 out patients are being benefited and till date 54,000 patients have been treated in these clinics.

### 3.5 Shelter for Urban Homeless

The Greater Chennai Corporation has established 37 shelters for Urban homeless since June 2013 which are run by Non Governmental Organizations.

#### Types of Shelters

Sl. No	Types of Shelter	Total
1	All group except mentally challenged	1
2	Boys & MR Boys	5
3	Boys & Girls	4
4	Men and Women	3
5	Family	1
6	Men only	10
7	Women only	9
8	Mentally Challenged Men & Women	4
<b>Total</b>		<b>37</b>

A total of 5138 people have been benefited by these shelters and 974 beneficiaries are staying in these shelters presently. The Greater

Chennai Corporation has initiated action to start 33 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 stray dogs birth.

The stray dogs are being caught based on specific complaints from the public, sterilized and immunized against rabies. These dogs are then released in the same area where they are caught as per ABC rules. During 2015-2016, through these ABC centers 21,534 stray dogs have been sterilized.

A total of 12 dog catching vehicles are deployed for dog catching operations. Private dog catchers are also engaged for catching and

relocating. As a special programme immunization against rabies for 60,826 stray dogs has been successfully completed.

### **3.6.2 Mosquito Control Activities**

To control mosquito menace and vector borne diseases among the residents staying near the waterways 5.90 lakh mosquito nets at a cost of `9.97 crore have been distributed. Further, 5 lakh Nochi plants were also distributed to the public.

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 mosquito repellents in Storm Water Drains. In addition gambusia fish are introduced in water bodies to eradicate larvae breeding.

Apart from this, during the year 2015–2016, an Amphibian vehicle was purchased from Finland for an amount of `9.97 crore which includes 5 year Operation & maintenance cost to eradicate Mosquito Menace by removing silt, rank vegetation and water Hyacinth in water ways and canals in and around Chennai City.

### **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. The Veterinary Assistant Surgeons conduct Ante-Mortem and Post - Mortem inspection of animals meant for meat purpose.

In addition a new slaughter house has been opened at Kallikuppam in Zone-7. Proposal for opening of one slaughter house each at

Kathivakkam in Zone 1 and in Zone 15 are under process.

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 to be installed at the Perambur slaughter house for the scientific and hygienic disposal of the solid wastes generated at all the slaughter houses of Greater Chennai Corporation.

### **3.8 Education Department**

The Greater Chennai Corporation is running 281 school including 119 Primary, 92 Middle, 38 High and 32 Higher Secondary Schools. Kinder Garten sections were started and running effectively in 200 Primary and Middle Schools. There are 88,327 children are 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 every deprived child. In order to achieve this, Greater Chennai Corporation is extending value added services to the Government incentive schemes. Greater Chennai Corporation provides scholarships for the students to pursue their higher studies inclusive professional, art, law, etc., and these scholarships are continued throughout the course period. Priceless uniforms are distributed to students from 9<sup>th</sup> std to 12<sup>th</sup> std, along with stitching charge.

Daily 100 grams of protein rich "sundal" is distributed to 10<sup>th</sup> std & 12<sup>th</sup> std students during special class everyday. Exclusive art labs are introduced to train students in fine arts and to play musical instruments. Smart class rooms are introduced in every school to face the various challenges.

CCTV surveillance cameras have been established in all the Higher Secondary schools for safety of students. The students studying in Greater Chennai Corporation schools are actively encouraged to read "Tamil and English" newspapers daily at school. Priceless uniforms and chappals are given to all the kinder-garten students, on par with other schools.

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 in the play parks. Two Amma Residential Schools are being maintained by Greater Chennai Corporation namely, Chennai Girls Higher Secondary school in Saidapet and Chennai Higher Secondary School in Subbarayan St, Chetpet for the children coming from down trodden families with 100% passing result.

### **3.9 Chennai Mega City Development Mission**

With a view to achieving the vision of developing Chennai as a world class city with infrastructure built to international standards, the Hon'ble Chief Minister of Tamil Nadu has announced a path breaking scheme called Chennai Mega City Development Mission (CMCDM). Under this special scheme, the Government has sanctioned an unprecedented amount of `1488 crore over the last 5 years to the Greater Chennai Corporation.

Under this scheme, the roads to a length of 1146.67Km, storm water drain network to a length of 170.69Km, footpaths to a length of 238.83Km and installation of 12,952 LED street lights have been completed at the cost of `1313.15 crore and put into use for the citizens. Due to effective and speedy implementation of this scheme, the long awaited aspirations of the

people living in the extended areas of Greater Chennai Corporation of having infrastructure at par with the core city areas are fulfilled phenomenally.

### **3.10 Road Maintenance Programmes**

The Greater Chennai Corporation maintains 471 Bus Route Roads to a length of 387Km and 33,374 interior roads to a length of 5,525Km. All the bus route road works are being executed with new initiatives and by using modern machineries.

As per the orders of the Hon'ble Chief Minister of Tamil Nadu, for the first time in the history of Greater Chennai Corporation reputed Project Management Consultant has been engaged to monitor, execute, and to assure

quality and to certify for the payments of all the bus route road works.

For the first time, all the Bus Route Roads have been milled to ensure that the height of the road do not increase and to ensure smooth riding surface using sophisticated milling machines. Three layers have been laid namely profile correction, strengthening layer (DBM) and wearing layer (BC).

For the first time, all the Bus Route Roads are finished with 9 metre (30 feet wide) electronic sensor road laying paving machines to give the best finish and riding quality. The quality of all roads have been checked at 5 levels.

For the first time, all the finished roads are provided 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 breakers, signage

boards etc., are taken up to give a enhanced riding performance on par with the best roads laid anywhere.

By using this type of specialized modern techniques, in the financial year 2015-16, 194 Bus Route Roads are taken up for improvement and completed to a length of 168 Km at an estimated cost of `414.59 crore. To implement the above scheme the Government has sanctioned a grant of `74.88 crore under TURIP 2014-15 and `242.24 crore under CMCDM scheme 2015-16. In the financial year 2015-16, the Government has sanctioned a grant of `161.70 crore under TURIP to lay 92 Bus route roads to a length of 72.65Km. All the works will be completed by the end of August 2016.

The Government have also sanctioned `75.45 crore for temporary restoration of

damaged 103 Bus Route Roads in the recent flood 2015 to a length of 40.82Km from State Disaster Response Fund (SDRF) and all the works will be completed by the end of August 2016.

The roads thus laid have withstood the unprecedented rainfall the city has never experienced in the last 100 years. Also no damage has occurred even in the consecutive two concentrated rainfall and the hottest summer of the decade. This is the evidence that roads are laid to the best of quality.

In the last 5 years, for the first time in the history of Greater Chennai Corporation out of 33,374 interior roads, 17,056 damaged roads were taken up for relaying and completed at the cost of `2474.41 crore.

In the financial year 2015-16, interior roads under TUFIDCO (MIDF) Phase I,II , Capital funds and State Disaster Response fund (SDRF) 2015,

totally 8137 roads have been taken up for improvements at an estimated cost of `704.19 crore of which 5377 roads have been completed. The balance roads are scheduled to be completed by the end of August 2016.

### **3.11 Promotion of Non Motorised Transport**

Greater Chennai Corporation is the first Municipal Corporation in India to adopt and implement Non-Motorised Transport (NMT) Policy and these initiatives are promoting this 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. 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 34 Bus Route Roads at the cost of `21.88 crore in the first phase which is well appreciated by society and 12 footpath works at an estimate cost of `34.75 crore are in progress.

For the first time, the level of the footpaths are kept at 15cm height uniformly throughout the length of the footpath for the benefit of pedestrians and physically challenged people on wheel chairs. All the road junctions are connected with table top crossings which also acts as speed breakers.

Greater Chennai Corporation is providing ramps to all the property entrances and shifting the junction boxes, transformers and other structures of service utility departments to the edge of the footpath for providing obstruction free footpath. Granite bollards are being fixed across the footpath to avoid parking of vehicles.

Footpath thus constructed has brought in accolades from all the quarters. Greater Chennai Corporation has received 5 National level awards for this project.

### **3.12 Special Project :-**

#### **Marina Beautification Project**

As part of overall comprehensive redevelopment of Marina beach, it was proposed to reconstruct the existing compound wall on the western side corridor of Kamarajar Salai. The existing damaged, buried pillars are being relocated and new pillars are proposed wherever necessary, so that it gives a timeless elegance. Ornamental non-corrosive cast iron grill work between the pillars are being done. The existing footpath abutting the compound wall is also being relaid. The total cost of the project is `33.10 crore.

So far 90% of the work is completed and scheduled to finish by October 2016.

### **3.13 Work to be taken up during 2016-17**

#### **3.13.1. Pedestrian Plaza at Thyagaraya Road:**

Pondy Bazaar area in T.Nagar is one of the most popular shopping avenues in Chennai city and it is being redesigned and developed as an exclusive pedestrian zone. This would be achieved by regulating the existing vehicular traffic flow and it is also envisaged to provide a continuous pathway and cycle track all along the street with an exclusive dedicated bus service corridor which will negate the need for cars to commute to the market. The street will be accessible to all, especially to disabled persons. Street furniture, signage boards and a multi-level car parking are proposed as part of this project. This project will be executed under Tamil Nadu Sustainable Urban Development Project (TNSUDP).

### **3.13.2. Smart city :**

Chennai City has been selected as one of the 20 "SMART CITIES" by the Ministry of Urban Development, Government of India. The "Chennai Smart City Limited " is formed as limited company with Government of Tamil Nadu and the Greater Chennai Corporation jointly having 50:50 share.

Chennai's Smart 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 including metro rail, high quality buses, improved infrastructure for walking and cycling, as well as uniform carriage ways for personal transport. Better street lighting, improved solid waste and storm water management, as well as continuous water supply are some of the other initiatives proposed.

Thyagaraya Nagar has been selected under area-based development based on the citizens ideas and suggestions which will have 40 components costing `877.92 crore. Also under Pan city initiative 8 components have been identified at the cost of `488.31 crore.

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

Under AMRUT 2015-2016 a sum of `11.00 crore have been sanctioned to the Greater Chennai Corporation for the development of 8 parks.

### **3.14 Bridges**

In order to ensure hassle free movement of traffic, the Greater Chennai Corporation maintains Bridges, Culverts, Foot over Bridges and Causeways across major Rivers and Canals, Rail Over Bridge across Railway Crossings, Flyovers

across road intersections in total 272 locations and 16 Subways in Railway Crossings, 6 Pedestrian Subways in important Bus Route Roads. During the last 5 years, Greater Chennai Corporation has completed construction of new 5 over bridges, 10 minor bridges, 3 subways and improvements to the existing flyover/bridges in various locations at an estimated cost of `114.95 crore including the construction of Rail over bridge at Kathivakkam High road – Cochrane Basin road was completed at an estimate cost of `16.66 crore inaugurated by the Hon'ble Chief minister of Tamil Nadu and put in use for the public on 28.02.2016. This ROB is beneficial to 5 lakh people in and around Korukkupet area. Further, construction and renovation of 21 bridges at an estimated cost of `21.20 crore are under progress and will be completed by December 2016. Tender has been called for construction of integrated ROB

in lieu of existing LC 2A at Ennore High Road and LC 2B at Manali Road in Dr.R.K Nagar Assembly constituency.

### **3.15 Street Lighting**

The total number of street lights being maintained by Greater Chennai Corporation is 2,57,689. The objective is to provide uniform street lighting with energy saving fittings, throughout the city for the safety of women, elderly persons and other road users. Street lighting in the newly added areas are being provided as per the norms followed in the core city. LED street light fittings which consume 45% lesser power than sodium vapour lamp street light fittings are being provided in the newly added areas. The project of providing 1,10,000 LED street light fittings at a total cost of `322 crore for the newly added areas has commenced and 79,988 new LED street lights have already been

installed. It is worth mentioning that no other municipal corporation in the country has installed such large numbers of LED street light fittings as in Chennai. The installation of the balance 30,012 LED Street lights in the newly added areas at a total cost of `145.64 crore will be completed before August 2016. In Greater Chennai Corporation every month current consumption charges of `6.00 crore were being paid to TANGEDCO for Street lights. After conversion to LED street lights, the monthly current consumption is reduced to `4.50 crore. Hence `1.50 crore is saved every month in current consumption charges towards Street lights.

### **3.16 Storm Water Drains**

In order to prevent flooding in Chennai City, Greater Chennai Corporation maintains a total Storm Water Drain Network of 1,894Km

comprising of 7,351 drains. Besides this, the Greater Chennai Corporation also maintains 30 canals for a total length of 48.80Km that include Kodungaiyur Canal (5.28Km), Captain Cotton Canal (3.04Km), Padi Kuppam Canal (2.78Km) to mention a few.

As a result of adding 345Km network of storm water drains over last 5 years at a cost of `569.12 crore, the number of flood prone areas in the Chennai Corporation has reduced to below hundred from about 300 earlier.

In accordance with the policy of Greater Chennai Corporation to provide adequate infrastructure facilities on par with erstwhile City area in the expanded areas with the objective of 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, up-

gradation in environmental conditions 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 1069.40Km of Integrated storm water drain network at a project cost of `4034.30 crore.

In the first phase in Zone-7, 11 and 12 of Greater Chennai Corporation, in the Coovum and Adayar basin, Storm Water Drain works for a length of 280Km, at a project cost of `1101.43 crore are in progress with World Bank funding, under Tamil Nadu Sustainable Urban Infrastructure Development Project (TNSUDP).

### **3.17 Solid Waste Management**

The generation of Municipal Solid Waste in Chennai city has increased to 5400 metric tonne

per day. At present, the primary collection consisting of door to door collection, has been carried out using 5422 tricycles of Greater Chennai Corporation. The secondary collection of solid waste has been managed 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.

During the years from 2011-12 to 2015-16, 295 Nos. of various types of vehicles consisting of 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 for solid waste removal purpose. Also, 7600 compactor Bins have been purchased at a total amount of `13.26 crore.

The Corporation deploys 18,975 conservancy workers including the workers of privatized zones. The attendance of conservancy workers are monitored through Bio Metric system in all the zones. A detailed route chart for compactor vehicles and tricycles has been drawn up to effectively 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 dresses for night conservancy work.

Further in Greater Chennai Corporation, as a solid waste management initiative, 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 and for integrated solid waste processing and 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 inception report. On receipt of final Detailed Feasibility Report, tenders will be called.

Out of 15 zones of Greater Chennai Corporation, 9 nos of 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.

Greater Chennai Corporation has been planning to make entire city, comprising 200 wards, open defecation free. Plan of action is, 30 wards will be made open defecation free during the year 2016-17, 70 wards during the

year 2017-18 and 100 wards during the year 2018-19. To achieve the above target, totally 18,900 toilet seats will be constructed. The requirement of toilet seats has been calculated based on slum and floating population of Chennai as per census 2011. To implement the above, 2,900 toilet seats will be constructed during the current year 2016-17, 6,600 toilet seats during the year 2017-18, 9,400 toilet seats during the year 2018-19.

## **4. Directorate of Town Panchayats**

Town Panchayats form the third tier of Urban Administration. The Town Panchayats Administration is striving to improve the standard of living of the people in Town Panchayats by providing better civic services, development of infrastructure facilities and promotion of employment opportunities in view of rapid growth of urban population.

### **4.1 Administrative Setup**

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

As per G.O.(MS)No.142 Municipal Administration and Water Supply (TP2) Department, Dated.21.11.2014, the Town

Panchayats are reclassified into four grades on the basis of their annual income as depicted below:-

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 exceededing `100.00 lakh	200
4.	Grade-II	Not exceeding `50.00 lakh	62
		<b>Total</b>	<b>528</b>

The Director of Town Panchayats is the Head of the Department. 17 Assistant Directors of Town Panchayats are looking after the administration at the zonal level and the Collectors of the respective Districts are entrusted with supervising the affairs of the Town Panchayats. Many Town

Panchayats are of tourism, pilgrimage and heritage importance.

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

Town Panchayats play a vital role in rendering civic services to the public. They provide a wide range of civic services to the public such as drinking water, street lights, sanitation, solid waste management, road connectivity, drains and pavements, burial grounds and slaughter houses. This apart, construction and maintenance of bus stands, community halls and markets are also under taken by Town Panchayats. Issuing birth and death certificates and trade licenses, levy and collection of taxes and fees, approval of building plans are the other primary statutory functions of the Town Panchayats.

### **4.3 Infrastructure Development**

Rapid urbanization and a high growth rate of urban population due to the migration from the neighbouring rural areas in search of employment, education, health and quality of life has resulted in increased demand for the provision of basic amenities such as water supply, solid waste management, underground sewerage schemes, roads, street lights, crematoriums, slaughter houses, parks and playfields etc., in Town Panchayats. Apart from encouraging the urban local bodies to improve their own resource base, the state government additionally is also transferring SFC devolution and supporting creation of urban infrastructure projects through its flagship mission mode programmes viz Integrated Urban Development Mission (IUDM), NABARD Loan assistance, Minimum Needs Programme etc.

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

The Hon'ble Chief Minister has unveiled 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 Town Panchayats are being implemented through Integrated Urban Development Mission. A sum of `1099.54 crore has been provided to Town Panchayats for taking up various infrastructure works required during the years 2011–2012 to 2015-2016 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	
2011-12	5275	5275	250.00

2012-13	569	552	248.04
2013-14	1043	900	284.96
2014-15	235	209	116.66
2015-16	27	0	199.88
<b>Total</b>	<b>7149</b>	<b>6936</b>	<b>1099.54</b>

#### 4.5 Water Supply

The Government is committed to provide minimum 70 LPCD of protected drinking water supply to the people in all Town Panchayats. The Town Panchayats maintain stand alone water supply schemes. The combined water supply schemes are being maintained by TWAD Board. All the 528 Town Panchayats are supplying drinking water 70 LPCD on daily basis. The following are the details of Water Supply level in Town Panchayats: -

##### Year wise additional capacity provided

Sl. No	Year	No of Town Panchayats	Demand (in MLD)	Supply (in MLD)	Additional capacity (in MLD)
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

From the year 2011-12 water supply schemes have been taken up under various schemes namely, Integrated Urban Development Mission, Infra 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, 5318 works are completed. 5296 works are executed by Town Panchayats and 22 works are executed by Tamil Nadu Water Supply and Drainage Board. Due to completion of the above water supply projects, additional quantity of 92.23 MLD water is being drawn and treated. Totally 776.23 MLD is being supplied from 528 Town Panchayats on daily basis without any interruption.

#### **4.6 Sanitation**

In 528 Town Panchayats sanitation is being maintained effectively in two modes. One is networking system i.e., underground sewerage system, another one is non-networking 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 Town Panchayats which endeavour to provide safe sanitation to the residents. Hence, the Under Ground Sewerage Schemes are being taken up in Town Panchayats in phased manner by availing the 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, Thirumazhisai,

Orathanadu, Palanichettipatti, Ulundurpettai and Sriperumbudur at an out lay of `219.86 crore. Out of which, the schemes have been completed in 3 Town Panchayats viz., Mamallapuram, Orathanadu and Thiruchendur Town Panchayat. The rest of 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 UGSS in Vellankanni Town Panchayat by State Government along with AMRUT. Conventional UGSS has been taken up in 8 Town Panchayats viz., Thiruporur, Ponneri, Periyanaickanpalayam, Perundurai, Manachanallur, Ayakudi, Vallam, and Kanyakumari at a cost of `375.48 crore through TWAD Board.

#### **4.6.2 Septage Management**

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 overtime. Septage management includes the process of design, collection, safe treatment & 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 rapid urbanization.

In view of the small size of the population, 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 Mamallpuram (Extended area)

As a Pilot scheme a sum of `4.93 crore has been sanctioned to implement Septage Management in Karunkuzhi Town Panchayat. Work order has been issued to implement the scheme using advanced treatment technology are in progress. After the outcome of the above pilot scheme, suitable decision has to be taken for implementation of the scheme in a phased manner in other Town Panchayats

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

Open defecation affects public hygiene and sanitation besides offending human dignity. The Government is determined to make Tamil Nadu an **Open Defecation Free State**. To achieve this objective, the Town Panchayats have undertaken a massive programme of construction of community toilets, repairs to existing toilets as well as an effective IEC campaign. During the survey conducted by Town Panchayats open defecation have been noticed at 1095 locations.

The details of works taken up 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 Scheme Construction of Community Toilet	432		17.02
<b>Total</b>			<b>1534</b>	<b>697</b>	<b>159.60</b>

1202 new community toilets have been constructed and 697 toilets have been renovated and put into use. The balance 332 community

toilets, construction works are in progress. Due to construction of the community toilets, out of 1095 identified Open defecation places, 910 are totally free from the open defecation.

In Town Panchayats a target of 3,60,577 House Hold individual latrines construction, conversion of 7794 numbers of insanitary toilets into sanitary toilets and construction of Community Toilet with 28,868 seats has been fixed with the Government of Tamil Nadu grant dovetailing with Swachh Bharath Mission. For the year 2015-16, the target fixed is, construction of 54,100 individual household latrines, conversion of 7794 insanitary toilets into sanitary toilets and construction of Community Toilets having 2619 seats. So far, 30,173 individual house hold latrines, conversion of 4857 insanitary toilets into sanitary toilets and construction of community toilets with 552 seats are completed.

#### **4.7 Roads**

Town Panchayats maintain 20314 Km of various types of roads which are as follows:

SI. No.	Type	Length (Km)
1	BT Roads	10,523
2	CC roads	4966
3	Paver Block	559
4	WBM Roads	1175
5	Gravel Roads	495
6	Earthen roads	2596
<b>Total</b>		<b>20,314</b>

During the year 2011-2012 to 2015-16 improvement of roads have been taken up under various schemes as detailed below:

SI No.	Year	Total No. of Roads	Total length (in Km)	Amount ( in crore)
1	2011-12	1908	1561	285.56
2	2012-13	1022	1166	334.40
3	2013-14	768	808	248.29
4	2014-15	694	743	231.02
5	2015-16	713	699	278.18
<b>Total</b>		<b>5105</b>	<b>4977</b>	<b>1376.45</b>

Out of 5105 road works, 4881 works have been completed and put into use for public. Remaining 224 works are under progress at various stages. Totally **4977** 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 2015-16, `631.51 crore has been allocated for 2308 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	58 works completed. Remaining 174

				works under progress
	<b>Total</b>	<b>2308</b>	<b>631.51</b>	

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

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

During the period, 2011-12 to 2014-15, 905 No. of roads to the length of 826Km has been taken up at a cost of `232.90 crore. All the works were completed and put into use.

<b>SI No</b>	<b>Year</b>	<b>No. of Roads</b>	<b>Length (in Km)</b>	<b>Amount ( crore)</b>
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1	2011-12	339	247	50.57
2	2012-13	191	222	50.00
3	2013-14	147	159	50.57
4	2014-15	228	198	81.76
<b>Total</b>		<b>905</b>	<b>826</b>	<b>232.90</b>

For 2015-16 with Tamil Nadu Urban Road Infrastructure Fund and Town Panchayat General fund contribution, 384 road works are taken up in 145 Town Panchayats for a length of 328.11Km at an estimate cost of `163.52 crore under Special Road programme. So far, 334 works are completed balance 50 works are in progress which are to be completed by August 2016.

#### **4.7.3 Plastic Roads**

Plastic in different forms is found to be almost 5% in solid waste, which is toxic in nature. It is a common sight in both urban and rural areas to find empty plastic bags and other type of plastic packing material littering the roads as well

as drains. Due to its poor biodegradability, it 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, Plastic road scheme is implemented with General fund work and other road schemes namely Environmental Protection and Renewable Energy Development Fund, Integrated Urban Development Programme, Tamil Nadu Urban Roads Infrastructure Improvement Scheme and other schemes. So far, 1220 plastic roads are laid by utilizing 1120.4 MT of plastic waste to a length of 1134.60Km with an expenditure of `321.40 crore. Since the year 2011, `2.77 crore is earned by Town Panchayats by means of selling collected plastic wastes.

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

At present, 1967 MT garbage is generated per day in the Town Panchayats of which organic waste constitutes 925 MT, in-organic waste 747 MT the remaining 295 MT is silt waste. The per capita generation of waste varies from 250 grams to 300 grams per day. The physical composition of the garbage in various Town Panchayats has been analyzed and the ranges are tabulated below: -

<b>Sl.No.</b>	<b>Type of Waste</b>	<b>In percentage</b>
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

For effective implementation of solid waste management in Town Panchayats, 9171 SHG members are involved in both collection and segregation of waste and 6846 sweepers are

deployed in street sweeping/collection of solid waste in Town Panchayats.

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

At present, bio composting is being successfully done in 461 Town Panchayats. Every day 99.09 M.T of bio compost is produced by Town Panchayats. A sum of `35.00 lakh is earned by Town Panchayats every month by selling bio compost. Totally, 908 M.T of bio-compost stock is available in the Town Panchayats.

Vermi composting is also being done successfully in 136 Town Panchayats. Every day 11.79 M.T of vermi compost is produced by Town Panchayats. A sum of `8.50 lakh is earned by Town Panchayats every month by selling vermi compost. Totally 233.00 M.T of vermi compost stock is available in the Town Panchayats.

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

From the year 2013-14 to 2015-16, 395 Town Panchayats have taken up Integrated solid waste management projects involving door to door collection, transportation, segregation, composting, scientific landfill and Information Education and Communication activities. So far, works are completed in 76 Town Panchayats. Remaining works are in progress.

Further, construction of bio methanation plants are taken up in Sholingur, Chengam, Periyanaickenpalayam, Vathalakundu and Uthamapalayam Town Panchayats at an estimated cost of `1.00 crore for conversion of food waste and vegetable waste into bio gas. The works are in progress.

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

The financial allocation under above programme aims to bridge the gap in providing Infrastructure facilities in Town Panchayats.

During the years 2011-12 to 2015-16, a sum of `266.88 crore has been allocated for 722 works such as construction of office building, water supply works, Solid Waste Management, Storm Water Drain, Slaughter House, Crematorium, Community hall, Shandy, Bus stand, Burial ground Improvement and ULB Contribution to the water supply / UGS scheme etc., under this scheme are as follows:

<b>Year</b>	<b>No. of works</b>	<b>Amount ( crore)</b>	<b>Remarks</b>
2011-12	155	20.99	All the works completed
2012-13	94	25.62	
2013-14	185	69.45	184 works completed and remaining 1 work (Vellalore Bus stand) under progress.

2014-15	230	85.38	223 works completed and remaining 7 works are under progress at various stages.
2015-16	58	65.44	3 works completed and remaining 55 works are under progress at various stages.
<b>Total</b>	<b>722</b>	<b>266.88</b>	

A sum of `71.40 crore has been provided in the Budget Estimate for the year 2016-17 under this Scheme.

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

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

During the years 2011-12 to 2015-16, a sum of `125.74 crore has 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 etc., under this scheme as follows:

Year	No. of works	Amount ( crore)	Remarks
2011-12	84	13.99	All the works completed
2012-13	169	17.09	
2013-14	112	27.42	
2014-15	111	34.25	All the works completed
2015-16	127	32.99	26 Works completed and the remaining 101 works are under progress at various stages.
<b>Total</b>	<b>603</b>	<b>125.74</b>	

A sum of `30.60 crore has been provided in the Budget Estimate for year 2016-17 under this Scheme.

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

The 14th Finance Commission grant is being allotted annually by 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 instalment under Basic Grant. The above grant was utilized towards payment of contribution to Water supply, UGSS, payment of E.B. Charges, payment of water charges, Solid waste Management, Laying of Road and footpath and Park Improvements.

For the year 2016-17, 14<sup>th</sup> Finance Commission basic grant 1<sup>st</sup> instalment `158.62 crore was allotted and released to 528 Town Panchayats.

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

Rain Water Harvesting Programme launched in 2001 has created 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 new buildings. To consolidate the gains, various measures have been taken up for rejuvenation of RWH structures created already in both 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 1916 water bodies maintained by Town Panchayats with an extent of 6286.84 acres. Total number of buildings in Town Panchayats is 24,30,512. Out of which 23,62,144 buildings are provided with Rain Water Harvesting facilities as mentioned in the following table.

Sl. No	Type of Buildings	No. of Buildings	No. of Buildings having RWH Structures
1.	Government Buildings	24,226	23,926
2.	Residential Buildings	22,45,375	21,78,886
3.	Commercial Buildings	1,48,979	1,47,400
4.	Industrial Buildings	11,932	11,932
<b>Total</b>		<b>24,30,512</b>	<b>23,62,144</b>

Out of 1,916 water bodies in Town Panchayats, so far 807 water bodies are restored under various schemes. The balance 1,109 water bodies will be taken up for restoration in a phased manner. Due to the above restoration activity, ground water harvesting capacity is 4.13 TMC.

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

The Government of India 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 stray dogs in all the Town Panchayats were estimated as 1,06,129. Out of which 90,494 were sterilized upto 2015-16. For balance 15,635 dogs action is being taken to sterilize and vaccinate out of which 1,422 dogs are sterilized.

#### **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

objectives of the scheme are 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 and all the works are in progress at various stages.

<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	42.20	Works will be completed by

Sl. No.	Name of the work	Project Cost ( in crore)	Stage of Progress
	Scheme		October 2016
3	Comprehensive Sewerage Scheme	77.11	Works will be completed by October 2016
<b>Total</b>		<b>123.75</b>	

#### 4.15 Green House Scheme

The Hon`ble Chief Minister has announced ambitious goal of ***Slum Free Cities*** under VISION 2023. As a part of this programme, Hon`ble Chief Minister has announced construction of 20,000 houses having a solar power photovoltaic roof top with a financial assistance of `2.10 Lakh, for the families belonging to Economically Weaker Section (EWS) living in Huts / Mud houses / Thatched houses in 528 Town Panchayats at a total cost of `420.00 crore.

Construction of 20,000 concrete houses with solar roof top has started and works are in progress. The Green houses scheme is implemented in convergence with the Housing for All scheme of the Central Government. So far, 149 Green houses are completed.

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

As a prelude to the implementation of e-governance in Town Panchayats, Government in principle have introduced GIS based on property tax system with a view to augment the property tax source by way of identifying un-assessed and under-assessed properties for improving collection of tax through GIS. For that a sum of `32.84 lakh sanctioned during the year 2013 for implementation of GIS based property tax in Ponneri Town Panchayat on a pilot basis. The project is completed and the income of the Town

Panchayats has increased by `6.00 Lakh per annum. GIS based property tax assessment will be expanded to other Town Panchayats.

#### **4.17 Street Lights**

There are 4,08,758 street lights including 969 High mast lights, 2662 mercury lights, 40,063 sodium lights, 2,65,588 Tube lights, 76,236 CFL lights, 3,234 Solar lights and 20,006 LED lights being maintained by Town Panchayats. All the street lights will be replaced by energy efficient lights in a phased manner.

#### **4.18 Award**

Government with a view to motivate the Town Panchayats to achieve bench mark service levels in provision of sanitation, water supply, solid waste management and other urban services, have instituted Awards to the best three Town Panchayats with an Award money of

`10.00 lakh, `5.00 lakh and `3.00 lakh respectively.

In the year 2014-15 the first 3 prizes have been awarded to Tharangambadi Town Panchayat of Nagapatinam District, Thiruvaiyaru Town Panchayat of Thanjavur District and Sirugamani Town Panchayat of Thiruchirapalli District respectively.

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

Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) was constituted in August 1978. CMWSSB 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.

Chennai Metropolitan Water Supply and Sewerage Board is currently providing services through 15 Area Offices and 200 Depot Offices covering an area of 426Sq.Km with a population

of 67.27 lakh (as per 2011 census). It also serves some local bodies, bulk and industrial consumers.

**Local bodies and major bulk consumers of CMWSSB**

<b>Sl. No.</b>	<b>Local bodies and Bulk consumers</b>	<b>Water supplied (in Million Litres per day)</b>
1	Pallavaram Municipality	1.90
2	Pammal Municipality	2.10
3	Anakaputhur Municipality	1.00
4	Avadi Municipality	0.80
5	Pozhichalur Village Panchayat	0.95
6	Cowl Bazar Village Panchayat	0.30
7	Railways & Government Hospital	12.00
8	Aavin	0.41
9	Cantonment – (Defence Offices & Quarters)	1.60
10	Hotels & Other Bulk consumers	4.28
11	Industrial consumers	25.68
<b>Total</b>		<b>51.02</b>

## 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

Surface water is one of the main sources for Chennai. 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.

#### Storage capacity of reservoirs supplying water to Chennai

Sl.No	Reservoir	Storage Capacity (in Mcft)
1	Poondi	3,231
2	Redhills (Puzhal)	3,300
3	Chembarambakkam	3,645

<b>Sl.No</b>	<b>Reservoir</b>	<b>Storage Capacity (in Mcft)</b>
4	Cholavaram	881
5	Veeranam	1,465
<b>Total</b>		<b>12,522</b>

New Veeranam water supply project was commissioned in 2004 as an additional source of water to Chennai city. 180 MLD of water is being supplied to the city from Veeranam lake throughout the year.

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 water receipts have been between 4.5 TMC to 8.2 TMC during the past many years. In the year 2015-16, the receipt of water till 31.08.2015 was 5.569 TMC. From

01.09.2015 onwards we have not received water from Kandaleru.

**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

**5.1.2 Desalination Plants**

The availability of surface water is mainly dependent on the rain fall during monsoon. 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. The Hon'ble Chief Minister in a far sighted move, announced the setting up of desalination plants in

2003-04. The Government has established two 100 MLD desalination plants which are currently operational at Minjur and Nemmeli. These plants contribute substantially for city water supply.

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

A 100 MLD (Million litres per day) desalination plant at Kattupalli, Minjur, 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 Nemmeli at a cost of `805.08 crore with assistance from Government of India. The plant was inaugurated on 22.02.2013 by the Hon'ble Chief Minister. The plant is under

operation and water from this plant is being supplied to the southern parts of Chennai viz., Sholinganallur, Neelangerai, Injambakkam, Karapakkam, Semmancherry, Thoraipakkam, Perungudi, Kottivakkam, Palavakkam, Thiruvanmiyur, Velachery, Taramani, Pallipattu, Adyar, Besant Nagar, Nandanam, MRC Nagar, Raja Annamalaipuram and Mylapore.

Deficit monsoons during 2012-2014 in the catchment areas have increased our reliance on desalination plants and these have helped ease the water supply situation in the city.

### **5.1.3 Ground water**

Ground water aquifers at Minjur, Tamaraiyakkam, Poondi and Neyveli supply about 25 MLD of water to the city.

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

The City's water supply has been reorganised due to the continuous failure of the monsoon in the years 2012 to 2015 and 540 MLD of water has been supplied. After attaining the comfortable storage level in the city's reservoirs due to heavy rain in 2015, presently the Board is supplying 830 MLD of water to Chennai city. Various projects have been taken up by CMWSSB to provide comprehensive water supply and sewerage services to the city's newly added areas.

CMWSSB operates water treatment plants at Kilpauk, Redhills, Chembarambakkam, Surapattu, Vadakuthu and desalination plants at Kattupalli-Minjur and Nemmeli for providing safe and potable water to the city.

## Treatment capacity of water treatment plants

Water treatment plants	Treatment capacity in MLD
Kilpauk	270
Redhills	300
Chembarambakkam	530
Vadakuthu	180
Surapattu	14
Desalination plants at Kattupalli-Minjur and Nemmeli	200
<b>Total</b>	<b>1494</b>

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

### Growth in Water supply operations

Description	In 1978	In 2016
Operational area (Sq.Km)	174	426
Population (in lakh)	28.60	73.11

<b>Description</b>	<b>In 1978</b>	<b>In 2016</b>
Water Supply (MLD)	240	830
Length of water mains (Km)	1,250	6610
Distribution stations	3	74
Water treatment capacity (MLD)	182	1,494
No. of consumers	1,16,000	6,73,339

The total revenue expenditure for the year 2015-16 is `1076.93 crore. The total income of the Board is `.830.67 crore. Of this, the income from Water and Sewerage Taxes is `147.46 crore, water and sewerage charges is `263.58 crore and other income is `64.63 crore. The Government of Tamil Nadu provides grants to the Board for purchase of desalinated water and other purposes. CMWSSB received a sum of `354.79 crore as grant during the year 2015-16.

## 5.2 Water supply – New Schemes

For augmenting water supply to unserved areas with special attention on covering the 42 newly added areas to Chennai Corporation, CMWSSB is taking up various schemes.

### Stage of Water supply schemes in 42 added areas

Total No. of added areas	Water supply works completed	Works under Progress	Works to be taken up
42	8	28 **	6

\*\* In Ullagaram-Puzhuthivakkam, Part of the water supply scheme is completed and the balance works will be completed shortly.

Water supply schemes have been completed in 8 added areas viz. Thiruvottiyur, Kathivakkam, Ambattur, Maduravoyal, Valasaravakkam, Porur, Alandur and Meenambakkam..

In 27 added areas namely Edayanchavadi, Sadayankuppam, Kadapakkam, Theeyambakkam, Vadaperumbakkam, Manali, Surapattu, Kathirvedu, Puthagaram, Puzhal, Chinnasekkadu, Madhavaram, Nerkundram, Ramapuram, Nolambur, Karambakkam, Manapakkam, Nandambakkam, Mugalivakkam, Pallikaranai Kottivakkam, Perungudi, Palavakkam, Sholinganallur, Karapakkam, Injambakkam 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 Government of India under AMRUT and other fund.

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

An announcement under rule 110 by the Hon'ble Chief Minister was made on the floor of assembly on 16.04.13 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 for setting up 150 MLD capacity desalination plant in the available vacant land of the existing Nemmeli desalination plant has been prepared at a cost of `1371.86 crore. This includes supplying and laying the product water conveyance main also. The Government of Tamil Nadu has accorded Administrative sanction for DPR. It is proposed to implement the project with 60% of project cost as loan from KfW, Germany and balance 40% of the project cost contributed by State Govt from its own resources including any Central Government schemes.

The loan agreement between KfW and Government of India was signed on 28.06.2016. Tenders will be invited soon.

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

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

The Hon'ble Chief Minister of Tamil Nadu has announced on the floor of assembly in 2013 that a 400 MLD desalination Plant would be constructed at Pattipulam along the East Coast Road in South Chennai. As the land proposed for the project was found to have some legal problems, the location

was shifted to a nearby site at Perur on the East Coast Road.

The Detailed Project Report for setting up the 400 MLD capacity SWRO desalination plant at Perur, has been prepared at a cost of `4070.67 crore. During scrutiny, the DPR has been revised for an estimate cost of `2891.70 crore and sent to Government of India for getting financial assistance under JICA. JICA has sent its study team to Chennai from 12.01.2016 for discussion and to scrutinise the documents for appraisal on the new desalination project. The fact finding mission of JICA has visited Chennai from 13.06.2016 and discussed with the officials of CMWSSB and the JICA study team. Based on the appraisal it is proposed to revise the DPR and the revised DPR will be sent to JICA through Ministry of Urban Development and Department of

Economic Affairs, Government of India for finalisation of financial assistance.

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

The work of laying, a second pipe line of 2000 mm diameter from Chembarambakkam Water Treatment Plant to Poonamallee bye-pass junction for a length of 6.5 Km to convey the full quantity of 530 MLD of treated water from Chembarambakkam to the city, at an estimated cost of `41.35 crore is under progress and is expected to be completed before March 2017.

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

The work of laying 900 mm dia. pumping main for transmission of water from the proposed Thervoykandigai reservoir to Krishna canal for a

length of 17Km is under progress and is likely to be completed by January 2017. The estimated cost is `93.77 crore.

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

The Chennai Mega City Development Mission to improve infrastructure and basic amenities in Chennai city with special focus on the newly added areas was launched by the Hon'ble Chief Minister. 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>Name of the scheme</b>	<b>Est. cost (crore)</b>	<b>Status of works</b>
<b>2011-12 Water supply Improvement Schemes</b>			
1	Laying of water supply lines in uncovered areas of Slums	23.56	Works completed
2	Providing Under	12.23	

	Ground Tanks and Water filling points in Newly Added areas		
3	Replacement of choked water mains / PVC mains	20.71	
<b>2012-13 Water Supply Schemes</b>			
4	Nolambur	18.00	Works will be completed by March 2017.
5	Karambakkam	20.56	Works will be completed by March 2017.
6	Ramapuram	32.54	Works will be completed by February 2017.
7	Manapakkam	10.92	Works will be completed by February 2017.
8	Nandambakkam	6.00	Works will be completed by October 2016.
9	Okkiyam-Thoraipakkam	46.00	Works will be completed by February 2017.

10	Injambakkam	22.30	Works will be completed by September 2016.
11	Sholinganallur-Karapakkam	35.70	Works will be completed by March 2017.

<b>2013-14 Water Supply Schemes</b>			
12	Sadayankuppam	28.21	Works will be completed by February 2017.
13	Edayanchavadi		
14	Kadapakkam		
15	Manali	21.33	
16	Chinnasekkadu	11.00	
17	Vadaperumbakkam & Theyambakkam	20.00	
18	Kottivakkam	23.00	Works will be completed by
19	Perungudi	45.00	Works will be completed by March 2017.
20	Palavakkam	30.00	Works will be completed by August 2017.
21	Surapattu	82.61	Works will be completed by April 2017.
22	Kathirvedu		
23	Puthagaram		

24	Puzhal		
25	Pallikaranai	42.82	Retender received and under evaluation.
26	Mugalivakkam	31.37	
<b>Total</b>		<b>583.86</b>	

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

Under the Jawaharlal Nehru National Urban Renewal Mission, the Government of India was giving a grant of 35% and the State Government was contributing 15% of the project cost as an interest free loan. The status of the works taken up under the scheme are: -

Sl. No	Name of the scheme	Est. cost ( 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	Part of the scheme completed and balance works likely to be completed by October 2016.
7	Nerkundram	19.17	Works will be completed by September 2016.
<b>Total</b>		<b>805.29</b>	
<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 September 2016.
2	Anakaputhur	14.87	Work will be completed by June 2018.
3	Sriperumbudur	42.20	Works will be completed by March 2017.
<b>Total</b>		<b>160.91</b>	

### 5.2.7 Japan International Cooperation Agency (JICA)

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

Scheme	Est. cost (` crore.)	Status of works
Madhavaram	55.00	Works will be completed by November 2016.

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

Sl. No.	Scheme	Est. cost (` in crore)	Status of works
1	Pammal	43.10	Works will be completed by September 2016.
2	Pallavaram	99.95	Works will be completed by April 2017.
<b>Total</b>		<b>143.05</b>	

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

Out of the total length of 6610Km of water distribution pipe line in Chennai city, about 914Km. of pipe lines were identified as more than 30 years old. Out of this about 258Km length of pipe lines were renewed under leak detection & rectification scheme with the financial assistance from World Bank and the scheme of Improvements to distribution systems in Chennai city under financial assistance from JnNURM and CMCDM. As a next phase to improve the distribution of water supply the Hon'ble Chief Minister has announced the proposal of renewal of chocked up water main, providing new water mains in left out streets and laying of feeder mains for a length of about 310Km at a cost of

`116.04 crore. Work order for this work will be issued shortly.

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

A project to lay a 1200 mm transmission main from Poonamallee bye-pass junction to Tambaram for a length of 22Km, to extend water supply to Tambaram, Pallavaram, Pammal and other local bodies has been sanctioned by Government at a cost of `93.48 crore from the Infrastructure and Amenities Fund. This work is under progress and is expected to be completed by August 2016.

#### **5.3 Sewerage services**

CMWSSB is providing sewerage services to Chennai city 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 769 MLD.

Sewage generated from houses and other buildings is collected through the sewerage system of a length of 4000Km. This sewage is taken through 232 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 13 Sewage Treatment Plants.

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

Sl. No.	Treatment Plant	Capacity in mld
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

Sl. No.	Treatment Plant	Capacity in mld
5	Villivakkam (1 unit : 5 mld)	5
6	Alandur (1 unit : 12 mld)	12
<b>Total - 13 units</b>		<b>769</b>

### **Sewage Treatment Plants under construction**

Sl. No.	Location	Capacity in mld	Estimate cost (' crore)	Present stage
1	Thiruvottiyur	31	26.33	Works will be completed by March 2017.
2	Sholinganallur	18	33.71	Works will be completed by December 2016.
<b>Total</b>		<b>49</b>	<b>60.04</b>	

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

### **Improvements in sewerage services**

Sl. No.	Description	In 1978	In 2016
1	Length of sewer mains (in Km)	1,223	4000
2	No. of pumping stations	58	232
3	Sewage treatment capacity (MLD)	57	769
4	No. of consumers	1,14,000	8,10,014

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

CMWSSB is implementing underground sewerage scheme in the added areas of Chennai city under Chennai Mega City Development Mission (CMCDM) 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: -

## Stage of Under ground Sewerage Schemes in 42 added areas

Total No. of added areas	Works completed	Works in progress	Works to be taken up	
			DPRs prepared	DPRs under preparation
42	4	16	11	11

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

In 16 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. For Mugalivakkam tender has been cancelled, estimate has been revised and retender invited.

For 11 added areas namely Manali, Chinnasekkadu, Edayanchavadi, Sadayankuppam, Kadappakkam, Nerkundram, Karambakkam, Manapakkam, Injambakkam, Okkiyam Thoraipakkam and Jalladampettai DPRs prepared and will be taken up under AMRUT and other funds.

Preparation of DPRs for providing under ground sewerage scheme for the balance 11 added areas viz. Puzhal, Mathur, Theeyambakkam, Vadaperumpakkam, Nandambakkam, Kottivakkam, Palavakkam, Neelankarai, Madipakkam, Semmencherry and Uthandi, will be taken up by engaging consultants.

**Sewerage schemes taken up under CMCDM**

SI. No	Name of the scheme	Estimate Cost ( crore)	Status of works
<b>2011-12 Sewerage Improvement Schemes</b>			
1	Laying of force mains between pumping stations	9.26	
2	Enlargement of Sewage Pumping Mains	20.39	

Sl. No	Name of the scheme	Estimate Cost ( crore)	Status of works
3	Insertion of UGSS manholes in Mogappair, construction of Roadside pumping stations with submersible pumpsets	14.08	Works completed and put into use
4	Improvement to existing Sewage Pumping stations	11.24	
5	Enlargement of sewer mains	31.18	
6	Procurement of sewerage maintenance equipments	9.90	Machines purchased and in use
7	Re-routing and enlargement of Sewage Pumping Mains and allied works	36.55	Works will be completed by December 2016.
<b>2012-13 Under Ground Sewerage Schemes</b>			
8	Kathivakkam	86.15	Works will be completed by September 2016.
9	Sholinganallur-Karapakkam	110.90	Works will be completed by March 2017.
10	Ramapuram	48.50	Works will be completed by March 2017.

Sl. No	Name of the scheme	Estimate Cost ( crore)	Status of works
11	Procurement of sewerage maintenance equipments	15.20	Machines purchased and in use
<b>2013-14 Under Ground Sewerage Schemes</b>			
12	Thiruvottiyur (Annai Sivagami Nagar)	8.51	Work completed and commissioned.
13	Nolambur	26.01	Works will be completed by August 2017.
14	Surapattu	35.00	Works will be completed by September 2017.
15	Puthagaram & Kathirvedu	60.00	Works will be completed by September 2017.
16	Mugalivakkam	54.79	Retender invited.
	<b>Total</b>	<b>577.66</b>	

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

Under the Jawaharlal Nehru National Urban Renewal Mission, the Government of India was giving a grant of 35% and the State Government

contributing 15% as an interest free loan. The works taken up under this scheme are: -

SI. 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	Works completed
<b>Under Ground Sewerage Schemes</b>			
2	Ullagaram-Puzhuthivakkam	28.08	Works will be completed by December 2016.
3	Ambattur (Package-II, III, IV & V)	130.91	Works completed under Packages III, IV & V). For Package II Work will be completed by March 2017.
4	Maduravoyal	57.45	Works will be completed by December 2016.
5	Porur	38.29	Works will be completed by September 2016.
6	Perungudi	20.19	Works will be completed by March 2017.

7	Pallikaranai	58.61	Works will be completed by December 2016.
<b>Total</b>		<b>375.30</b>	
<b>Deposit works for other local bodies</b>			
8	Avadi Municipality	158.05	Works will be completed by December 2016.
9	Tambaram Municipality	160.97	Works will be completed by March 2017.
10	Thirumazhisai Town Panchayat	20.47	Works will be completed by December 2016.
11	Sriperumbudur Town Panchayat	47.40	Works will be completed by March 2017.
<b>Total</b>		<b>386.89</b>	

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

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

#### Works Taken up under TNUDP-III

Sl. No	Name of the Scheme	Est. cost ( in crore)	Status of works
1	Madhavaram UGSS	50.22	Works completed
2	Thiruvottiyur UGSS	87.63	Works will be completed by October 2016.
3	Ambattur, Phase: I – UGSS	65.75	Works 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

Construction of new 54 mld sewage treatment plant at Sholinganallur has been taken up at a cost of `65.97 crore to treat the sewage

generated from added areas located along the southern part of Chennai city. This plant has been designed with latest treatment technology with provision for power generation using new technologies from 36 MLD sewage treatment units. Work order has been issued and work will be commenced shortly.

#### **5.3.5 Power generation from Sewage treatment plants**

In the last 9 years, CMWSS Board has commissioned 7 Nos. of Sewage Treatment Plants (STPs) with a total capacity of 498 MLD. In these plants, electricity is generated by using Biogas produced from the plants. This generated power is used to operate the sewage treatment plants.

**Power generation from Sewage  
Treatment Plants 2015-16**

Sl. No.	Sewage treatment plant	Treat ment capa city in mld	Average Power Produced in Kwh/day	Total power require ment in Kwh/ day	Percentage of power requireme nt met through in house production
1	Kodungaiyur	110	14,000	13,500	103.70
2	Koyambedu	60	5,000	9,000	55.55
3	Koyambedu	120	8,400	14,000	60.00
4	Nesapakkam-I	40	5,800	5,800	100.00
5	Nesapakkam-II	54	3,000	9,000	33.33
6	Perungudi I	60	7,200	8,500	84.71
7	Perungudi II	54	7,000	8,500	82.35
<b>Total</b>		<b>498</b>	<b>50,400</b>	<b>68,300</b>	<b>73.79</b>

This has reduced the dependence of the STPs on electricity drawn from the TANGEDCO Grid by about 74%. In the last 9 years, electricity worth `47.70 crore has been produced. In 2015-16, the value of electricity produced is `8.10 crore. This initiative is proposed to be

continued in the upcoming Sewage Treatment Plants wherever feasible.

The utilization of biogas for production of power reduces the emission of green house gases such as Methane (CH<sub>4</sub>) and Carbon dioxide (CO<sub>2</sub>) into the atmosphere and also consumption of Electricity from TANGEDCO.

#### **5.3.6 Mechanisation of sewer cleaning operations**

The Board has mechanized the operation and maintenance of the city's sewerage system. CMWSSB has procured adequate number of machines and is presently operating 119 Jet Rodding machines, 241 Desilting machines, 28 Jetting cum suction machines and 43 Super Sucker machines for effective maintenance of its sewer system.

#### **5.3.7 Preventive maintenance of sewer system**

CMWSSB is maintaining sewer lines of 4000 Km. to serve a total 8,10,014 consumers. Chennai city has a flat terrain and this is a challenge.

CMWSSB has now implemented preventive maintenance for its sewer network. According to the field conditions, sewers have been classified depending on the periodicity of maintenance required. Accordingly, the equipment is deployed and the sewer network is maintained by the Board.

The number of sewer blocks in the city has considerably reduced due to the implementation of Preventive maintenance.

#### **5.3.8 Plugging of sewage outfalls**

During the Budget 2012-13, it was proposed to plug 337 sewage outfalls at a cost of `300 crore. This would prevent untreated sewage from

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

In the first phase, 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 January 2017.

In the second phase, to carry out the balance works for plugging of 158 sewage outfalls, Government has sanctioned `163 crore.

Second phase works are proposed to be carried out under 7 Packages. Under Package- I Adyar river basin 60% of work completed. Work order issued for 3 Packages covering Buckingham canal and Cooum river basin. For the balance 3 packages tenders received and for 1 Package tender under evaluation. For the remaining 2 packages tenders rejected and for

one package tenders were received and under evaluation for the remaining one package tender has to be called for.

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

CMWSSB is also supplying 28.67 MLD of secondary treated water to M/s. Chennai Petroleum Corporation Ltd., M/s. Madras Fertilizer Ltd., and M/s. Manali Petro Products Ltd. The revenue accrued to the Board is `14.27 crore for the year 2015-16.

#### **5.3.10 Recycling of waste water**

To overcome water scarcity in Chennai city, CMWSSB proposed to use treated waste water for non-domestic uses. By this fresh water consumption for other than domestic use will get reduced.

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

Administrative sanction has been accorded by the Government of Tamil Nadu for 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 etc. at a cost of `394 crore. Work order for this work has been issued and work will be commenced shortly.

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

The Hon'ble Chief Minister of Tamil Nadu has announced on the floor of the Assembly that Government would promote reuse of treated waste water for industrial purposes in place of fresh water. To cater to the Industries and Power plants in North Chennai, another 45 MLD TTRO

Plant would be set up at Kodungaiyur at a cost of `255 crore with funding from TNSUDP. Administrative approval has been accorded by Government of Tamil Nadu. Tender for the above work has been received and under evaluation.

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

The Hon'ble Chief Minister has announced the sustainable water security mission to ensure continuous receipt of safe water in Chennai city. Under this mission it is proposed to expand and strengthen rain water harvesting by promoting campus rain water harvesting system, restoring and rejuvenating water bodies in and around Chennai city, recycling and reuse of waste water for non-potable usage and recharging water bodies.

#### **Campus Rain Water Harvesting**

Under campus rain water harvesting, works completed in five locations namely Presidency college at Chepauk, Government High School at Mathur, Bobbili Raja Government Higher Secondary School at Puzhal, Greater Chennai Corporation Zonal offices campus at Ambatur and Valasaravakkam.

### **Rain Water Harvesting In Temple Tanks**

Under rainwater harvesting in Temple tanks, works completed in Vadivudaiamman Koil temple tank at Thiruvottiyur and Madava Perumal Koil temple tank at Mylapore.

### **Rain Water Harvesting From Storm Water Drains**

To improve the ground water recharging by diverting rain water from storm water drain, works carried out and completed in the parks located Teachers colony 6<sup>th</sup> main road and 4<sup>th</sup> cross street at Kolathur.

## **Rejuvenation of Water Bodies**

Under restoration and rejuvenation of water bodies, works completed in Sholinganallur and Perungalathur tanks with the help of NGOs.

Tamil Nadu is the pioneer in implementing rain water harvesting (RWH) programme in the country. Thanks to the vision and efforts of the Hon'ble Chief Minister, CMWSSB started implementing the rain water harvesting programme in 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 7,82,670 buildings exist with a total no. of 8,47,500 RWH structures. During the year 2015-16, a total number of 10,500 rainwater harvesting structures were constructed. Recharge potential from Rain Water Harvesting structures is 2.60 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.

## **5.5 Grievance Redressal**

The Board has taken the following steps to improve service delivery, ensure transparency and speedily redress grievances of consumers.

#### **5.5.1 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 dialing 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, 85 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.

CMWSSB has implemented Short Message Service (SMS) to enable the consumer to register a complaint over mobile phone and get an acknowledgement for the complaint from the Board through SMS. Action taken is informed to the consumer through SMS after redressal of the complaint.

#### **5.5.2 Complaint redressal through website**

CMWSSB has a website [www.chennaiMetroWater.tn.nic.in](http://www.chennaiMetroWater.tn.nic.in). Consumers can register their complaints online through the Boards website. The complaints registered are forwarded to the respective Area Offices and the same are redressed within the norms of the Citizens' Charter.

### **5.5.3 Open House Meeting**

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 to improve service delivery. 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**

Tamil Nadu Water Supply and Drainage Board was formed as a statutory body on 14.04.1971 with the objective of providing protected water supply to the Rural and Urban population as well as Under Ground Sewerage Schemes to the urban local bodies in Tamil Nadu excluding Chennai Corporation. The Board office at Chennai is headed by the Managing Director supported by Technical, Financial and Administrative Wings. At present, the TWAD Board has four Chief Engineers with Headquarters at Vellore, Thanjavur, Coimbatore and Madurai and one Project Chief Engineer at Dharmapuri.

### **6.1 Activities of TWAD Board**

- a. Planning, Investigation, Design, Implementation and Commissioning

of Water Supply and Sewerage Schemes in Rural and Urban areas.

- 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 Government of India considering that 40 lpcd is the norm over the last 40 years, as an interim measure has enhanced the service level to 55 lpcd for the 12<sup>th</sup> Five year Plan. By 2017, it is targeted that at least 50% of Rural Population in the Country shall have access to 55 lpcd within their household premises or within 100 metres

radius (and within 10 metres elevation in hilly areas) from their households.

Water Supply Schemes to Rural Habitations are implemented based on surveys to assess the gap between current supply and the service standard. Rural Water Supply Schemes are being implemented with State Government Funds under the Minimum Needs Programme, Central Government Funds under the National Rural Drinking Water Programme and National Bank for Agriculture and Rural Development.

Water supply to Rural Habitations is provided by implementing Combined Water Supply Schemes. When the beneficiary is an individual local body, the scheme is handed over to the local body for maintenance on completion of the scheme and when the scheme is meant for more

than one local body, the scheme is maintained by TWAD Board.

In Tamil Nadu, as on 01.04.2016, there are 1,00,018 rural habitations. Out of this, 90,694 habitations are fully covered with water supply at 40 lpcd and the balance 9,324 habitations including 351 Quality affected habitations are partially covered.

During 2016-17, 3,269 Partially Covered habitations including 351 Quality affected habitations have been taken up for full coverage with water supply at 55 lpcd. Apart from the above, 5,588 partially covered habitations have already been taken up in the ongoing CWSS. It is proposed to cover the remaining 467 partially covered habitations during 2017-18.

### **6.3 Source Sustainability**

Besides implementation of water supply schemes, TWAD Board has taken measures to

augment ground water sources towards source sustainability by creating recharge structures such as check dam, recharge shafts, percolation ponds etc., under Government of India and State Government Assisted Programmes.

During the years 2011-12, 2012-13, 2013-14 and 2014-15, 3,348 Recharge Structures have been constructed at a cost of `228.24 crore.

#### **6.4 Combined Water Supply Schemes**

In order to provide sustainable and potable water supply to the public, TWAD Board formulates and implements Combined Water Supply Schemes in coastal, quality affected and needy areas by combining more than one local body and based on common source of water supply viz., Rivers, Dams and Reservoirs. Combined Water Supply Schemes are implemented by TWAD Board benefitting both urban and rural local bodies.

During 2015-16, 27 such schemes were under implementation at an estimated cost of `924.92 crore to benefit 27.79 lakh people with financial assistance from the Minimum Needs Programme, National Bank for Agriculture and Rural Development, the National Rural Drinking Water Programme, Jawaharlal Nehru National Urban Renewal Mission, Urban Infrastructure Development Scheme for Small and Medium Towns etc.,

The following 6 Combined Water Supply Schemes (CWSS), have been completed at an estimated cost of `94.55 crore, benefiting 3.15 lakh people.

<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>Estimate Cost ( in Crore)</b>	<b>Population (in lakh)</b>
1	CWSS to 212 Rural Habitations in Andhanallur, Manikandam and Manapparai Unions in Trichy District.	48.67	1.14

2	CWSS to 93 Rural habitations in Oddanchatram Union in Dindigul District (under Vedasandur CWSS in Dindigul District)	9.37	0.37
3	CWSS to 34 Rural Habitations in Manur and Palayamkottai Unions in Tirunelveli District	6.35	0.22
4	CWSS to 235 Rural habitations in Vedasandur, Gujiliamparai and Oddanchatram Unions in Dindigul District (under Vedasandur CWSS in Dindigul District)	5.50	0.73
5	CWSS to Udangudi Town Panchayat and 30 Habitations in Alwarthirunagari (Part), Thiruchendur (part), Sathankulam (part) and Udangudi (part) Unions in Thoothukudi District	9.19	0.30
6	CWSS to Zamin Uthukuli Town Panchayat and 63 rural habitations in Coimbatore District	15.47	0.39
	<b>Total</b>	<b>94.55</b>	<b>3.15</b>

Further, the following 18 Combined Water Supply Schemes at a cost of `640.76 crore to benefit a population of 20.31 lakh are in progress.

<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>Estimate Amount ( in crore)</b>	<b>Popula- tion (in Lakh)</b>	<b>Physical progress</b>
1	Augmentation of water supply to 185 habitations in 9 village panchayats of Karamadai union in Coimbatore District	42.94	0.81	96% works 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	95% works completed.
3	CWSS to 281 rural habitations of Jeyankondam Union in Ariyalur District	26.06	1.09	87% works completed.
4	CWSS to 158 Rural habitations in Gudimangalam and Udumalaipettai union in Tiruppur District	54.14	1.23	85% works completed

5	CWSS to Vellakoil, Kangayem Municipalities and 528 Rural habitations in Erode and Tiruppur Districts.	91.40	4.72	85% works completed.
6	CWSS to 90 Rural Habitations in Karungulam (Part), Srivaikundam (Part) and Thoothukudi (Part) Unions in Thoothukudi District	17.17	0.48	75% works completed.
7	CWSS to 60 Quality affected and 59 way side habitations in Kattumannarkoil Union and Lalpettai Town Panchayat in Cuddalore District.	18.16	0.60	65% works completed.
8	CWSS to 248 rural habitations in Kovilpatti (Part), Kayathar (Part), Ottapidaram (part), Vilathikulam (Part) and Pudur (Part) unions in Thoothukudi District	94.04	1.25	60% works completed.
9	CWSS to Athangaraipatty and 14 Habitations in Kadamalaikundu - Myiladumparai Union in Theni District.	2.65	0.07	60% work completed

10	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	60% works completed.
11	Augmentation of Water supply to 147 Rural Habitations of Alangulam and Sanakarankoil unions in Tirunelveli District	31.32	1.56	54% works completed.
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	54% works completed.
13	CWSS to Mulligur and 54 rural habitations in Mulligur, Ithalar and Nanjanadu Village Panchayats in the Nilgiris District	25.85	0.30	52% works completed
14	CWSS to 170 Rural Habitations in Manur (Part) and Palayamkottai (Part) Unions in Tirunelveli District	32.40	1.13	41% works completed.

15	CWSS to 101 rural habitations in Thoppampatti Union in Dindigul District (under Vedasandur CWSS in Dindigul District)	4.11	0.43	Trial run under progress & water supply effected to 57 habitations.
16	CWSS to 109 rural habitations in Oddanchatram Union in Dindigul District (under Vedasandur CWSS in Dindigul District)	4.08	0.59	Trial run under progress & water supply effected to 78 Habitations.
17	CWSS to 201 rural habitations in Reddiarchatram Union in Dindigul District (under Vedasandur CWSS in Dindigul District)	8.96	0.86	Trial run under progress & water supply effected to 94 Habitations.
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 under progress & water supply effected to 217 Habitations.
	<b>Total</b>	<b>640.76</b>	<b>20.31</b>	

The following 3 Combined Water Supply Schemes at a cost of `189.61 crore to benefit a population of 4.33 lakh are under Tender Stage.

Sl. No.	Name of Scheme	Estimate amount ( in crore)	Population (in lakh)	Remarks
1	CWSS to Vadugapatti Town Panchayat and 57 Habitations in Periyakulam Union and Horticultural College and Research Institute at Periyakulam in Theni district and Batlagundu Town Panchayat in Dindigul District.	45.70	0.92	Tender received and under scrutiny

Sl. No.	Name of Scheme	Estimate amount (in crore)	Population (in lakh)	Remarks
2	CWSS to 1262 Habitations in Vellakoil, Mulanur, Dharapuram, Kundadam, Kangayam Unions in Tiruppur District and Chennimalai Union in Erode District – Phase - II	91.16	2.72	Work Order to be issued
3	CWSS to 253 rural habitations in Kulithalai and Thogamalai Unions in Karur District	52.75	0.69	
	<b>Total</b>	<b>189.61</b>	<b>4.33</b>	

### 6.5 Major Combined Water Supply Schemes

During 2015-16, 14 major combined water supply schemes were under implementation at an

estimated cost of `5,192.18 crore to benefit 113.58 lakh people with financial assistance from the Minimum Needs Programme (MNP), National Bank for Agriculture and Rural Development (NABARD), National Rural Drinking Water Supply Programme (NRDWP), Jawaharlal Nehru National Urban Renewal Mission (JnNURM), Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT), Integrated Urban Development Mission (IUDM), KfW and HUDCO loan assistance.

➤ The following 3 Major Combined Water Supply Schemes, have been completed at an estimated cost of `2303.92 crore, benefiting 52.67 lakh people.

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Population (in Lakh)	Physical progress

1	CWSS to Melur, 2 Municipalities, 6 Town Panchayats and 1430 Rural Habitations in Madurai District and Singampunari Town Panchayat in Sivagangai District	784.00	15.92	Scheme completed and inaugurated by the Hon'ble Chief Minister on 28.12.2015
2	CWSS to Vellore Corporation, 11 Municipalities, 5 Town Panchayats and 944* Wayside Rural Habitations in Vellore District.	1295.00	24.46	
3	Augmentation of Water Supply to Palladam Municipality, 23 Town Panchayats and 965 Rural Habitations in Coimbatore and Tiruppur Districts	224.92	12.29	Scheme completed and inaugurated by the Hon'ble Chief Minister on 27.02.2016

	<b>Sub Total - I</b>	<b>2303.92</b>	<b>52.67</b>	
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Note: \*Water Supply to 25 Habitations will be effected on receipt of permission from National Highways Authority of India (NHAI).

The following 10 Major Combined Water Supply Schemes are in progress at a cost of `2748.04 crore to benefit a population of 59.23 lakh.

<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>Estimate Cost (in crore)</b>	<b>Population (in Lakh)</b>	<b>Physical progress</b>
1	CWSS to 1751 Rural Habitations in Pudukottai District and Vallam Town Panchayat in Thanjavur District	315.70	7.63	88% works completed.
2	CWSS to 1766 Rural Habitations in Pudukottai District and 125 Habitations in Sivagangai District.	301.50	6.65	85% works completed.
3	CWSS to Cuddalore Municipality, Bhuvanagiri and Parangipettai Town Panchayats and 812	260.54	7.75	84% works completed.

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Population (in Lakh)	Physical progress
	Rural Habitations in Cuddalore District			
4	CWSS to 1153 Rural Habitations and Peravurani, Adhiramapattinam and Perumagalur Town Panchayats in Thanjavur District	495.70	7.00	75% works completed.
5	CWSS to 295 Quality affected Habitations and 315 wayside Habitations in Nagapattinam District	105.70	3.70	70% works completed.
6	CWSS to 698 Rural Habitations in Nangavalli and Mecheri unions with bulk provision to 6 Town Panchayats in Salem District	158.64	3.93	54% works completed.
7	CWSS to Thondamuthur, 6 Town Panchayats and 134 Rural Habitations in Coimbatore District	130.46	1.83	45% works completed.
8	CWSS to 755 Rural Habitations in Virudhunagar District	234.00	6.51	35% works completed.

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Population (in Lakh)	Physical progress
9	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	44% works completed
10	CWSS to Azhagiyapandipuram, 8 Town Panchayats and 246 Rural Habitations in Kanyakumari District	109.80	2.96	30% works completed.
<b>Sub Total - II</b>		<b>2748.04</b>	<b>59.23</b>	

Further, the following Major Combined Water Supply Scheme is taken up for implementation at a cost of ` 140.22 crore to benefit a population of 1.68 lakh and is in tender stage.

Sl. No.	Name of Scheme	Estimate Cost (in crore)	Population (in Lakh)	Physical progress
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Sl. No.	Name of Scheme	Estimate Cost (in crore)	Population (in Lakh)	Physical progress
1	CWSS to 293 rural Habitations in Musiri, Thathaiyangarpettai, Thuraiyur and Uppiliyapuram Unions of Trichy District.	140.22	1.68	Work Order to be issued
<b>Sub Total - III</b>		<b>140.22</b>	<b>1.68</b>	
<b>Grand Total</b>		<b>5192.18</b>	<b>113.58</b>	

## 6.6 Revamping of Combined Water Supply Schemes

Revamping works are taken up in the age-old Combined Water Supply Schemes maintained by TWAD Board in which a reduction in yield of sources or a decrease in the efficiency of pumpsets and damages in pipe lines, valves due to road widening, etc. are encountered. These revamping works are carried out to make the CWSS fully functional and to enhance the supply to the designed level to the beneficiaries. During 2015-16, 5262 revamping works were completed

at a cost of `40.04 crore under SMS/ NRDWP / GoI National Calamity Fund / SDRF.

### Details of works completed

Sl. No.	Category	No. of works	Amount ( crore)
<b>Under NRDWP / SMS</b>			
1	Source Improvement	57	4.69
2	Replacement/Overhauling of Pumpsets	86	3.44
<b>Under SDRF / Contingency plan</b>			
3	Source Augmentation works	53	5.00
<b>Under SDRF / Flood relief Fund</b>			
4	Rectification of cable, pump sets, pipe line etc	86	2.00
<b>Under GoI Natural Calamity/Flood relief fund:</b>			
5	Source Restoration works	216	3.80
6	Replacement/Overhauling of Pump sets, Panel Board, cable etc	2389	9.10
7	Rectification of pipeline	2375	12.01
<b>Total</b>		<b>5262</b>	<b>40.04</b>

### 6.7 Water Quality Surveillance and Monitoring

In order to achieve the objective of ensuring safe drinking water supply to the public, TWAD Board has established one State level water testing laboratory at Chennai, 31 District level and 51 sub division level water testing laboratories all over Tamil Nadu. These laboratories have 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. This State level water testing laboratory at Chennai has been recognized as State Referral Institute for Tamil Nadu by the Government of India.

During the year 2015-16, 52000 water samples have been tested in state and district laboratories with State funds. In addition 82,000 water samples have been tested in the sub-division level laboratories for water quality monitoring and surveillance under NRDWP. 3,000

Field water testing kits were supplied to the Panchayats. 10,000 grass root level functionaries were trained for using Field water testing kits.

During 2016-17, it is proposed to test nearly 65,000 water samples in state and district laboratories with State funds. It is also proposed to test 1.53 lakh water samples in the 51 sub-division level laboratories for water quality monitoring and surveillance under NRDWP. Field water testing kits will be supplied to 12,524 panchayats. It is proposed to give training for 15,000 grass root level functionaries for using Field water testing kits. It is proposed to upgrade the state level water testing laboratory, Chennai for NABL Accreditation (National Accreditation Board for Testing and Calibration Laboratories).

### **6.8 Drinking Water Safety Week Campaign**

In order to create awareness on Water quality, the Government of Tamil Nadu is

conducting week long campaign every year on water safety.

The Drinking Water Safety Week Campaign ought to be conducted in 2015-16 has been conducted from 27.06.2016 to 03.07.2016. During the campaign 31 District rallies, 385 Block rallies, 6262 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. About 2 lakh water samples were collected and tested.

It is proposed to conduct Drinking Water Safety Week Campaign for 2016-17. During the campaign 31 District rallies, 385 Block rallies, 12,524 Panchayat rallies/meetings will be organized for creating water quality awareness. Field water testing kits will be given free of cost to all 12,524 panchayats. Teachers and pump

operators will be trained for water collection and testing. It is proposed to test nearly 5 lakh water samples.

## **6.9 Urban Water Supply Programme**

TWAD Board acts as Project Implementation Agency for Water Supply Schemes to Urban Local bodies. On completion, the schemes will be handed over to the respective local bodies for maintenance.

### **6.9.1 Urban stand alone Water Supply Improvement Schemes under Implementation**

During 2015-2016, 34 Water Supply Improvement Schemes are under implementation in 34 urban local bodies covering 17 Municipalities and 17 Town Panchayats, to benefit a population of 14.62 lakh, at a cost of ` 562.43 crore.

Among the schemes under implementation, 12 Water Supply Improvement Schemes in 3

Municipalities and 9 Town Panchayats benefiting a population of 3.65 Lakh, at a cost of ` 81.66 crore have been completed so far.

The remaining 22 Water Supply Improvement Schemes to benefit a population of 10.98 lakh in 14 Municipalities and 8 Town Panchayats at a cost of ` 480.77 crore are in various stages of progress.

In addition, 4 Water Supply Improvement Schemes to benefit a population of 6.83 lakh in 2 Corporations and 2 Town Panchayats at a cost of `373.82 crore are in tender stage.

#### **6.10 Operation and Maintenance of CWSS**

The CWSS covering more than one local body are being maintained by TWAD Board as per G.O. (Ms) No.84, Municipal Administration and Water Supply Department, dated 10.03.1994. As on

01.04.2016, 547 Combined Water Supply Schemes covering 8 Corporations, 66 Municipalities, 323 Town Panchayats, 46,438 Rural habitations and 532 Industries / Institutions, benefiting a population of 4.18 crore are being maintained by TWAD Board.

At present, an average of 1842 MLD of water is supplied through the above 547 Combined Water Supply Schemes as 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 MLD)</b>
1	Corporations	8	265	195
2	Municipalities	66	264	220
3	Town Panchayats	323	333	306
4	Rural Habitations	46438	1055	1026

5	Industries/Commercial Organisations	532	144	95
<b>Total</b>		<b>47367</b>	<b>2061</b>	<b>1842</b>

The expenditure for the Operation & Maintenance during the year 2015-16 is `588.86 crore. The Revenue collected through water charges is `261.04 crore.

To meet the gap between income and expenditure, the Government have released `140.00 crore during the year 2014-15 and `207.11 crore during the year 2015-16 as special grant.

### **6.11 Investigation and Preparation of Detailed Project Reports for Water Supply Schemes**

#### **6.11.1 Water Supply Schemes:**

During 2015-16, 32 Nos. of Water Supply Schemes, at an estimated cost of `10,920.53

crore, to benefit a total population of 126.34 Lakh are under investigation, as furnished in the table below.

Sl. No.	Description	No. of WSS	Beneficiaries	Population (in lakh)	Estimate cost (in crore)
1	Schemes sanctioned and tender to be called for.	5	3 Municipalities, 15 Town Panchayats & 1479 Rural Habitations	12.45	1004.40
2	Schemes in various stages of sanction.	8	7 Municipalities, 11 Town Panchayats & 2519 Rural Habitations	17.13	2052.06
3	Investigation in progress.	19	1 Corporation, 12 Municipalities. 51 Town Panchayats & 14,524 Rural Habitations	96.76	7864.07
	<b>Total</b>	<b>32</b>	<b>1 Corporation, 22 Municipalities, 77 Town Panchayats &amp; 18,522 Rural Habitations</b>	<b>126.34</b>	<b>10920.53</b>

### **6.11.2 Desalination Plants:**

As announced by the Government, Administrative Sanction has been accorded for `1355 crore, for setting up of Desalination Plants of 60 mld capacity each at Kuthiraimozhi in Ramanathapuram District and at Alanthalai in Thoothukudi District, benefiting a population of 3.20 lakh in Ramanathapuram District and 8.05 lakh in Thoothukudi District.

As of now, enter-upon permission has been obtained from the District Collectors for the land sites identified for setting up of Desalination Plants. Also, Environmental Impact Assessment Report has been prepared and the process of obtaining 'Coastal Regulation Zone - clearance' is in progress.

### **6.11.3 Formation of Water Supply Grid between Chennai and Bangalore exclusively for Industrial needs**

To meet out the industrial Water Supply needs and to encourage setting up of new industries along Chennai-Bangalore Industrial Corridor, TWAD Board had carried out detailed investigation. In all, 10,881 industries have been identified between Chennai and Hosur and grouped into 46 industrial clusters. To cater to the Water Supply needs of these industrial clusters, a Pre-Feasibility Report has been prepared.

As directed by the Tamil Nadu Infrastructure Development Board (TNIDB), Detailed Project Report for Ponneri and Hosur Industrial nodes are under preparation, as Phase-I.

Now the Government have entrusted the works in respect of Ponneri Industrial node to Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB).

#### **6.12 Under Ground Sewerage Schemes:**

TWAD Board is implementing Under Ground Sewerage Schemes in selected District Head quarters and other Towns.

In line with the objective of the Tamil Nadu Government to provide Under Ground Sewerage Scheme to all the Urban Local Bodies, TWAD Board has prepared 636 Detailed Project Reports at an estimated cost of `20,820 Crore to provide UGSS to 3 Corporations, 117 Municipalities and 516 Town Panchayats.

**6.12.1. Status of the Underground Sewerage Schemes under Implementation by TWAD Board**

During the year 2015-16, 9 Under Ground Sewerage Schemes to Theni-Allinagaram, Cuddalore, Udumalpet, Pudukottai, Nagapattinam, Thiruvallur Municipalities and Mamallapuram, Thiruchendur, Orathanadu Town Panchayats benefiting a population of 6.08 lakh at an

estimated cost of `387.01 Crore have been completed

Currently, 19 Under Ground Sewerage Schemes benefiting a population of 14.29 lakh at an estimated cost of `1012.16 crore are in various stages of progress.

In addition, 4 Under Ground Sewerage Schemes to Rameswaram, Sathyamangalam, Pollachi Municipalities and Velankanni Town Panchayat benefiting a population of 1.88 lakh at an estimated cost of `233.15 crore are in tender stage.

#### **6.12.2. Septage Management Projects:**

Currently Septage Management in Karunkuzhi Town Panchayat benefiting a population of 12,000 at an estimated cost of `4.93 crore is under implementation.

After assessing the success of this Pilot Septage Management 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:**

Scientific Source finding Activities are carried out for identification of sources for providing water supply to the various schemes taken up and implemented by TWAD Board. The state-of-art Technology for Remote sensing and GIS (Geographical Information Systems) are extensively utilized in Scientific Source Finding Activities and identification of suitable locations for Recharge Structures to be taken up under Sustainability Component.

The project on Ground water Prospect Maps (HGM Maps) sanctioned by the Ministry of Drinking Water and Sanitation, Government of

India had been taken up and district-wise ATLAS for Tamil Nadu was completed. Further, preparation of the Ground Water Quality maps for all Districts is completed and draft water quality maps have been submitted to National Remote Sensing Centre (NRSC), Hyderabad and GOI for final approval.

TWAD Board has taken up a Research & Development project for Tamiraparani River Basin falling part of Tirunelveli and Thoothukudi Districts for the Sustainability of Drinking water sources for future requirement. This project is under implementation at a cost of `2.75 crore for a period of 3 years under GoI Funds. The project commenced during June 2014. Automatic Water level recorders have been installed in 10 locations and data are being collected and analysed. 5 locations have been identified for installation of Automatic weather stations. High resolution Satellite Imageries have been procured from

NRSC, Hyderabad. The study is under progress and will be completed by May 2017.

TWAD Board has taken up a feasibility study to utilize the defunct Quarry as rain water harvesting cum water supply pond in Kancheepuram and Villupuram Districts in Tamil Nadu. This project is being implemented at a cost of `48.20 lakh. The project commenced during November 2014 and is funded by Government of Tamil Nadu. 6 Nos. of defunct Quarry sites have been identified in Kancheepuram and Villupuram Districts and the study is completed during June 2016 and the report is under finalisation.

Feasibility study to utilize the defunct quarries as Rain Water Harvesting cum Water Supply Pond in Kancheepuram and Villupuram Districts of Tamil Nadu was taken up and completed. Based on the study, 4 Quarries will be taken for the augmentation of drinking

water sources on pilot basis. 0.75 MCM of rain water may be harvested in the 4 quarries during the Monsoon periods. The harvested water may cater to the needs of 1,60,000 population in Vanur union of Villupuram District and Thomas Malai union of Kancheepuram District during the summer months.

#### **6.14 Management Information System**

The Tamil Nadu Water Supply and Drainage Board has implemented TWAD Board integrated E-Governance System (TWAD NEST) to manage data flow relating to all its schemes, Project Management, Financial Accounting, Human Resource, Billing etc. Online information is provided for physical and financial progress and performance of all water supply and sewerage, maintenance schemes, recharge structures etc. The daily pumping quantity, from the Head works of various water supply schemes maintained by

TWAD Board is also uploaded and monitored through online.

Online e-tenders submission is being implemented in TWAD Board. CAD Software for the design of water supply distribution network, sewer network design and analysis, Structural Analysis, etc. are used for the purpose of optimum planning and design.

The TWADNEST is enhanced from time to time based on the current requirement of the Board. Further the existing hardware and software are maintained and upgraded.

TWAD Board, Head office and five Chief Engineer's offices in Vellore, Madurai, Thanjavur, Coimbatore, Dharmapuri and four Superintending Engineers offices in Cuddalore, Trichy, Salem, Tirunelveli are interconnected through Video Conference (VC) System for effective review of works executed by TWAD Board all over the state.

This makes better coordination and effective monitoring of all the activities of the TWAD Board.

Mobile based online inspection monitoring system is implemented for effective monitoring of scheme progress. A web based online monitoring system has been implemented for effective monitoring of material quality testing in regional laboratories.

## **7. Tamil Nadu Urban Development Fund (TNUDF)**

Tamil Nadu Urban Development Fund (TNUDF) was established as a Trust, on a public-private partnership mode with the participation of 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 stakeholders 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 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 finances basic service projects such as roads, bridges, storm water drains, sewerage & sanitation, water supply, solid waste management etc., and commercially viable remunerative projects such as bus stands, market complexes etc, executed by ULBs.

It 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).

The total corpus of the Fund is `199.60 crore, of which a sum of `142.91 crore has been contributed by Government of Tamil Nadu and the balance amount of `56.69 crore has been contributed by ICICI, HDFC and IL & FS.

## **7.2 External Aided Projects**

TNUDF is operating two external lines of credit, 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 made available under the above lines of credit is `5286.55 crore (Table 1). Of the above, a sum of `3022.22 crore has already been committed to various projects / assignments.

**Table: 1 Size of External Lines of Credit**

(` crore)

Sl. No.	Components	TNSUDP	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 others	644.88	0	40.70	685.58
<b>Total</b>		<b>3831.00</b>	<b>578.16</b>	<b>877.39</b>	<b>5286.55</b>

**a) KfW (German Funding Agency) assisted Sustainable Municipal Infrastructure Financing –Tamil Nadu (SMIF – TN) Program**

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 (Part -1 and 2).

The Sustainable Municipal Infrastructure Financing –Tamil Nadu Phase-II – Part-1 (SMIF – TN-II-1) Program with the assistance of KfW, the German funding agency, was launched in 2012 and the Sustainable Municipal Infrastructure Financing –Tamil Nadu Phase-II – Part-2 (SMIF – TN-II-2) Program was launched in 2014 with an objective to contribute towards improvement of environment and preservation of natural resources and the living conditions of the urban population. The project implementation period of SMIF-TN-II-1 Program is from December 2012 to June 2018 and the implementation period of SMIF-TN-II-2 Program is June 2014 to December 2019.

The total outlay of SMIF-TN-II-1 Program is Euro 80 million (equivalent to about `578.16 crore). This will be provided as loan and capital grant to ULBs for implementing urban infrastructure projects.

The total outlay of SMIF-TN-II-2 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 `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) is earmarked as loan for Water and Sanitation Pooled Fund for development of Municipal Bond.

Considering the project outlay of SMIF-TN-II-1 Program and SMIF-TN-II-2 Program a sum of `1038.38 crore has been committed for 24 projects.

**b. World Bank assisted Tamil Nadu Sustainable Urban Development Project (TNSUDP)**

Considering the fund requirement for implementing urban infrastructure projects, financial assistance from World Bank under “Tamil Nadu Sustainable Urban Development Program (TNSUDP)” with an outlay of ` 3831 crore (US\$ 600 million) of which the World Bank assistance is `2554 crore (US \$ 400 million) was launched in March 2015. The project

implementation period is from June 2015 to March 2022.

Considering the project outlay of TNSUDP a sum of `1966.62 crore has been committed for 13 projects.

### **7.3 Water and Sanitation Pooled Fund (WSPF)**

Water and Sanitation Pooled Fund (WSPF), a fully owned Government Trust, has been created in the year 2002 to cater to the civic needs like water and sanitation in small and medium towns and raising resources from capital markets. This Trust has been created as a not-for-profit entity. The objectives of WSPF are:

- Provide financial assistance for setting up infrastructure projects,
- Mobilize resources from the capital market under pooled finance structure,

- Facilitate the participation of private sector in water and waste water sectors through direct investment and public private partnership,
- Enable urban local bodies to access debt finance from markets and
- Act as the Nodal Agency on behalf of Central and / or State Government for water, sanitation and / or any other infrastructure projects.

A sum of `222.30 crore (Table 2) has been mobilized by way of issue of bonds by WSPF.

**Table: 2 Details of resources mobilized by issue of Bonds**

SI.No.	Details	` crore
1	<b>9.20%, 15 year Non-Convertible Redeemable Bonds</b> Taxable bonds issued by pooling the requirements of 13 ULBs in the	30.41

SI.No.	Details	₹ crore
	year 2002.	
2	<p><b>7.25%, 10 year Tax Free Non-Convertible Redeemable Bonds under PFDF Scheme</b></p> <p>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.</p>	6.70
3	<p><b>7.50%, 10 year Tax Free Non-Convertible Redeemable Bonds under PFDF Scheme</b></p> <p>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.</p>	83.19
4	<p><b>10.60%, 10 year Non-Convertible Redeemable Bonds</b></p> <p>Taxable bonds (first tranche) issued by pooling the requirements of 10 ULBs in the year 2012 under SMIF-TN Program</p>	51.00
5	<p><b>8.71%, 10 year Non-Convertible Redeemable Bonds</b></p> <p>Taxable bonds (second tranche) issued by pooling the requirements</p>	51.00

SI.No.	Details	` crore
	of 10 ULBs in the year 2013 under SMIF-TN Program	
<b>Total</b>		<b>222.30</b>

Further, it is proposed to mobilize bonds of `80 crore under the KfW assisted SMIF-TN-II-2 Program during the financial year 2016-17.

#### **7.4 Chennai Mega City Development Mission**

The Government has launched the Chennai Mega City Development Mission (CMCDM) and has designated the Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) as the Nodal Agency for CMCDM. The funds under CMCDM will be made available to Greater Chennai Corporation (GCC) and Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) 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.

So far, projects costing `3209.16 crore have been sanctioned for which a sum of `2500 crore have been committed as grant. A sum of `1700 crore has been released by the Government and a sum of `1699.96 crore has been disbursed to Greater Chennai Corporation, Chennai Metropolitan Water Supply and Sewerage Board & Consultancy and Fees (Table 3).

**Table: 3 Funds committed under CMCDM**

(` crore)

Sl. No	Name of the Agency	Project Cost	Grant Committed	Grant Disbursed
1	Greater	1487.55	1274.24	1071.37

Sl. No	Name of the Agency	Project Cost	Grant Committed	Grant Disbursed
	Chennai Corporation			
2	Chennai Metropolitan Water Supply and Sewerage Board	1721.61	1217.86	625.89
3	Consultancy and Fees	7.90	7.90	2.70
<b>Total</b>		<b>3217.06</b>	<b>2500.00</b>	<b>1699.96</b>

### **7.5 Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL)**

Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) is a public limited company formed under the Indian Companies Act, 1956, 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. The other shareholders are ICICI Bank Limited, Housing

Development Finance Corporation Limited and IL & FS Financial Services Limited.

TNUIFSL manages the Tamil Nadu Urban Development Fund, Water and Sanitation Pooled Fund and various Government Grant Funds. TNUIFSL undertakes the functions of project development, project appraisal, project structuring, resources mobilization and fund management.

TNUIFSL provides a total solution for the promotion of urban infrastructure development, from concept to commissioning of the projects. The Company has been running profitably since its inception and is declaring a dividend regularly.

## **8. CHENNAI RIVERS RESTORATION TRUST**

In order to protect the waterbodies and waterways, and to carry forward its commitment, the Government of Tamil Nadu in its budget speech 2014-15 announced that the State is committed to improve the ecological conditions of rivers and water bodies i.e. Cooum, Adyar and Kosasthalaiyar rivers, the Buckingham Canal along with other smaller canals and water bodies in the Chennai Metropolitan Area.

The Government of Tamil Nadu has directed Chennai Rivers Restoration Trust to carry on its primary function of identifying, planning, coordinating and monitoring along with arranging for funds for the restoration activities of rivers and water bodies within Chennai Metropolitan Area. The Government of Tamil Nadu has directed that the approach to restoration of water bodies and rivers has to be an integrated one and all the

Line Departments have to be involved in restoration process. To achieve the goal set for it, Chennai Rivers Restoration Trust has taken various initiatives.

### **8.1 Ecological Restoration of Adyar Creek – Phase I**

The Government of Tamil Nadu conceived an ambitious and pioneering project in wetland conservation in the restoration of 358 acres Adyar creek and estuary. Initially restoration activities were undertaken in 58 acres of Adyar Creek.

The eco-park is functioning as a centre for environmental education and research activities. To impart knowledge on environment to the community, particularly for school children, regular environmental education programmes are being conducted. Till 15<sup>th</sup> July 2016, a total of 53,961 students and 3415 teachers from 769 schools have visited the Eco-park and experienced the concept of eco restoration. Further, a

Corporate Social Responsibility (CSR) fund has been received from TNUIFSL for conducting education programmes at Adyar Ecopark. In future, public sector undertakings will be approached for CSR funds for conducting education related programmes at Adyar Ecopark.

To impart environmental awareness and the efforts taken by Government in field of conservation and protection, Adyar Ecopark is open to interested general public from 11.7.2014 on every Tuesday and Thursday after online advanced booking. So far, a total of 1800 visitors have visited the Ecopark between July 2014 and 15<sup>th</sup> July 2016.

In order to evaluate the progress of restoration, regular ecological and biodiversity monitoring is being taken up. Periodical water quality monitoring is being conducted. The restoration process of Adyar Poonga, has to comply with Best-Designated-Use Class 'D' which

according to the CPCB guideline would allow propagation of wildlife and fisheries. The results indicate that the water quality is in class 'D' Best-Designated-Use that allows propagation of wildlife and fisheries.

### **Faunal Diversity in Adyar Poonga**

<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>
Molluscan	-	-	-	6	6	6
Crabs	-	-	4	9	9	9
Dragonflies	-	-	12	15	17	19
Butterflies	-	-	51	55	56	60
Fishes	14	27	27	10	10	6
Amphibian	7	10	10	10	10	10
Reptiles	19	19	19	19	19	19
Birds	88	90	98	100	97	99
Mammals	13	13	13	15	15	16
<b>Total</b>	<b>141</b>	<b>159</b>	<b>234</b>	<b>239</b>	<b>239</b>	<b>244</b>

### **Eco-restoration plan for Adyar Estuary (300 acres) Phase II**

In continuation of the restoration activities, the Government of Tamil Nadu has accorded sanction to restore the Phase II Adyar Creek and

Estuary (300 acres) for the estimated cost of ₹24.93 crore vide G.O (D) No.106, Municipal Administration and Water Supply (MC-1) Department, dated 01.03.2013. An eco-restoration plan has been prepared and the important activities proposed are to remove the debris, plastics and sludge from the creek, plantation of mangroves and native species, bioengineering technique to stabilize bunds and to enhance the biodiversity in the Adyar Creek and Estuary. As part of restoration activities, excavation of debris, plastics and sludge to enhance the tidal interaction and to increase the water spread in the degraded creek has been completed. For plantation of native species, removal of exotic and invasive species like *Prosopis juliflora* and bund stabilization has been completed and about 35,000 mangroves and 50,000 terrestrial species plantation is in process. The project completion is expected by August 2016.

## **Integrated Cooum River Eco-Restoration Plan**

The ecorestoration plan for the stretch of the river between Paruthipattu and the river mouth is 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.

The project is proposed to be implemented in three phases. The Short Term Plan covers a period of three years from 2014-15 to 2016-17 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 1646.52 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 (2015 – 2018) at an estimated cost of `604.77 crore.

Implementation of the sub projects has commenced through 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. Out of `604.77 crore, works worth `135.38 crore has been initiated by the line departments. Letters of Acceptance have been issued by the line departments for works worth `71.32 crore. Tender process for projects worth `156.83 crore has also been initiated.

#### **8.4 Master Plan for Phase III Adyar River Restoration from Origin to Mouth**

Adyar River has been under heavy anthropogenic disturbance for a very long duration and is highly degraded. The ecorestoration 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. The Master Plan for the Phase III Adyar River Restoration from Origin to Mouth is approved by Board of Trustees and the proposal has been sent to Government for seeking administrative sanction.

### **8.5 Master Plan for Waterways and Water bodies in Chennai Metropolitan Area**

For a holistic approach in restoring the degraded water bodies & waterways, CRRT has commissioned a study to prepare Master Plan for Restoration and Protection of Water bodies &

Waterways within Chennai Metropolitan Area covering an area of about 1189Sq.Km.

In this study, about 280 water bodies have been identified in the Chennai Metropolitan Area. The study and is expected to be completed by August 2016.

### **8.6 Detailed Project Report for Restoration and Protection of Water bodies**

The Government of Tamil Nadu has taken up an initiative to revive and rejuvenate the following water bodies in Chennai Metropolitan Area and Detailed Project Reports are being prepared:

<b>Implementing Department/ Organization</b>	<b>Name of the Waterbodies</b>	<b>Status</b>
Public Works Department	Madhavaram, Ambattur and Korattur Eri	Sanctioned under Environment protection and Renewable Energy Department fund and under progress.
Corporation of Chennai and Pallavaram ULB	Narayanapuram Eri	The projects are proposed under the World Bank funded

<b>Implementing Department/ Organization</b>	<b>Name of the Waterbodies</b>	<b>Status</b>
Pallavaram Municipality	Zamin Pallavaram Eri, Periya Eri and Kilkattallai Eri	"Tamil Nadu Sustainable Urban Development Fund (TNSUDP)" for implementation.
Chennai Metropolitan Water Supply and Sewerage Board	Restoration of Paruthipattu Lake, Avadi	The Detailed Project Report is completed and the report is forwarded to CMWSSB for further action.
Corporation of Chennai	Kadambakka m Lake, Nesavalur Nagar Lake	The draft report submitted by the consultant. The final report is expected in August 2016.
Chennai Metropolitan Water Supply and Sewerage Board	Kolathur Lake, Velachery Lake	
Chennai Metropolitan Development Authority	Nanmangalam Eri, Kovilambakkam Eri	

## **9. TAMILNADU URBAN FINANCE AND INFRASTRUCTURE DEVELOPMENT CORPORATION**

TamilNadu Urban Finance and Infrastructure Development Corporation Ltd (TUFIDCO) was incorporated under Companies Act, 1956 on 21-03-1990. The main objective of the Corporation is providing financial assistance and guidance to Local Bodies for their development schemes.

TUFIDCO is functioning as the Mission Directorate for the Smart Cities Mission and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Scheme.

It is also a Nodal Agency to implement Government programme / schemes in the State such as:

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**).

In addition, Government of Tamil Nadu has appointed TUFIDCO as 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**

The Smart Cities Mission is an initiative of Government of India launched during June 2015, to drive economic growth and improve the quality of life of people.

The Government of India have proposed to create **109** Smart Cities throughout India during the Mission period of five years. The Government of India have sanctioned 20 Smart Cities during the year 2015-16, and to sanction 40 Smart Cities in second year (2016-17). It is further expected that another 49 Cities would be sanctioned in the subsequent year (2017-18) throughout the Country.

All the 12 Municipal Corporations are covered under the Smart Cities Mission as recommended by Government of Tamil Nadu after going through "Intra-State Competition". The above said 12 Municipal Corporations have submitted the Smart Cities Proposals to Government of India. In Round -1, the Government of India have selected 20 cities nationwide to be taken up for development as Smart Cities for the year 2015-16. In the first round, Greater Chennai and Coimbatore Corporations have been sanctioned.

Under this scheme, an Area Based Development along with ICT enabled PAN City solution need to be implemented.

As suggested by Government of India, the remaining 10 Cities have improved their “Smart Cities Proposals” for second round competition and submitted the same to Government of India.

## **9.2 ATAL MISSION FOR REJUVENATION AND URBAN TRANSFORMATION (AMRUT)**

The Government of India have launched **Atal Mission for Rejuvenation and Urban Transformation [AMRUT]** scheme 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.

In Tamil Nadu the following towns are selected under this scheme: -

Sl.No	Name of theULBs	Sl.No	Name of theULBs
1.	Greater 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

### 9.2.1 FINANCIAL PATTERN:

The Government of India share and State Government share for the scheme are as follows:

SI No.	Population	Govt. of India Share– Grant	State Govt. Share– Grant	ULB's share
1	Cities with more than 10 lakh population	33.33%	20%	46.67%
2	Cities with below 10 lakh population	50%	20%	30%
3	Green space (all AMRUT cities)	50%	20%	30%

All the cities covered under AMRUT scheme have prepared Service Level Improvement Plan (SLIP) as per the prescribed guidelines for an amount of ` 50013 crore.

#### a) State Annual Action Plan (SAAP) 2015-2016:

The State Annual Action Plan (**SAAP**) 2015-16 has been prepared for a Central share of `1374.31 crore and approved by Government of India.

**b) State Annual Action Plan (SAAP)  
2016-2017:**

The Government of India have allocated `1582.80 crore under AMRUT for the year 2016-17. The Govt of Tamil Nadu has prepared State Annual Action Plan (**SAAP**) for an estimate amount of `3834.49 crore and got approval from Government of India.

**9.3 JAWAHARLAL NEHRU NATIONAL  
URBAN RENEWAL MISSION:**

**Urban Infrastructure and Governance (UIG)**

Under the Sub Mission, for a period of 9 years i.e, from 2005 to 2014, three mission cities,

namely, Chennai, Coimbatore and Madurai and their Urban Agglomerations have been taken up.

The Government of India have sanctioned 48 projects at an estimated cost of `5250.15 crore under this Sub Mission.

(` crore)

City	No. of Projects	Project Cost	GoI Share	GoTN Share	ULB share
Chennai	35	3585.43	1294.40	533.42	1757.61
Madurai	8	838.52	419.26	167.70	251.56
Coimbatore	5	826.20	413.10	165.24	247.86
<b>Total</b>	<b>48</b>	<b>5250.15</b>	<b>2126.76</b>	<b>866.36</b>	<b>2257.03</b>

Under the sub-mission, out of sanctioned 48 projects, 31 projects have been completed and the remaining 17 projects are at various stages of implementation.

#### **Transition Phase Projects (Period between JnNURM and New Schemes)**

During Transition phase of the JnNURM - UIG, 17 projects have been sanctioned by the

Government of India at an approved cost of ₹867.83 crore. Out of the sanctioned 17 projects 14 projects are under implementation and 3 projects are in the tender stage.

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

The UIDSSMT aims to develop infrastructure in all the towns except 67 Mission cities covered under the JnNURM-UIG component. Out of 122 projects sanctioned under the scheme at a cost of ₹882.73 crore, 116 projects have been completed and the remaining 6 projects are under implementation.

#### **Transition Phase Projects (Period between JnNURM and New Schemes)**

In the Transition phase of the UIDSSMT, the Government of India have approved 13 projects

for the cost of `507.41 crore. Out of 13 projects, 12 projects are under implementation. Jolarpet Municipality has to identify Sewage Treatment Plant site.

#### **9.5. Urban Infrastructure Development Scheme for Satellite Town (UIDSST)**

The UIDSST was launched by Government of India with the aim of creating infrastructure facilities in Satellite Towns situated near large Urban Centres. In TamilNadu, Sriperumbudur has been approved under the scheme. The following 3 projects have been sanctioned by the Government of India:

(` in crore)

<b>SI.No</b>	<b>Name of the Project</b>	<b>Approved Cost</b>
1	Water Supply Scheme	40.71
2	Underground Sewerage Scheme	56.22
3	Solid Waste Management	4.43

	<b>Total</b>	<b>101.36</b>
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Out of 3 projects, Solid waste management project has been completed and the remaining 2 projects are under implementation.

### **9.6 Metropolitan Infrastructure Development Fund (MIDF)**

TUFIDCO has created a revolving fund of **`1852.07 crore** from the phased out Megacity programme and it is the source fund for the Metropolitan Infrastructure Development Fund. Under the scheme, financial assistance has been extended to develop infrastructure in Chennai Metropolitan Area.

Under this programme, 34 projects have been sanctioned at an estimated cost of **`4342.65 crore** and the MIDF share is **`1141.82 crore**. Out of 34 projects sanctioned, 19 projects have been completed and the remaining 15 projects are in progress.

### 9.7 TUFIDCO Infrastructure Funding Scheme

In order to finance infrastructure projects in Urban Local Bodies and Government Agencies, TUFIDCO has created an Infrastructure Funding Scheme. The Share Capital, Reserves and Surplus of TUFIDCO and loans from Banks are source fund for this scheme.

Under this scheme, 5 projects have been sanctioned at an estimated cost of `260.24 crore during the year 2015-16

(` in crore)

SI No	Name of the ULB	Name of the Project	Project Cost	TIFS Loan	ULB Share
1	Pollachi	Construction of Whole sale shop at Gandhi Weekly Shandi	3.00	2.50	0.50
2	Coimbatore	Improvement of damaged roads	44.07	39.66	4.41
3	Tiruppur	Improvement of damaged roads	52.17	46.95	5.22
4	Erode	Improvement of damaged roads	86.53	77.88	8.65

5	Salem	Improvement of damaged roads	74.47	67.02	7.45
<b>Total</b>			<b>260.24</b>	<b>234.01</b>	<b>26.23</b>

### 9. 8. Integrated Urban Development Mission (IUDM)

A flagship programme called "Integrated Urban Development Mission (IUDM)" has been launched by the State Government during the year 2011 to improve infrastructure in urban areas. Projects Sanctioned

To meet the infrastructure needs of the Urban Local Bodies **13,445 Projects** have been sanctioned (fully funded/partly funded) at the estimated cost of **`10,773.22 crore** . The details are as follows:-

Sector	Total No. of works	` in crore		
		Project	Others scheme fund/ ULB Share	IUDM Share sanctioned
Water Supply	1061	3900.83	2558.47	1342.36
Sewerage	66	4589.96	3587.92	1002.04

Roads	3713	923.13	82.51	840.62
Storm Water Drains	2078	366.42	63.24	303.18
Solid Waste Management	1091	231.30	4.93	226.37
Street Lights	2963	551.80	315.87	235.93
Eradication of Open Defecation	2066	160.10	105.65	54.45
Others	407	49.68	6.44	43.24
<b>Total</b>	<b>13445</b>	<b>10773.22</b>	<b>6725.03</b>	<b>4048.19</b>

Out of 13445 Projects sanctioned, 12350 Projects have been completed. The remaining projects are under various stages of implementation.

### **9. 9 Fund Manager for the State Government Schemes**

With the intention of improving the Infrastructure in Urban Local Bodies of the State, 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) and appointed TUFIDCO as a Fund

Manager. During the year 2015-16, `234.45 crore has been released under IGFF and `104.42 crore under O&MGFF.

## **10. New Tirupur Area Development Corporation Limited**

The first Public Private Partnership project in the country was proposed in Tiruppur for provision of Water Supply and Sewerage to Tiruppur Municipality, adjacent areas and industries. Government signed a Concession Agreement with the then Tiruppur Municipality (now Corporation) and the Special Purpose Vehicle, New Tirupur Area Development Corporation Limited (NTADCL). The Agreement was 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. **The foundation Stone was laid on 20/06/2002 by the Hon'ble Chief Minister and the project was inaugurated in February 2006.**

Cost of the project was `1023 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.

This water supply project caters to the domestic water supply requirements of Tiruppur Corporation, (about 38.2 MLD) and 8 Village Panchayats and about 600 rural habitations covered in 5 Panchayat Unions on the wayside are benefitted by the project (about 17 MLD). A domestic sewerage system in major parts of Tiruppur Corporation has also been completed and functioning. Presently, around 7 MLD of sewage received from 15246 sewer connections is being treated. Low cost sanitation facilities (31 sanitary complexes) have also been implemented 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 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

additional water is being supplied 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 (3) 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, Vijayamangalam, Pallagoundanpalayam, Chengappalli, Sarkar-periapalayam and Agarharaperiapalayam resulting

in additional domestic consumption of around 9.0 mld.

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 50 MLD by Tiruppur Corporation, and 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. 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**

Tamilnadu Water Investment Company Limited was formed as a Special Purpose Vehicle on 27.01.2000 under Companies Act, 1956 by Infrastructure Leasing and Financial Services Limited (ILFS) and Government of Tamil Nadu as an investment Company to implement an Integrated Water Supply and Sewerage Project and to promote infrastructure development projects jointly with Government Institutions and Local Bodies.

Tamil Nadu Water Investment Company Limited is the promoter of New Tirupur Area Development Corporation Limited. Government of Tamil Nadu holds 46.15% of Share Capital of Tamilnadu Water Investment Company Limited. In addition to investment in New Tirupur Area

Development Corporation Limited, the Tamil Nadu Water Investment Company Ltd may invest in other institutions implementing infrastructure projects.

The objectives of the Tamil Nadu Water Investment Company Limited are to provide for carrying on other water related activities in addition to the business of merely an investment company, developing and financing of infrastructure projects (including Public Private Projects) in the water and waste water sector.

The Company has undertaken consulting assignments for water through TNUIFSL for Proof Checking of UGSS DPR's for 6 Town Panchayats (Ponneri, Thiruporur, Ayikudi, Kanyakumari, Vallam and Manachanallur cluster with S.Kannanur Town Panchayats), Tuticorin, Coimbatore and Sankarankoil Municipalities.

In addition, the Company has been engaged for preparation of Detailed Project Report for

Improvement to Water Supply distribution system for Bodinayakanur, Vellore, Coimbatore, Erode and Hosur Municipalities and 24x7 Water Supply Distribution System in the state of Jharkhand by IWL. Further, the Company has undertaken through CMWSSB proof checking of Detailed Project Report for Perumbakkam, Nerkundram and Gudapakkam Underground Sewerage Schemes

The Company provides Operation & Maintenance services to Seven Zero Liquid Discharge (ZLD) Common Effluent Treatment Plants (CETPs – Arulpuram, Rayapuram, Murugampalayam, Chinnakarai, Kasipalyam, Kunnakalpalayam, S.Periyapalayem) in Tirupur. Tamil Nadu Water Investment Company Limited has gained rich experience in the area of effluent treatment, water supply and sewerage systems.

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 utilised and vide

G.O (MS.) No. 132, MA&WS Department, dated 31.12.2012, Government of Tamilnadu ordered to nominate the Tamilnadu Water Investment Company Limited as Programme Management Agency (PMA) for implementing 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 Hon'ble Chief Minister of Tamilnadu announced a scheme in the Tamilnadu Legislative Assembly on 11.08.2014 for the rehabilitation of micro, small, medium scale textile bleaching, dyeing and its allied units in the districts of Namakkal, Erode, Salem and Karur nominating TWIC with the responsibility for carrying out the diagnostic study, preparation of Detailed Project Report, facilitating financial closure and advisory on Project Management Consultancy (PMC) /

O&M for each of the Projects under the scheme for establishment of Integrated Textile Processing Parks with Common Effluent Treatment Plants based on Zero Liquid Discharge for Micro, Small, Medium Bleaching and Dyeing Units in these 4 Districts.

TWIC has also been a knowledge partner and are Empanelled Consultant to the Ministry of Textiles, GoI, under the 12<sup>th</sup> Plan, for the IPDS scheme for establishment of CETPs with River/Marine ZLD.

Further the Company has been engaged under the National Mission for Clean Ganga for 5 Textiles clusters and one Tannery cluster in UP state and by HUDA for implementing ZLD systems in their Textiles clusters in Panipat.

World Bank Group / IFC also have engaged TWIC for implementing wastewater treatment

systems including ZLD for Konabari Textile clusters in Bangladesh

The turnover of the company from Operation and Maintenance Contract has gone up from `12.88 crore in the year 2014-15 to `18.89 crore in the year 2015-16. Further, the turnover from consultancy services has gone up from ` 4.11 crore in 2014 – 15 to `5.16 crore in 2015 – 16.

**S.P. VELUMANI ,**

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

**DEMAND No. 34**  
**MUNICIPAL ADMINISTRATION AND WATER SUPPLY DEPARTMENT**  
**Estimate of the amounts required for Expenditure in 2016-2017**  
**BUDGET ESTIMATE 2016-2017**

( In Thousands)

	Revenue	Capital	Loan	Total
DEMAND FOR GRANT - voted	6,953,95,79	4,590,12,58	275,93,62	11,820,01,99
APPROPRIATION- Charged	3	-	--	3

### Net Expenditure ( ` in Thousands)

Head of Account		2014-15 Accounts	2015-16 Revised Estimate	2016-17 Interim Budget Estimate	2016-2017 Revised Budget Estimate
2215	Water Supply and Sanitation	241,70,89	312,93,03	319,21,06	319,21,06
2217	Urban Development	991,21,39	484,16,61	508,46,95	603,64,48
2251	Secretariat – Social Services	7,44,77	7,50,69	8,41,96	8,41,96
2215	Other Rural Development Programmes	8,09,52	8,15,74	9,09,74	9,26,60
3475	Other General Economic Services	9,27,70	321,77,51	259,13,94	259,13,94
3604	Compensation and Assignments to Local Bodies and Panchayat Raj Institutions.	4,254,59,27	4,842,56,62	6,112,41,73	5,753,73,74
4215	Capital Outlay on Water Supply and Sanitation	1,340,77,38	1,104,19,03	1,664,12,54	1,364,12,54
4217	Capital Outlay on Urban	1,124,10,00	2,260,77,02	2,956,85,03	3,076,00,04

	Development				
4515	Capital Outlay on Other Rural Development Programmes	117,59,00	77,53,00	80,00,00	50,00,00
6215	Loans for Water Supply and Sanitation	63,36,72	17,28,54	24,63,62	24,63,62
6217	Loans for Urban Development	272,93,84	196,47,00	250,00,00	250,00,00
7610	Loans to Government Servants etc.,	--	60,00	50,00	50,00
7615	Miscellaneous Loans	26,84	80,00	80,00	80,00

**DEMAND No.34**  
**MUNICIPAL ADMINISTRATION AND WATER SUPPLY DEPARTMENT**  
**REVISED BUDGET ESTIMATE 2016-2017**

( ` in thousands)

SI No	Head of Department		Revenue	Capital	Loan	Total
1	34 01 Secretariat	Charged	1	--	--	1
		Voted	10,56,76	--	50,00	11,06,76
2	34 02 Commissionerate of Municipal Administration	Charged	1	--	--	1
		Voted	5,010,52,03	3,076,00,05	261,00,00	8,347,52,08
3	34 03 Directorate of Town Panchayats.	Charged	1	--	--	1
		Voted	1,694,91,63	50,00,00	--	1,744,91,63

4	34 04 Tamil Nadu Water Supply and Drainage Board	Voted	54,01	1,232,44,81	14,43,62	1,247,42,44
5	34 05 Chennai Metropolitan Water Supply and Sewerage Board.	Voted	231,95,63	231,67,72	--	463,63,35
6	34 06 Tamil Nadu Urban Finance & Infrastructure Development Corporation.	Voted	5,45,73	--	--	5,45,73
	<b>Total</b>	<b>Charged</b>	<b>3</b>	<b>--</b>	<b>--</b>	<b>3</b>
		<b>Voted</b>	<b>6,953,95,79</b>	<b>4,590,12,58</b>	<b>275,93,62</b>	<b>11,820,01,99</b>