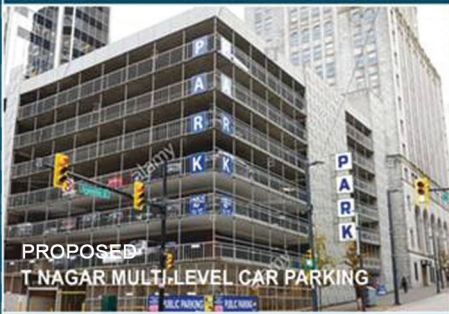




PROPOSED COIMBATORE LAKE IMPROVEMENT



PROPOSED T NAGAR MULTI-LEVEL CAR PARKING



PROPOSED T NAGAR PEDESTRIAN PLAZA



PROPOSED SALEM RIVER FRONT DEVELOPMENT



MUNICIPAL ADMINISTRATION AND WATER SUPPLY DEPARTMENT

POLICY NOTE 2018-2019
DEMAND NO. 34

S.P. VELUMANI

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

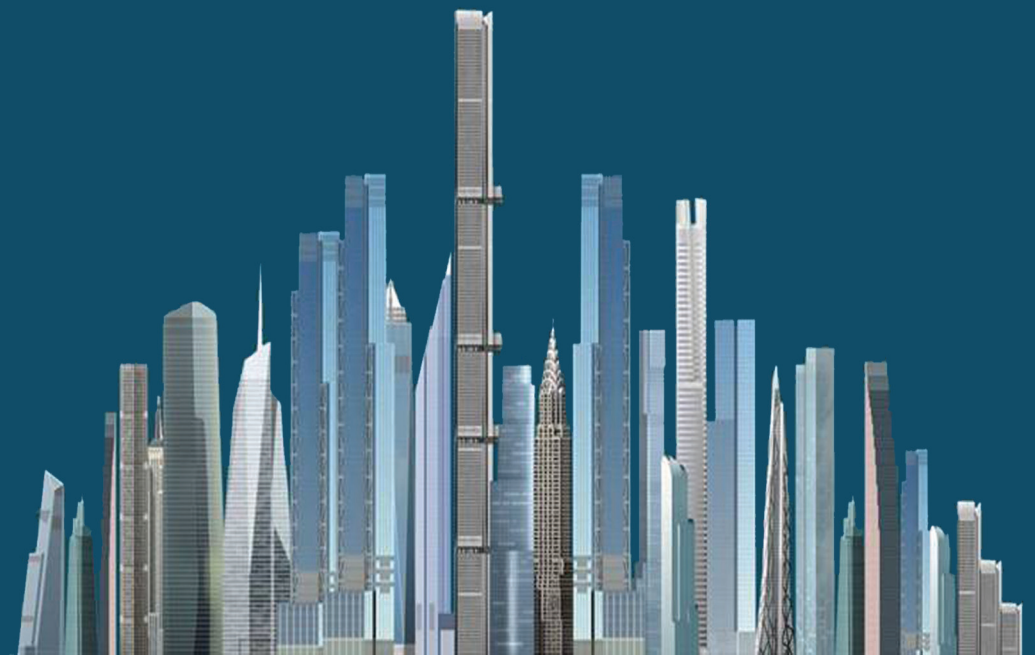


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DEMAND NO.34

MUNICIPAL ADMINISTRATION AND WATER SUPPLY DEPARTMENT

Policy Note – 2018-2019

1. Introduction

Urbanization refers to the gradual increase in the proportion of people living in urban areas. It is predominantly the process by which towns and cities are formed and become larger as more people begin living and working in such areas. Urban areas are highly influenced by the notion that cities and towns have achieved better economic, political, and social mileages compared to the rural areas.

1.1 Urbanization trend - world wide

According to UN World urbanization prospects 2018, 30 percent of the world's

population was urbanized in 1950 and it had increased to 54 percent by 2015 and by 2050, 68 percent of the world's population is projected to be urban as two out of every three people are expected to live in cities. Among the countries, India, China and Nigeria together are expected to account for 35 % growth in the world's urban population between 2018 and 2050.

Globally, the number of cities with 10 million or more inhabitants is increasing rapidly, and most of these new 'Mega Cities' are in the less-developed regions. In 1960, only New York and Tokyo had more than 10 million people. By 1999, there were 17 cities with more than 10 million people around the world, 13 of these were in less-developed regions. In 2016, 31 mega cities had a population of 10 million inhabitants or more in each city, out of which 24 cities are located in less-developed regions or the "global south".

The largest movements towards urban centers are taking place in Asia, Africa and Latin America. The majority of the most populous cities in the world are in the two most densely populated countries in the world, China and India. Tokyo is the world largest city with an agglomeration of 37 million inhabitants, followed by Delhi with 29 million, Shanghai with 26 million and Mumbai with 20 million inhabitants. And the fastest growing urban agglomerations are medium sized cities and cities with less than 1 million inhabitants located in Asia and Africa.

As the world continues to urbanize, sustainable development challenges will be increasingly concentrated in cities, particularly in the lower-middle-income countries including India where the pace of urbanization is fastest.

1.2 Urbanization trends in India

Urbanization in India began to accelerate after independence, due to country's adoption of a mixed economy. The growth of urbanization in India is basically through two ways, one is through an increase in the urban population, which will be natural and the second one is through migration, which is the result of people migrating from rural to urban areas and also from small towns/cities to big metros. In the year 1951, only 5 cities were having population of more than one million, which increased to 53 cities in 2011 and it is estimated that by 2031, there will be 70 cities in the country with million population.

Three cities were having more than 10 million population in the year 2011. it is estimated that six cities will be having 10 million populations by 2031. India's urban population in 2011 is 377 million, constituting 31.16% of the

total population (1211million). According to the survey by UN State of the World Population report in 2007, by 2030, 40.76% of the country's population is expected to reside in the urban areas. The Urban population share in India since 1901 is shown in the following table:

The Urban Population share in India

	1901	1951	1991	2001	2011
Total Population (Millions)	238	361	846	1028	1211
Urban Share (%)	10.84	17.30	25.72	27.71	31.16

Overall, urbanization in India is spreading out across the country, impacting almost every state. For the first time in Indian history, the nation is projected to have five large urbanized states including Tamil Nadu having the majority of their population living in cities than in villages.

1.3 Urbanization trends in Tamil Nadu

Tamil Nadu ranks first in terms of share of urban population among largest States in the country and third in absolute urban population. More people in Tamil Nadu have moved from rural to urban areas in the last 10 years compared to other states, according to the 2011 Census data. Evenly spread small, medium and major towns, migration of people from rural areas in search of employment and the presence of industrial estates in all districts contributed to the speedy urbanization of Tamil Nadu.

Tamil Nadu tops the list of urbanized states with 48.45% of its population living in urban areas, followed by Kerala, Maharashtra and Gujarat. In absolute numbers, Maharashtra has more than five crore people living in urban areas, higher than other states. Uttar Pradesh has four crore people in cities, and Tamil Nadu

comes in third with more than three crore population living in urban areas.

State	Urban Population in Lakhs	Percentage share of Urban Population to total population	Rank
Rajasthan	171	25%	8
Madhya Pradesh	201	28%	7
Karnataka	236	39%	4
Gujarat	257	43%	3
Andhra Pradesh	284	33%	5
West Bengal	291	32%	6
Tamil Nadu	349	48%	1
Uttar Pradesh	445	22%	9
Maharashtra	508	45%	2

In the last 20 years, the rate of urbanization in Tamil Nadu has been rapid. According to the 1991 Census, only 34.15% of

the total population in Tamil Nadu was classified as urban but in 2011, it has risen to 48.45%, an increase of 14.3%.

The projected percentage of urban population in Tamil Nadu by the year 2030 has been estimated as 67%, which will again 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.

Vision Tamil Nadu 2023 sets the Plan for infrastructure development for the State to reach the desired outcome by 2023 stressing on urban transportation, water and waste-water management, solid waste management,

housing, including low income housing. The focus of investments in urban infrastructure is to develop state-of art infrastructure, both physical and social, ensuring seamless connectivity between cities and the rest of the State.

Vision 2023 also aims to provide among others, high quality infrastructure along with smart governance all over the State comparable with the best in the world. It is proposed to put in place a system of integrated multimodal urban transport, including mass transit systems for faster mobility in cities and high speed rail connecting Chennai – Coimbatore - Madurai - Kanyakumari. It also provides piped and pressurized 24x7 water supply to the citizens and ensure that they have access to safe sanitation including open defecation free and garbage free environment.

1.4 Municipal Administration and Water Supply Department

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

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

under the control of Municipal Administration and Water Supply Department.

District wise Urban Local Bodies in the state of Tamilnadu are provided as below:

S. No	District	Corporations	Municipalities	Town Panchayats
1	Ariyalur	0	2	2
2	Chennai	1	0	0
3	Coimbatore	1	3	37
4	Cuddalore	0	5	16
5	Dharmapuri	0	1	10
6	Dindigul	1	3	23
7	Erode	1	4	42
8	Kancheepuram	0	9	17
9	Kanniyakumari	0	4	55
10	Karur	0	2	11
11	Krishnagiri	0	2	6
12	Madurai	1	3	9
13	Nagapattinam	0	4	8
14	Namakkal	0	5	19
15	Nilgiris	0	4	11
16	Perambalur	0	1	4

S. No	District	Corporations	Municipalities	Town Panchayats
17	Pudukkottai	0	2	8
18	Ramanathapuram	0	4	7
19	Salem	1	4	33
20	Sivagangai	0	3	12
21	Thanjavur	1	2	22
22	Theni	0	6	22
23	Thiruvallur	0	5	10
24	Thiruvannamalai	0	4	10
25	Thiruvarur	0	4	7
26	Thoothukudi	1	2	19
27	Tiruchirappalli	1	3	16
28	Tirunelveli	1	7	36
29	Tiruppur	1	5	16
30	Vellore	1	11	16
31	Villupuram	0	3	15
32	Virudhunagar	0	7	9
Total		12	124	528

The Departments and Organizations functioning under the administrative control of

Municipal Administration and Water Supply Department are as follows:

1. Commissionerate of Municipal Administration (CMA)
2. Greater Chennai Corporation (GCC)
3. Directorate of Town Panchayats (DTP)
4. Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB)
5. Tamil Nadu Water Supply and Drainage Board (TWAD Board)
6. Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL)
7. Chennai Rivers Restoration Trust (CRRT)
8. Tamil Nadu Urban Finance and Infrastructure Development Corporation Limited (TUFIDCO)
9. New Tiruppur Area Development Corporation Limited (NTADCL)
10. Tamil Nadu Water Investment Company Ltd (TWIC)

2. Commissionerate of Municipal Administration

The Commissionerate under the control of Municipal Administration and Water Supply Department is headed by the Commissioner of Municipal Administration assisted by Joint Commissioner, Additional Directors & Joint Directors at the State Level and 7 Joint Directors (one each for Chengalpattu, Vellore, Salem, Tiruppur, Thanjavur, Madurai and Tirunelveli regions) at the Regional level.

This Commissionerate is responsible for monitoring the functions of 11 corporations viz, Madurai, Coimbatore, Tiruchirappalli, Tirunelveli, Salem, Tiruppur, Erode, Vellore, Thoothukudi, Dindigul, and Thanjavur and 124 municipalities which are classified into different grades based on their annual income as detailed below.

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

2.1 Elected Representatives in Municipal Corporations and Municipalities

The elections to the Municipal corporations and municipalities are due to be conducted as per the 74th Constitutional Amendment Act, Category-wise post of Mayors, Municipal Chairpersons and Councillors are given in the following table:

Urban Local Bodies	SC (General)	SC (women)	ST (Women)	Women (General)	General	Total
Corporations (including Chennai Corporation)						
Mayors	1	1	--	5	5	12
Councillors	50	57	--	412	400	919
Municipalities						
Chairpersons	8	9	1	52	54	124
Councillors	225	286	3	1,0551	1,548	3,613

2.2 Infrastructure Development

The main function of Urban Local Bodies (ULBs) is to create infrastructure and ensure sustainable maintenance of all the amenities. The Government accords highest priority to the creation of quality and functional infrastructure. Works in urban local bodies are taken up by accessing financial assistance through various central/state government schemes and from external funding agencies like the World Bank,

German Development Bank (KfW), Japan International Cooperation Agency (JICA) and Asian Development Bank (ADB).

2.3 Water Supply

Provision and access to safe and adequate drinking water to every household in the urban local body is the priority of the Government. In order to improve the water supply situation, the Government has taken up various water supply project availing financial assistance from various external agencies and under various Government schemes such as Integrated Urban Development Mission (IUDM), JnNURM and AMRUT. These schemes are implemented by ULBs and in some cases by the para-statal agencies like Tamil Nadu Water Supply and Drainage Board (TWAD) and Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB).

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

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

ULB	Range	Status	No.of ULBs
Corporations	110 LPCD & above	Good	8
	70 to 109 LPCD	Comfortable	3
Total			11
Municipalities	90 LPCD & above	Good	66
	40 to 89 LPCD	Comfortable	58
	20 to 39 LPCD	Poor	0
Total			124

In the year 2011, a total of 1567.10 MLD of water has been supplied to all urban local bodies at an average rate of 93 LPCD. After the implementation of several water supply schemes under TNUDP-III, JnNURM, KfW, JICA, IUDM, IGFF and Capital Grant Fund the supply level has been increased to 1873.29 MLD and the corresponding per capita supply also increased to 113 LPCD during the year 2017-18.

2.3.1 Various water supply improvement scheme under taken in the recent past are given below.

2.3.1.1. Under TNUDP III, 13 schemes have been completed out of 17 water supply improvement schemes taken up at an estimated cost of ₹ 661.65 crore, of which the supply level has increased in 13 completed ULBs as follows:-

Sl. No	Name of the ULB	Project cost (₹in crore)	Daily Water Supply Service Level			
			Before Implementation of the Scheme		After Implementation of the Scheme	
			Quantity supplied MLD	LPCD	Quantity supplied MLD	LPCD
1	Tirunelveli (Thachanallur)	5.94	36.72	77	55.00	116
2	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	Koundam-palayam	30.38	4.56	48	8.00	80
	Vadavalli		2.3	55	3.00	70
9	Tiruvanna-malai-I	0.32	Distribution Revamped			
10	Sivagangai-II	0.16				
11	Thuraiyur	0.14				
12	Krishnagiri	1.52				
13	Kuzhithurai-II	0.99				

The remaining 4 water supply schemes i.e, Salem stage-II, Pallavapuram, Pammal and Theni-Allinagaram are taken up at a total cost of ₹ 359 crore are under progress.

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

The water supply level has increased in the ULB's where work has been completed as follows:-

Sl. No	Name of the ULB	Project cost (₹ in crore)	Daily Water Supply Service Level			
			Before implementation of the Scheme		After implementation of the Scheme	
			Quantity supplied in MLD	LPCD	Quantity supplied in MLD	LPCD
1	Tiruchirappalli	221.42	90.00	98	154	135
2	Devakottai	8.32	4.06	78	4.67	81
3	Idappadi	18.52	3.14	61	6.30	113
4	Coonoor	13.85	2.82	62	3.46	76
5	Udumalpet	17.87	Distribution system revamped			
6	Thoothukudi	282.44	Work completed			

The remaining 3 water supply schemes taken up are as follows:

Sl. No	Name of the ULB	Project Cost (₹ in crore)
1	Palani	21.60
2	Dindigul	70.5
3	Mettupalayam	9.16

2.3.1.3. 14 works have been taken up under German Development Bank (KfW) fund, at an estimated cost of ₹ 793.00 crore, out of which, 5 works have been completed.

The supply level increased in the 5 completed urban local bodies 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	Tiruvanna-malai	36.66	18.30	100	20.50	126
4	Pallipalayam	11.66	2.59	63	3.22	91
5	Karur	24.67	10.02	106	16.06	135

The remaining 9 Water Supply Schemes are as given below:

Sl. No	Name of the ULB	Project cost (₹ in crore)
1	Thanthoni	25.16
2	InamKarur	18.57
3	Udhagamandalam	27.20
4	Tirunelveli	230.00
5	Cuddalore	148.09
6	Trichirappalli	63.70
7	Coonoor	40.19
8	Coimbatore (added area)	108.16
9	Padmanabapuram	14.87

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

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

Sl. No	Name of the ULB	Project Cost (₹ in crore)	Daily Water Supply Service Level			
			Before implementation of the Scheme		After implementation of the Scheme	
			Quantity supplied in MLD	LPCD	Quantity supplied in MLD	LPCD
1	Dharmapuri	132.55	5.50	80	14.26	135
2	Krishnagiri	93.59	4.00	56	8.00	112
3	Hosur	149.32	6.50	27	15.50	63

2.3.1.5. Combined Water Supply Scheme to Attur and Narasingapuram Municipalities were taken up for implementation at an estimated cost of ₹ 270.00 crore and was completed. After completion of the scheme, the water supply level has increased as follows:-

Sl. No	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
1.	Attur	3.30	52	6.20	100
2.	Narasingapuram	1.30	56	1.90	82

The CWSS in Vellore Corporation was completed at an estimated cost of ₹ 1295.00 crore. Out of the above project cost, the ULB contribution is ₹ 104.50 crore. The remaining funds are contributed jointly by HUDCO, KfW and IUDM.

The water supply level has been increased in Vellore Corporation and 11 Municipalities as follows:

Sl. No	Name of the ULB	Project Cost (₹ in crore)	Daily Water Supply Service Level			
			Before implementation of the Scheme		After implementation of the Scheme	
			Quantity supplied in MLD	LPCD	Quantity supplied in MLD	LPCD
1	Vellore Corporation	529.56	18.50	37	57.73	111
2	Ambur	95.25	4.40	39	11.16	97
3	Arcot	47.71	4.20	77	5.42	97
4	Ranipet	30.22	3.50	69	4.78	94
5	Gudiyatham	86.40	7.30	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	6.70	70	8.30	87

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

2.3.1.6. Under Atal Mission for Rejuvenation and Urban Transformation (AMRUT 2015-2016 and 2017-2020) 14 Water Supply Improvement Schemes (WSIS) have been taken up at an estimated cost of ₹ 5386.17 crore, of which, 11 water supply improvement scheme works are under progress. For balance 3 works administrative sanction has been obtained and action is being taken for the implementation of the project.

The details are as follows:

S. No	Name of the ULB	Project cost (₹ in crore)
AMRUT 2015-16		
1	Thanjavur Corporation (Distribution system)	48.14
2	Coimbatore Corporation (added areas Distribution system)	395.41
3	Tiruppur Corporation (added areas Distribution system)	250.00
4	Erode Corporation	484.45

5	Vellore Corporation (Distribution system)	234.93
6	Nagercoil Municipality	241.00
7	Hosur Municipality (Distribution System)	87.91
8	Rajapalayam Municipality	172.70
9	Ambur Municipality (Distribution System)	50.90
AMRUT 2017-2020		
10	Coimbatore 24x7 WSS	556.57
11	Kumbakonam (distribution System)	40.50
12	Madurai Corporation (Source augmentation works)	1020.00
13	Tirupur Corporation (Added areas distribution system)	1063.51
14	Coimbatore Corporation (Added areas source augmentation Works)	740.15
	Total	5386.17

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

S. No	Name of the ULB	Project cost (₹ in crore)
1	Providing CWSS to Sankarankoil, Puliyangudi, Rajapalayam, Sivakasi and Thiruthangal Municipalities (5)	475.13
2	Namakkal	185.24
	Total	660.37

2.3.2 Efficient Water Supply Management System

For improving the efficiency of water supply management system, it is necessary to have better control and monitoring mechanism in the operations and maintenance of water supply schemes. Hence the Government of Tamil Nadu has accorded special priority to implement the water supply management system by adopting latest technologies.

The improvement measures taken up are as follows:

- Replacing inefficient motors and pumps to improve to the efficiency of the pumping system.
- Revamping the existing water supply distribution network to ensure equitable distribution of water.
- Implementation of the Supervisory Control and Data Acquisition (SCADA) system at corporations and municipalities to continuously monitor the transfer of data on water flow, performance and efficiency of pumps and motors, physical and chemical quality parameters of water.
- In Coimbatore Corporation, SCADA implementation has been completed by TWAD Board. For Pillur-II scheme, SCADA works are under progress.
- SCADA system has been partially implemented and commissioned in the Corporations of Tirunelveli, Tiruppur, Madurai and Tiruchirappalli.
- In Namakkal, Komarapalayam, Tiruchengode SCADA works have been

completed and put to use successfully. In Rasipuram, Narasingapuram municipalities, SCADA works are nearing completion.

- In Tirunelveli, Thoothukudi and Dindigul Corporations, SCADA system will be implemented in 2018-19.
- Provision has been made for SCADA in all the new water supply schemes for this year.

2.3.3 Improvements to Distribution systems

The Commissionerate of Municipal Administration has taken up an extensive study on the status of the existing water supply systems in all ULBs in a prescribed format designed by this commissionerate to ascertain the shortfall in infrastructure facilities and also the source position to improve the existing supply level and achieve desired 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 improvements to Distribution systems and other infrastructure facilities including OHTs, and Sumps.

Out of the 42 DPRs prepared, projects in 15 municipalities have been taken up for implementation at a cost of ₹ 226.12 crore under various schemes such as Urban Infrastructure Development Scheme for small and Medium Town, Urban Infrastructure and Governance, Japan International Cooperation Agency, German Development Bank and Integrated Urban Development Mission. Out of 27 remaining projects, 5 projects were taken up under AMRUT and TNSUDP, 13 projects are under the process of funding by the Japan

International Cooperation Agency and other sources. For remaining 9 projects, action is being taken for fund tie-up.

Apart from the above, all the new water supply schemes would be inclusive of distribution system improvements.

2.3.4 Summer Management Plan-2018 (State Disaster Response Fund)

Because of the critically failed 2016 NE monsoon, the water scarcity during the summer 2017, was tackled by providing additional bore wells with hand pumps/mini power pumps in addition to purchase of spare parts for the maintenance of existing hand pumps. Further, rejuvenation of borewells /infiltration wells, conversion of hand pump to mini power pumps and transportation of water through tanker lorries, provision of HDPE tanks, flushing of the existing bore wells, replacement of motors were taken up at an estimated cost of ₹ 100.62 crore,

of which an amount of ₹ 65 crore was released as grant from the SDRF and balance funds were met out by the respective local bodies out of their general funds. 1744 works were taken up.

2.3.5 Rain Water Harvesting

To rejuvenate Water sources and improve ground water table reserves, Rain Water Harvesting Scheme was conceived in 2001. Tamilnadu is the first Indian State to make rainwater harvesting mandatory. Successful implementation of this scheme during 2001-2006 has shown tremendous improvement in quantity of ground water table.

Necessary amendments were made to the Tamil Nadu District Municipalities Act, 1920, the Tamil Nadu District Municipalities Building Rules, 1972, the Multi-Storeyed and Public Buildings Rules, 1973 and the Madurai city Municipal Corporation Building (Water Conservation)

Rules, 2002 to make "Rain Water Harvesting structures" in all mandatory buildings while issuing building plan approval. The rain water harvesting structures created throughout the state had helped to raise the ground water table substantially. Various measures have been taken up for rejuvenation of rain water harvesting structure created already in both Public and Private Buildings, besides creating new ones.

Up to April 2018, out of 44.56 lakh buildings in Corporations (except Chennai) and Municipalities, 38.86 lakh buildings (30116 Government buildings and 38.56 lakh private buildings) have been provided with rain water harvesting structures. Rainwater harvesting in the water bodies in ULBs have also been given major thrust. Out of 1486 ponds and temple tanks, 773 have been provided with rainwater harvesting structures.

The Urban Local Bodies have now initiated various measures for the rejuvenation of the rainwater harvesting structures. Further, wherever rainwater harvesting structures in Urban Local Bodies are under repair, they are being restored by ULBs. An action plan has been drawn by Urban Local Bodies for the revival and maintenance of Rain Water Harvesting structures.

Pre-monsoon preparedness has been taken up in all urban local bodies as precautionary measures by way of cleaning and desilting all the storm water drains, canals, culverts as well as the lead channels to the water courses in the town. All the rain water harvesting structures was rejuvenated and made functional.

With this drive, 87% of buildings and 52% of ponds and tanks have been covered up to April 2018. The recharge potential due to the

rain water harvested from buildings and water bodies is calculated as 5.12 TMC. In order to improve the water bodies in Ariyalur, Nagapattinam, Pattukottai, Pudhukottai, Sattur municipalities and Erode corporation, an amount of ₹ 26.67 crore has been allotted by the Government with German Development Bank assistance.

2.4 Under Ground Sewerage Scheme

In order to keep up with the demands of rapid urbanisation the Government has decided, to implement under ground sewerage scheme in all the needy urban local bodies, in a phased manner. The detailed project reports for 117 ULBs for an estimated project cost of ₹ 11,271 crore have been prepared by Chennai Metro Water Supply and Sewerage Board, Tamil Nadu Water and Drainage Board and the urban local bodies. The implementation is taken up in phases after necessary financial tie-up.

2.4.1 Sewerage Schemes under Implementation

Under the Tamil Nadu Urban Development Project-III, under ground sewerage schemes have been taken up for implementation in 22 towns at a total cost of ₹ 1025.51 crore. The UGSS in Udhagamandalam, Chinnamanur, Namakkal, Dharmapuri, Perambalur, Dindigul (part), Thiruvannamalai, Kancheepuram, Ramanathapuram, Tiruvarur, Cuddalore, Theni-Allinagaram, Vellore, Nagapattinam (part), Pudukottai, Tiruvallur, Virudhunagar, Krishnagiri and Pallavapuram municipalities have been completed and put into use at a cost of ₹ 757.04 crore.

Under ground sewerage scheme in 4 ULBs viz., Madurai and Coimbatore corporations, Avadi and Tambaram Municipalities were taken up under the Urban Infrastructure and Governance component of Jawaharlal Nehru

Urban Renewal Mission 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 Jawaharlal Nehru Urban Renewal Mission, Under Ground Sewerage Scheme in 10 towns viz., Maraimalai Nagar, Ariyalur, Arakkonam, Sattur, Chidambaram, Thirupathur, Periakulam, Mettur, Nagercoil and Udumalaipet were taken up at a total cost of ₹ 575.86 crore, of which works in Maraimalai Nagar Udumalaipet, Periyakulam and Ariyalur have been completed and put into use. The remaining projects are in advanced stages of implementation.

Under Ground Sewerage Scheme for Erode Corporation at a cost of ₹ 209.09 crore, for the Karaikudi Municipality at a cost of ₹ 112.53 crore, Pollachi municipality at a cost of

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

Underground sewerage scheme for Bodinayakkanur at a cost of ₹ 71.10 crore, Ariyalur (left out area) at a cost of ₹ 3.30 crore, Perambalur (left out area) at a cost of ₹ 9.50 crore, Sathyamangalam at a cost of ₹ 54.26 crore and Rasipuram at a cost of ₹ 55.42 crore were taken under Integrated Urban Development Mission (IUDM). Bodinayakkanur, Ariyalur (left out area) and Perambalur (left out area) UGSS has been completed.

Sathyamangalam and Rasipuram works are at various stages of implementation.

Administrative sanction was accorded for UGSS at Hosur Municipality for ₹ 283.94 crore under Tamil Nadu Sustainable Urban Development Programme and action is being taken by the ULB for getting necessary clearances for STP land for the commencement of work.

Under Ground Sewerage Scheme for Pallavaram Municipality at a cost of ₹ 22.00 crore, for Kumbakonam Municipality at a cost of ₹ 59.84 crore, for Tiruchirapalli Corporation phase – II at a cost of ₹ 344.00 crore, phase – III at a cost of ₹ 312.14 crore, for Tirunelveli Corporation phase – II at a cost of ₹ 289.01 crore and phase –III at a cost of ₹ 440.19 crore, for Vellore Corporation phase II at a cost of ₹ 343.69 crore and phase – III at a cost of ₹ 293.77 crore, for Rameswaram Municipality at

a cost of ₹ 40.33 crore, for added areas in Coimbatore Corporation at a cost of ₹ 442.00 crore, for Rajapalayam Municipality at a cost of ₹ 246.99 crore and for Ambur Municipality at a cost of ₹ 165.55 crore and for added areas of Tirupur Corporation at a cost of ₹604.05 crore has been taken up with AMRUT and ADB financial assistance and are at various stages of implementation.

Till 31st March 2018, 5,50,386 House Service Connections (HSC) (previous year 4,75,663 connections) have been effected in 34 ULBs viz., Avadi, Ariyalur, Coimbatore (part), Dharmapuri, Thiruvannamalai, Periyakulam, Dindigul (part), Pallavapuram, Maraimalainagar, Chinnamanur, Kancheepuram, Tirunelveli, Tiruchirappalli, Madurai, Udthagamandalam, Namakkal, Karur, Mayiladuthurai, Kumbakonam, Thanjavur, Tiruppur, Perambalur, Ramanathapuram,

Thiruvarur, Cuddalore, Pudukottai, Vellore, Udumalaipet, Tiruvallur, Theni-Allinagaram, Virudunagar, Nagapattinam(part), Krishnagiri and Villupuram Municipalities where the under ground sewerage scheme has been completed.

Sl. No	Name of the ULB	Total No of House Service Connection given
Corporations		
1	Coimbatore	38,502
2	Dindigul	9,451
3	Tiruppur	15,481
4	Thanjavur	27,929
5	Tiruchirappalli	57,683
6	Tirunelveli	24,984
7	Madurai	1,62,939
8	Vellore	5,175
Sub Total 1		3,42,144
Municipalities		
1	Thiruvannamalai	6,083
2	Villuppuram	5,154
3	Udumalpet	6,506
4	Udhagamandalam	15,778
5	Karur	10,200
6	Dharmapuri	1,875

7	Namakkal	9,318
8	Krishnagiri	3,208
9	Chinnamanur	6,281
10	Theni Allinagaram	7,160
11	Ramanathapuram	9,460
12	Pallavapuram	26,690
13	Maraimalai Nagar	4,594
14	Tiruvallur	1,971
15	Cuddalore	2,718
16	Kancheepuram	19,712
17	Virudhunagar	2,997
18	Kumbakonam	19,456
19	Mayiladuthurai	10,880
20	Tiruvarur	6,365
21	Pudukkottai	8,439
22	Nagapattinam	5,273
23	Perambalur	10,092
24	Periyakulam	6,904
25	Avadi	382
26	Ariyalur	746
Sub Total 2		2,08,242
Grand Total (Subtotal 1 + Subtotal 2)		5,50,386

Advanced techniques like trenchless technology for laying of sewer lines, usage of

pre-fabricated manholes, High density polyethylene pipes and other modern technologies for treatment of sewage are being explored.

2.5. Septage Management

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

There are 12 Corporations, 124 Municipalities, 528 Town Panchayats and 12,524 Village Panchayats functioning in the State. Out of these local bodies, UGSS is

functioning in 9 Corporations (including Chennai), 27 Municipalities and 3 Town Panchayats. Even among these local bodies where Under Ground Sewerage Scheme is in place, only a part of the town has been covered. Moreover, the fringing local bodies, are experiencing a tremendous rate of growth, due to the fast pace of urbanization in Tamilnadu. Hence there is a need for fecal septage management to serve the uncovered areas of such local bodies and also the safe handling of the fecal sludge from the nearby ULBs and Rural local bodies, where there are no system in place, based on the cluster approach.

2.5.1. Need for Septage Management

The government has issued comprehensive guidelines vide G.O. (Ms) No. 106, Municipal Administration and Water Supply Department, dated 01.09.2014, to regularize and monitor the handling of fecal sludge.

The guidelines contemplate the following initiatives:-

- Design and Construction of Septic Tanks
- Septic Tank Pumping & De-Sludging
- Septage Transportation
- Treatment &Septage Disposal
- Fees / Charges for Collection, Transportation and Treatment
- Information, Education and Communication
- Recordkeeping and Reporting (MIS)

35 clusters have been identified and grouped in such a way that all collection points are situated approximately at a radius of 18-20 km from the designated sewage treatment plants (STP), of which, 21 clusters have been firmed up. Urban and rural local bodies situated in and around these clusters are decanting the fecal sludge in these sewage

treatment plants. Clustering of adjacent urban and rural local bodies in and around the remaining STPs is being explored.

The following table shows the details of ULB wise capacity of functioning STPs, process followed and utilization.

SL. NO	Name of the ULB	Year of Commissioning	Capacity (in MLD)	Technology	Inflow (in MLD)	Percentage of Utilization	HSC as on March 31, 2018
1	Chennai	-	764.00	Activated Sludge Process	530.00	69	5,83,520
2	Chinnamanur	2012	4.00	ASP	3.20	80	6,281
3	Coimbatore	2010	110.00	Sequential Batch Reactor	27.00	25	38,502
4	Cuddalore	2016	12.25	ASP	0.89	0.8	2,718
5	Dharmapuri	2013	4.86	ASP	1.38	28	1,875
6	Dindigul	2012	13.65	ASP	2.60	19	9,451
7	Kanchipuram	2012	14.70	Waste Stabilisation Pond	13.50	92	19,712
8	Karur	2007	15.00	Extended Aeration Process	6.50	43	10,200
9	Kumbakonam	2009	17.00	ASP	14.00	82	19,456
10	Krishnagiri	2016	9.00	ASP	1.85	21	3,208
11	Madurai	2011	170.70	SBR	40.00	23	1,62,939

12	Maraimalai Nagar	2010	2.02	EAP	1.80	89	4,594
13	Mayiladuthurai	2007	8.50	WSP	5.86	69	10,880
14	Mamallapuram	2016	2.34	ASP	0.45	19	763
15	Namakkal	2012	5.00	ASP	5.00	100	9,318
16	Nagapattinam	2016	12.59	ASP	1.80	14	5,273
17	Orathanadu	2016	1.50	ASP	0.28	19	1,040
18	Pallavapuram	2011	0.00	ASP	13.00	0	26,690
19	Perambalur	2013	4.20	ASP	2.50	60	10,092
20	Pudukottai	2016	10.62	ASP	2.60	24	8,439
21	Ramanathapuram	2013	7.00	ASP	6.00	86	9,460
22	Thanjavur	2007	28.05	ASP	13.00	46	27,929
23	Thiruvannamalai	2013	8.76	ASP	2.70	31	6,083
24	Theni-Allinagaram	2015	12.05	ASP	1.80	15	7,160
25	Tiruvallur	2016	6.20	Moving Bed Biological Reactor	0.40	6	1,971
26	Tiruvarur	2014	6.92	ASP	3.00	43	6,365
27	Tirunelveli	2007	24.20	WSP	11.00	45	24,984
28	Tiruppur	2008	15.00	EAP	8.00	53	15,481
29	Thiruchendur	2016	3.90	ASP	0.03	0.77	135
30	Trichirappalli	2007	58.00	WSP	56.00	97	57,683
31	Udhagamandalam	2000	5.00	ASP	3.60	72	15,778
32	Udumalaipet	2016	7.81	ASP	2.40	31	6,506
33	Vellore	2015	10.28	ASP	5.00	49	5,175
34	Virudhunagar	2016	7.65	ASP	0.31	4	2,997
35	Viluppuram	2014	12.50	ASP	3.50	26	5,154

36	Periyakulam	2017	5.47	ASP	3.70	68	6,904
37	Avadi	2017	40.00	ASP	0.50	1	382
38.	Ariyalur	2018	4.16	ASP	0.30	7	746
	TOTAL		1444.88		774.11	41	11,34,804

The enumeration of existing septic tanks, identification of insanitary latrines and establishment of decanting facilities in the functioning STPs are in progress. So far, in Corporations and Municipalities, 211 numbers of lorries have been registered. Sewage has been collected from septic tank, carried through lorries into the nearby sewage treatment plant and treated there. As a next step, first pilot Fecal Sludge Treatment Plant is taken up for implementation in Trichy Corporation to serve about 50,000 population with the assistance of Bill and Melinda Gates Foundation.

2.6 Animal Birth Control (Dogs) Programme

The Animal Birth Control Programme is the method adopted to control the population of

stray dogs instead of killing them. The program is implemented as a part of the Public Health function of Corporations and Municipalities based on the guidelines of the World Health Organization (WHO).

In G.O. No. 181 of Municipal Administration and Water Supply Department, dated 05.04.2013, a total grant of ₹ 5.40 crore was sanctioned to the Municipalities and Corporations (except Chennai) to procure 60 vehicles for the transportation of stray dogs at a cost of ₹ 3.00 crore and 80 shelters are constructed for sterilizations at a cost of ₹ 2.40 crore.

To implement the Animal Birth Control Programme properly, the sanitary workers and municipal staff have been trained by reputed NGOs periodically. Sterilization procedure is carried out by the outsourced Veterinary Surgeons. The dogs are maintained in well-established Dog shelters during the operative

and post-operative periods and care is properly taken. The sterilized dogs are also immunized with anti-rabies vaccines.

Under this programme, the stray dogs in the Municipalities and Corporations (except Chennai) were enumerated in the year 2013 as 2,42,655. Up to March 2018, 1,90,365 dogs were sterilized at a cost of ₹ 9.57 crore. The remaining stray dogs are also being sterilized in a phased manner.

2.7 Solid Waste Management

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

About 7671 MT of Municipal Solid Waste is being generated daily in 11 Corporations (except Chennai) and 124 Municipalities. To strengthen the primary collection, transportation and processing of Municipal Solid Waste (MSW), vehicles, machineries and equipments are being procured under Special SWM fund and Swachh Bharath Mission. For processing of Municipal Solid Waste, the following activities such as Decentralized Micro compost centre, Windrow composting, vermi composting, establishment of Resource Recovery Centres, Biomethanation plants, Bio mining and other processing facilities are encouraged.

2.7.1 Solid Waste Management Rules 2016

The Government has revamped the Municipal Solid Wastes (Management and Handling) Rules 2000 and notified the New Solid Waste Management Rules, 2016 on April 8, 2016.

In a bid to strictly enforce the implementation of SWM Rules 2016, by-laws have been framed by all the Urban Local bodies with due provisions for collecting User charges and imposing spot fines for the violation of SWM Rules 2016. Action is also taken to encourage source segregation of waste by resorting to the collection of dry waste including plastics exclusively on a particular day of the week. As a result of all the efforts taken in Solid waste management activities, 90% Door to door collection of waste and 63% source segregation is achieved in all the ULBs.

2.7.2 Special Solid Waste Management Fund

As a special initiative the Government had constituted a Special Solid Waste Management (SWM) Fund with an annual allocation of ₹ 100 crore to support financially weaker ULBs for implementation of Integrated Solid Waste Management (ISWM) projects and presented

with grant assistance from the Swachh Bharat Mission. So far 10 Corporations and 120 Municipalities have been covered at an estimated cost of ₹ 628.97 crore wherein 1225 works have been taken up out of which, 844 works are completed and the rest of the works are in different stages of implementation

2.7.3 Bio-Methanation Plants

As a part of scientific disposal of Municipal Solid waste, particularly food waste, the waste collected from the vegetable markets, Slaughter Houses, Hotels, Restaurants, etc., are being handled through 33 Bio-Methanation Plants of capacity of 3 MT, 5MT and 10 MT, with a total capacity of 179 TPD. They have been established in 8 Corporations 28 Municipalities at a cost of ₹ 30.39 crore with financial assistance through Integrated Urban Development scheme, Part -II scheme and Solid Waste Management fund.

All these Bio-Methanation Plants are in usage and the energy derived out of these Bio-Methanation Plants are being used for illuminating the lights in compost yard for the functioning of processing plants machineries, for the STP plants available at the site, for Amma Unavagam and Gasifier Crematorium.

2.7.4 Integrated Solid waste Management Projects

To have complete solution to dispose the Municipal Solid Waste of 300 TPD collected from Tambaram, Pallavaram, Sembakkam, Pammal and Anakaputhur Municipalities, an Integrated Solid Waste Management (ISWM) project have been taken up at a cost of ₹ 99.00 crore. The Phase-I work has been completed and Compost and Refuse Derived Fuel (RDF) Plant is partially functioning.

The Phase II Waste to Energy project work is in progress, with expected electrical power

output of 2.9 MWh. So far 5125 MT of compost has been produced and 1941 MT has been lifted. 71024 MT of Refuse Derived Fuel has been produced out of which 5331 MT has been sold.

2.7.5 Decentralized Micro Compost Centre

The Decentralized approach of establishing Micro compost centers for conversion of biodegradable waste into compost is being implemented in Municipalities and Corporations by covering 4 to 5 wards per centre with the waste handling capacity of 2 to 5 Tones Per Day (TPD).

This approach is being followed to minimize the secondary transportation cost as well as to achieve bin free streets and wards. Members of Local Self Help groups also provide employment in this endeavor.

In the first Phase, the decentralized approach of establishing micro compost centers

for handling the biodegradable wastes is successfully implemented in Tiruchirapalli and Vellore Corporations.

In the second phase, this approach will be extended for implementation in Thoothukudi, Salem, Dindigul & Tirunelveli Corporations and Avadi, Thiruverkadu, Poonamallee, Pammal, Anakaputhur, Thiruttani, Kallakurichi, Vandavasi, Thiruvannamalai, Villupuram, Vaniyambadi, Tiruvathipuram, Melvishram, Arani, Hosur, Idappadi, Attur, Narasingapuram, Komarapalayam, Bhavani, Thuraiyur, Vedaranyam, Oddanchatram, Devakottai, Coonoor, Udagamandalam, Gudalur(N), Arakkonam and Kayalpattinam Municipalities.

2.7.6 Windrows Composting

Windrow composting is being practiced in 5 Corporations and 56 Municipalities through

which 90497 MT of compost has been produced and the same is used for Agricultural purposes.

Memorandum of Understanding is to be entered with the Fertilizer Manufacturing Companies for sale of compost produced as per Government of India directions. Based on that, 4 Corporations and 5 Municipalities have executed a tripartite agreement with M/s Madras Fertilizers Ltd., Chennai. So far 5393 MT has been lifted.

2.7.7 Pyrolysis Unit

Pyrolysis offers a flexible and attractive way of converting solid biomass into an easily stored and transported liquid, which can be successfully used for the production of heat, power and chemicals. Adopting this concept, it is proposed to establish pyrolysis units in feasible ULBs as a solution to process the Non Biodegradable,

Non Recyclable Waste such as plastics, cloths and other combustible materials.

2.8 Roads

Roads make a crucial contribution to economic development, growth and bring important social benefits. They are the most important of all the public assets. Roads are designed for an intended span of life and are laid based on the 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 23,355.53 km, of which 5501.55 km are cement concrete roads, 15853.748 km are black topped roads, 606.662 km are WBM roads, 1261.29 km are earthen roads and 132.28 km are other roads like cut stone pavement, paver block etc.,

The maintenance of roads, restoring and relaying the damaged roads due to the implementation of water supply schemes, underground sewerage schemes and natural calamities is supported by Tamilnadu Urban Road Infrastructure Project (TURIP).

2.8.1 Tamil Nadu Urban Road Infrastructure Project (TURIP)

“Tamilnadu Urban Road Infrastructure Project” was announced by the Government for taking up road restoration works wherever utility lines like water supply and sewerage lines were added to the city’s infrastructure and disturbed the roads or unseasonable rains / natural calamities have battered the roads.

Under this programme, during the last Seven years, 4808.99 km length of roads damaged due to the implementation of Under Ground Sewerage Schemes, Water Supply Improvement Schemes and natural calamities

were taken up at an estimated cost of ₹ 2401.55 crore comprising 4992 works, of which 4660 have been completed at a cost of ₹ 1953.25 crore as detailed below:

Year	Sanctioned cost (₹ in crore)	Length in Km	Total Number of works Taken up
(1)	(2)	(3)	(4)
2011-12	200.00	584.394	1035
2012-13	186.50	516.115	1084
2013-14	265.61	523.313	1063
2014-15	263.12	501.610	1084
2015-16	258.29	1016.410	248
2016-17	247.16	871.35	258
2017-18	411.16	795.80	220
Total	1831.84	4808.992	4992

2.9 Street Lights

Street lighting is the basic amenity and one of the most important responsibilities of a local body. The expenditure towards energy consumption of street lighting system constitutes 25-30 % of electricity bill of the ULBs, which is a heavy burden on their financial resources. This necessitated the implementation

of certain measures to increase energy efficiency in street lights.

About 7.42 Lakh street lights are available in 11 Corporations (except Chennai) and 124 Municipalities in the state of Tamil Nadu.

In 9 Corporations and 35 Municipalities including Thanjavur and Tiruppur Region energy efficiency measures have been taken up for implementation by utilizing the services of Energy Saving Companies (ESCO)

It is expected to bring about 45% reductions in the electricity bill. For this project, a sum of ₹ 183.63 crore has been allocated under IUDM during 2011-12, 2012-13, 2013-14 and 2014-15. Out of the 3,13,507 total street lights of all categories, it was proposed to retrofit 2,16,680 FTL to LED lights of which the retrofitting of 1,66,230 has been completed and balance are in progress.

It is proposed to implement the Energy Saving measures by converting all the street lights of all categories into LED lights in Dindigul Corporation and the balance 90 Municipalities, in which all the 3,07,300 lights are proposed to be converted into LED lights with 100% Capital Investment by the Energy saving companies. Investment Grade audit work is in progress. It is also proposed to convert all categories of lamps in the entire Corporation area of Madurai and Coimbatore Corporation through 100% Capex by Energy Saving companies. The DPR preparation is in progress.

2.10 Special Infrastructure Programme

2.10.1 Modern Gasifier Crematorium

As a measure to protect the environment, instead of cremation by direct wood burning, construction of crematorium based on gasifier technology have been taken up in the ULBs. This

project reduces not only the use of firewood (50%) but also the cremation time (60 to 90 minutes). The cremation can be performed efficiently during the rainy season also.

Out of the 135 ULBs, 96 ULBs were identified for construction of 114 modern gasifier crematoria and an allocation of ₹ 39.38 crore has been made. Out of the 114 gasifier Crematoria taken up, 95 has been completed and are maintained by NGOs / Philanthropic Organizations. Construction of the remaining 19 crematoria are in various stages of implementation.

2.10.2 Modern Slaughter Houses

In order to facilitate Safe and Hygienic slaughtering of animals, to reduce water and air pollution it has been decided to construct modern slaughter houses in ULBs. To promote the modernisation of slaughter house and make

them environment friendly and free from health hazards, during the last five years, under Part-II scheme and Infra Gap Filling Funds, 38 Modern Slaughter houses were taken up in 8 Corporations and 26 Municipalities at a cost of ₹ 10.81 crore. 31 Slaughter houses have been completed and others are in various stages of implementation.

With the assistance of a 50 % grant from the Ministry of Food Processing Industries, Government of India, two numbers of Modern Abattoir at an estimated cost of ₹ 10.49 crore has been sanctioned for Tiruchirapalli Corporation. One of those work has been completed at an expenditure of ₹ 3.38 crore.

2.10.3 Roof Top Solar Energy

As per the Tamil Nadu Solar Energy Policy 2012, the Government has set a target of achieving 2000MW of solar power generation by

the harvesting Solar energy potential in the state. This Policy envisages solar rooftop system, solar water heating system, development of solar parks and so on. One of the steps taken is to enumerate the total number of buildings owned by the ULBs and to establish rooftop 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.

As a first stage, solar rooftop photovoltaic panels have been established in the Commissionerate of Municipal Administration, Chennai to produce 50 kwh power for office use and every day, about 250 kwh power is generated in the daytime thereby reducing electricity charges considerably. So far, rooftop solar energy aggregating to 2198 kwh has been installed in 445 ULBs buildings. In continuation of this effort, it is proposed to establish rooftop solar photovoltaic panel in all ULB buildings, including water supply head works, treatment

plants, sewerage treatment plants, and compost yards in due course.

A feasibility report has been prepared for the installation of such facilities in all the ULBs to the capacity of 53 MW. The feasibility of solar energy harvesting through roof top has been found as 11MW in 2825 buildings of ULBs.

Of the 2825 buildings, in the first phase around 1179 buildings have been covered under Smart cities (10 Corporations except Dindigul) for implementation of solar roof top panel to generate energy of 4.45 MW during 2017-18. The remaining 1646 buildings covered under other ULBs will be taken up, to harvest 6.6 MW on PPP basis during the year 2018-19.

2.11. Capital Grant Fund and O&M Gap Filling Fund

2.11.1 Capital Grant Fund

As per the 5th Finance Commission recommendation, allocation of Infrastructure Gap Filling Fund (IGFF) has been renamed as

Capital grant fund and allocation has been increased from 7% to 15% of the aggregate devolution intended for ULBs, tier wise shall be paid. This fund, which shall have three parts corresponding to each tier of ULB, shall be utilized to support capital works linked to basic functions and services in the ULBs.

An amount of ₹ 264.02 crore for Municipal corporations and ₹ 191.41 crore for Municipalities has been allotted for the year 2018-19.

2.11.2 Operational and Maintenance Gap Filling Fund

The allocation for Operational and Maintenance Gap filling is distributed to the Urban Local Bodies where the fund is required for the Operational and Maintenance of the needed infrastructural facilities such as water supply, Under Ground Drainage and payment dues to water charges, EB charges etc.,

The Government has now increased the share of O&M Gap Filling Fund from 3% to 5% based on the recommendations of the 4th State Finance Commission. During the last 6 years, under the Operations and Maintenance Gap filling funds, 502 works have been taken up at an estimated cost of ₹ 554.66 crore of which 436 works have been completed and balance works are in various stages of implementation.

An amount of ₹ 88.01 crore for Municipal Corporations and ₹ 63.80 crore for Municipalities has been allotted for the year 2018-19.

2.12 Construction of Office Buildings

Many of the Municipalities do not have office accommodation and they are not in a position to construct office buildings / upgrade the existing building due to the deprived financial situation. In order to provide a better environment for the staff and the public, from the year 2011-12 to

2017-18, a grant of ₹ 161.01crore has been sanctioned to 76 ULBs, (87 works) under the Infrastructure Gap Filling Fund, Operation and Maintenance Gap Filling Fund, Part-II scheme and Capital Grant Fund. Out of 87 works, 59 numbers of works have been completed and the remaining are in various stages of implementation.

2.13 Sanitary Workers Welfare

In urban local bodies, 70% of the total work force comprises of sanitary workers (out of 43089 staff, 30109 are sanitary workers). Their main function is to maintain sanitation and solid waste management.

In order to make them professionally dignified and offer them safe and healthy working atmosphere, the Government has sanctioned ₹ 49.61 crore under IGFF, O&M and Part II scheme during the last five years to

46 ULBs for construction of 1336 quarters for sanitary workers, as detailed below:-

Year	No. of ULBs	No. of units taken up
2011-12	3	72
2012-13	6	80
2013-14	11	336
2014-15	8	214
2015-16	5	200
2016-17	4	134
2017-18	9	300
Total	46	1336

2.14 Centrally Sponsored Schemes

2.14.1 Smart Cities

The Smart City Mission has been launched by the Government of India on 25.06.2015. The objective of the Smart Cities Mission is to promote sustainable and inclusive cities that

provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and an application of “Smart Solutions”. The plan period is 2015 to 2020.

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

Area based Development (ABD) consists of provision for adequate water supply, assured electricity supply, sanitation, including solid waste management, efficient urban mobility, affordable housing, especially for the poor, robust IT connectivity and digitalization, Good governance, especially e-Governance, Sustainable environment, Safety of citizens particularly women, children, the elderly, Health and education.

Pan-city development envisages application of selected Smart Solutions to the existing citywide infrastructure. Application of Smart Solutions will involve the use of technology, information and data to enhance the quality of infrastructure and services.

Based on the “City Challenge Competition”, Chennai and Coimbatore Corporations were selected in the first phase.

In the continuation, in the 2nd phase, Madurai, Salem, Thanjavur and Vellore Corporations got selected. In the 3rd Phase Thoothukudi, Tirunelveli, Tiruppur and Tiruchirappalli Corporations have been selected.

In the 4th Phase, Erode has been selected.

In all the ULBs related under Smart City Project, SPV has been registered. The project sanction and implementation have been commenced.

2.14.2 Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

The Government of India launched Atal Mission for Rejuvenation and Urban Transformation (AMRUT) on 25.06.2015, with the aim of providing infrastructure facilities which are directly linked to the provision of better services to the citizens.

The cities having more than one lakh population are selected for implementation under this scheme. In Tamil Nadu 12 Corporations, 20 Municipalities and 1 Town panchayat have been selected.

During the year 2015-2016 9 Water Supply Improvement works, one Under Ground Sewerage Scheme, and 90 parks in 24 ULBs at an estimated cost of ₹ 2056.53 crore taken up for implementation.

During the year 2016-17, Kumbakonam Water Supply Improvement Scheme and

Coimbatore 24x7 Water Supply Improvement Scheme, 8 Under Ground Sewerage schemes 133 parks in 24 ULBs at a cost of ₹ 2914.93 crore have been taken up and are at various stages of implementation.

For the year 2017-20, 3 WSIS, 4 UGSS and 135 Parks in 24 ULBs totally at a cost of ₹ 4472.00 crore have been taken up and preliminary work is underway.

The amount so far sanctioned and cost sharing is as follows:

GOI Share : ₹ 3833.56 crore

GOTN Share : ₹ 1747.16 crore

ULB Share : ₹ 3862.74 crore

An amount of ₹ 766.71 crore from the Government of India and ₹ 349.43 crore from the Government of Tamilnadu, has been released to Mission Directorate for release of fund to respective Urban Local Bodies.

For WS and UGSS projects, Part funding under ADB/Kfw/TNSUDP has been made towards ULB contribution for smooth implementation.

2.14.3 Deendayal Antodaya Yojana – National Urban Livelihoods Mission (DAY-NULM)

For urban homeless, four projects sanctioning committee meetings were held up to December 2017 and 184 shelter units at an estimated cost of ₹ 68.12 crore have been sanctioned. To be implemented by Corporations, Municipalities and Town Panchayats. These include 35 shelters (20 normal shelter and 15 special shelters as short stay homes in District head quarters hospitals) announced by the Hon'ble Chief Minister of Tamil Nadu under the Rule. 110. So far 137 shelters have been completed and the remaining 47 shelters are under various stages of progress.

Under the scheme of Support to Urban Street Vendors component of the DAY-NULM, 1,16,431 street vendors have been identified through survey and ID cards have been issued to 80,667 vendors. The Town Vending Committee in all Corporations and Municipalities has been formed. Regarding Town Panchayats, 34 out of 528 Town Panchayats have formed Town Vending Committee and the remaining will be formed during 2018-19.

2.14.4 SWACHH BHARAT MISSION

The Ministry of Urban development had launched the Swachh Bharat Mission on 02.10.2014 for a period of five years with the mission objectives of -

- Elimination of open defecation,
- Eradication of Manual scavenging,
- Modern & scientific Municipal solid waste management,

- to effect behavioral change regarding healthy sanitation practices,
- Generate awareness about sanitation and its linkage with public health,
- Capacity augmentation for urban local Bodies and to create an enabling environment for private sector participation in capital expenditure and operational expenditure (Capex & Opex).

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

implementation and supervision of works under the programme.

2.14.4.1 Individual House Hold Latrines

Year	Target	Completed	Progress
2015-16	98,048	98,048	0
2016-17	1,02,569	79705	22864
Total	2,00,617	1,77,753	22,864

The entire plan period target for IHHL will be completed during October 2018.

2.14.4.2 Community Toilets

Year	No of Toilets	Seat	Completed	Progress
2014-15	293	2167	2167	0
2015-16	415	3961	3898	63
2016-17	136	1287	826	461
2017-18	23	338	22	316
Total	867	7753	6913	840

2.14.4.3 Solid Waste Management

Integrated Solid Waste Management Projects have been taken up under Special Solid

Waste Management fund constituted by Government of Tamilnadu and Swachh Bharat Mission fund. So far, 129 Urban Local Bodies have been covered at an estimated cost of ₹ 612.05 crore wherein 1253 works have been taken up and out of which, 842 works are completed and the rest of the works are in different stages of implementation.

2.14.4.4 Information, Education and Communication (IEC) Activities

The government has approved the proposal to engage 3,046 Animators at a cost of ₹ 154.20 crore for 3 years from 2016-17 to 2018-19 for the effective Information, Education and Communication (IEC) activities to create awareness on Cleanliness and Sanitation and to eradicate Open Defecation and to efficiently handle the Segregated Bio waste and recyclable waste. For the year 2016-17, to carry out the IEC activities an amount of ₹ 27.69 crore has

been approved and 1264 animators, 215 supervisors and 11 co-ordinators have been engaged by 124 Municipalities and 11 Corporations Survey work on sanitation has been completed in Municipalities, and it will be completed in Corporations by the end of May 2018 and then IEC activities will be taken up continuously regarding Solid Waste Management.

2.14.5 Heritage City Development and Augmentation Yojana - HRIDAY

The Heritage City Development and Augmentation Yojana (HRIDAY) was launched by the Ministry of Housing and Urban Affairs (MoHUA), Government of India with a focus on promoting the holistic development of heritage cities. The scheme aims to preserve the culture, arts and architecture of heritage cities and develop them to be more aesthetically appealing, accessible, livable, safe and

sustainable without disturbing their unique character.

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

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

The funds allotted and status of works taken under this scheme for Kancheepuram is as follows:

Sl. No	Details of Work	No. of Works	Project Cost (₹in lakhs)	Present stage
1.	Arulmigu Ekambareswarar Temple (to improve the Roads and Streets around the Temple)	6	989.72	70%of work completed
2.	Arulmigu Varadharaja Perumal Temple (to improve the Roads and Streets around the Temple)	6	763.86	65% of work completed
3.	Arulmigu Kamatchi Amman Temple (to improve the Roads and Streets around the Temple)	7	246.00	Work commenced
	Total	19	1999.58	

2.15 Externally Aided Projects

The Government of Tamil Nadu is implementing a lot of infrastructure projects with external aid.

2.15.1 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 have been taken up for implementation. Out of which

4 schemes have been completed and remaining 5 schemes are under progress.

2.15.2 German Development Bank (KfW) assisted SMIF

30 schemes viz, Road improvement, Storm water drain, Water body improvement, Water Supply improvement, Development of Parks and play fields and Under Ground Sewerage schemes have been taken up under this project in 23 Urban Local Bodies at a cost of ₹ 2931.27 crore. Among them, 11 schemes have been completed and the remaining 19 schemes are under progress in various stages.

2.15.3 Tamil Nadu Sustainable Urban Development Project (TNSUDP)

The World Bank assisted Tamil Nadu Sustainable Urban Development Project (TNSUDP) is being implemented at a cost of ₹ 3831.00 crore.

The project consists of 3 components viz., Urban Governance Component, Urban Sector Technical Assistance Component and Urban Investment Component.

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

The Urban Investment Component is being implemented through Tamil Nadu Urban Infrastructure and Financial Services Limited (TNUIFSL).

2.15.3.1 Urban Governance (Model City) Component

Erode City Municipal Corporation, Vellore City Municipal Corporation and Hosur Municipality have been selected as Model Cities under Urban Governance (Model City) Component. This Component will support these

three Model Cities in improving Urban Management in four areas namely

- ULB empowerment and organizational capacity
- Spatial / development planning
- Sustainable finances and
- e-governance and public disclosure.

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

As against the achievements made on Disbursement Linked Indicators (DLI) targets

fixed for the year 2014-15 and 2015-16, an amount of ₹ 25.54 crore each to Erode and Vellore City Municipal Corporation and ₹ 12.77 crore to Hosur Municipality has been sanctioned and released in the year 2016-17. The same quantum of the amount will be sanctioned and released every year to these cities from 2017-18 to 2021-2022 based on their performance under Urban Governance / Management areas.

2.15.3.2 Urban Sector TA Component

Under the Urban Sector TA component, the following four sub components are being implemented by the Commissioner of Municipal Administration.

S. No	Sub Component	Total Finance (₹ crore)	World Bank Finance (₹ crore)
1	Municipal e-governance / PFM and GIS	137.28	73.43

2	Knowledge and Institutional Strengthening	44.69	38.31
3	Project Preparatory Fund	12.77	0.00
4	Project Management, Incremental Operation Costs	22.35	22.35
	Total	217.09	134.09

2.15.3.3 e-governance in Urban Local Bodies

A major thrust is given to achieve an e-governance system in Municipal administration by the Government of Tamil Nadu. 29 Municipal e-governance modules have been identified for providing quick and better services to the urban citizens. To achieve this goal, a major e-governance project namely “centralized web based software application for all ULBs” was taken up for implementation under TNSUDP at a cost of ₹ 18.31 crore. 12 modules have been implemented in 11 Corporations and

124 Municipalities in the year 2016-17. 12091 employees of ULBs were provided end users training on 12 modules of CWBS application. The remaining 17 modules will be implemented shortly in all 135 ULBs under the control of CMA.

2.15.3.4 Knowledge and Institutional Strengthening

Under knowledge and Institutional Strengthening Sub Component, the following training programmes will be organized to build the capacity of various cadres of Municipal Staff / Officers during the year 2018-2019

- Residential training programme for 220 officers in town planning wing of all Municipalities and Municipal Corporations and 100 Executive Officers of Town Panchayats will be conducted in TNIUS, Coimbatore at an estimated cost of ₹ 20.58 lakh for 3 days.

- Residential training for 526 numbers of Sanitary Inspectors, Sanitary Officers, Municipal Health Officers and City Health Officers of all Municipalities and Municipal Corporations will be conducted in TNIUS, Coimbatore at an estimated cost of ₹ 25.00 lakh for 2 days.
- Refresher programme for 15331 staff / officers of all categories of ULBs on the usage of 29 Municipal e-governance modules will be conducted in 5 training centres at an estimated cost of ₹ 381 lakh for 3 days.
- Training programme for 30251 Sanitary Workers and 9085 Sanitary Supervisors of all Municipalities and Municipal Corporations (under the control of CMA) on the best practices in handling Solid Waste and Liquid Waste, personal hygiene and community hygiene will be

conducted at an estimated cost of ₹ 498.00 lakh for 2 days.

- Classroom and hands on training at Chennai for 5 days and 4 days practical training and site visits at Manila for 170 Engineers of Municipalities and Municipal Corporations on hydraulic modelling and design of water supply and sewerage systems etc including practical training on distribution management, Non Revenue water reduction, leakage tests, SCADA and control system and related site visits will be provided at an estimated cost of ₹ 492.00 lakh.

2.16 Tamil Nadu Institute of Urban Studies (TNIUS)

To achieve greater efficiency in the functioning of the administration of ULBs, Tamil Nadu Institute of Urban Studies,

Coimbatore was established in 1981. The main objectives of TNIUS are

- To create awareness on the need for the application of latest management techniques in various branches of Municipal Administration
- To disseminate knowledge of municipal administration and urban development through training programmes, seminars, conferences, publications etc.
- To conduct research studies and consultancy services in urban development, municipal administration and related disciplines and
- To foster and assist in the development of urban infrastructure and for integrated urban development.

The details of trainings conducted and the number of people trained is given below :

Sl. No.	Training	Number of People Trained
(1)	(2)	(3)
1	Comprehensive Training Course for Junior Assistants of Municipalities and Corporations.	62
2	Refresher Training Course for Town Planning Officers/ Town Planning Inspectors of Corporations and Municipalities.	90
3	Three Days Special Training Programme on "Planning for Retirement" for Officials and Staff of Municipalities & Town Panchayats	411
4	Two day Special Training Programme on Centralised Web based software to Officials and Staff of Municipalities and Corporations	1012
5	Three days sensitization Programme on Applied Epidemiology for Sanitary Officers and Sanitary Inspectors of Corporations and Municipalities.	275
6	Two days exposure visit for newly recruited Assistant Town Planners of Karnataka State.	102

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

The Institute is at the forefront in conducting training for elected representatives and municipal staff. Various training programmes like orientation training for elected Representatives and comprehensive and refresher training course for officials and staff of ULBs are conducted.

Six training manuals for the Project "Zero Waste Town Panchayats" were prepared by TNIUS in association with Earth & Us, Auroville, Pondicherry and approved for printing of 25000 copies of each manual to conduct training in ten Regional Training Centers covering all Town Panchayat Officials, Staff and SHG etc., from March 2018 onwards through TNIUS.

The Institute has signed Memorandum of Understandings (MoU) with reputed State and National Training and Research Institutions given below for collaborative learning in the field of Urban Governance, Engineering and ICT and the process is on.

- Engineering Staff College of India (ESCI), Hyderabad.
- Indian Institute of Human Settlement (IIHS), Bengaluru.
- ICT Academy of Tamil Nadu, Chennai.
- Kumaraguru College of Technology, Coimbatore.

As an empanelled entity under AMRUT, Tamil Nadu Institute of Urban studies Institute is conducting Skill Development Training Programme for Sanitary Workers of Corporation and Municipalities. A total number of 3909 participants have been trained in two Phases.

The Government in its order vide Finance (Finance Commission-IV) Department G.O. No.84, dated 31st March 2017, sanctioned a special grant of ₹ 25.00 crore to TNIUS for developing infrastructure at its existing campus and to open regional centres in the first phase itself, either in rented premises or by co-locating with other Government training institutions.

Accordingly the Institute is under process of preparing proposals for the infrastructure development of the Tamil Nadu Institute of Urban Studies Campus and for the establishment of regional centers.

2.17 FINANCE COMMISSION

2.17.1 5TH STATE FINANCE COMMISSION RECOMMENDATION AND RELEASE OF GRANTS

As per 73rd & 74th Constitutional Amendments and as envisaged in Article 243 I and 243 Y of the Constitution of India each State

has to constitute a State Finance Commission once in Five Years to review the financial position of the local bodies and to make its recommendations.

Based on the above, Fifth State Finance Commission constituted w.e.f. 1.12.2014 and submitted its report and recommendations to the Hon'ble Governor of Tamil Nadu and Hon'ble Chief Minister of Tamil Nadu on 27.12.2016.

The Explanatory Memorandum on the action taken by the State Government on the recommendation of the Fifth State Finance Commission along with its report were placed on the Legislative Assembly and the decision taken by the Government was issued in G.O.No.84, Finance (FC IV) Department dated 31.3.2017.

The award period for the Fifth State Finance Commission is 5 years (from 2017-2018 to 2021-2022) commencing from April 2017 to

March 2022. Based on the decisions arrived at cabinet meeting on the recommendations of Fifth State Finance Commission, devolution fund will be released to urban local bodies by the Government as follows:

The Government has decided that the vertical sharing of devolution would be 10% of the Net State Own Tax Revenue.

The Commission has recommended 56:44 sharing ratio between Rural Local Bodies and Urban Local Bodies and the Government has accepted the recommendation.

The Commission recommended that the following devolution formula may be adopted for both the vertical sharing between tiers and horizontal sharing within the tier for Urban Local Bodies.

S.No.	Criterion	Weightage
1.	Population as per 2011 Census	65%
2.	Area	15%
3.	Per Capita consumption expenditure, distance	10%
4.	Proportion of Slum population	10%
	Total	100%

Based on the fifth State Finance Commission recommendations the quantum of fifth State Finance Commission Grant released to Municipal Corporations and Municipalities for the year 2017-2018 and the provision for sanction of SFC Grant in the Budget estimate for the year 2018-19 are furnished below:

(₹ in crore)

Year	12 Corporations	Capital Grant Fund	Operational & Maintenance Gap Filling Fund	Total	Municipalities	Capital Grant Fund	Operational & Maintenance Gap Filling Fund	Total	Grand Total (5+9)
1	2	3	4	5	6	7	8	9	10
2017-18	1215.82	227.96	75.99	1519.77	881.47	165.28	55.09	1101.84	2621.61
2018-19	1487.13	264.02	88.01	1839.16	1082.12	191.41	63.80	1337.33	3176.49

2.17.2 14th CFC – Recommendation and Release of Grants

The 14th Central Finance Commission (CFC) has submitted its report to the Hon'ble President of India and the recommendations of the commission have been accepted by the Government of India and communicated to the State Governments. The award period of 14th Finance Commission is from the year 2015-16 to 2019-2020.

- The 14th Finance Commission in its report among others, has recommended General Basic Grants to the Local Bodies as below:-
- Distribution of grants to the States using 2011 population data with a weight of 90 percent and area with a weight of 10 percent. The grant to each State will be divided into two parts.

- Grants in two parts – a Basic grant and performance grant for duly constituted gram Panchayats and Municipalities.
- In the case of gram Panchayats, 90 percent of the grant will be Basic grant and 10 percent will be the Performance grant. In case of Urban Local bodies, the division between Basic and Performance grant will be on a 80:20 basis.
- The Basic grant for Urban Local Bodies will be divided into tier wise shares and distributed across each tier, namely the Municipal Corporations, the Municipalities (the tier II Urban Local Bodies) and the Nagar Panchayats (the tier III Local Bodies) using the formula given by the respective State Finance Commissions. The State Governments should apply the distribution formula of the most recent

State Finance Commission, whose recommendations have been accepted.

The details of the allocation of funds for sanction of 14th Finance Commission grant for the year from 2015-16 to 2019-2020 are furnished below:

(₹ in crore)

Year	Basic Grant	Performance Grant	Total
2015-16	790.04	---	790.04
2016-17	1093.95	322.87	1416.82
2017-18	1263.96	365.37	1629.33
2018-19	1462.18	414.92	1877.10
2019-20	1975.71	543.31	2519.02
Total	6585.85	1646.46	8232.31

2.18 Corporations

2.18.1 Madurai Corporation

On 01.05.1971, Madurai has been constituted as Corporation. The population as

per 2011 census is 15, 61,129. The total number of wards is 100 and the extent is 147.99 sq.km with an average annual income of ₹ 412.32 crore. Water Supply is being maintained at the rate of 104 LPCD at an average frequency of once in two days.

Smart City Mission

- In the Second round of the Smart City Challenge competition, Madurai city has been selected. Meenakshi Amman Temple and its surroundings covering 15 wards has been taken for area based development.
- Madurai Smart City Limited (Special Purpose Vehicle) has been formed. 16 works at a cost of ₹ 1000.00 crore have been proposed.
- An amount of ₹ 217.00 crore has been released so far.

- Projects are at various stages of implementation (Like preparation of DPR, tendering etc.).

Atal Mission Rejuvenation and Urban Transformation (AMRUT)

Water Supply

Water Supply Improvement Scheme to Madurai corporation with source as Mullai Periyar Lower Camp at a cost of ₹1200 crore has been proposed to augment 125 MLD water under AMRUT 2017-20.

Parks

Under AMRUT 2015-16 to 2017-20, improvement of 16 Parks at an estimated cost of ₹ 8.09 crore have been taken up in three phases, of which 5 Parks have been completed and the balance are under progress.

Swachh Bharath Mission (SBM)

In a bid to eliminate open defecation and eradicate Manual scavenging, 6183 households having land for the construction of IHHL were identified for construction at an estimated cost of ₹ 4.95 crore. Work in 5370 households has been completed and the rest will be completed before 30.06.2018. Sanitation facilities for the households without land is provided through the construction of 56 Community toilets at an estimated cost of ₹ 67 crore, of which 42 Community toilets have been completed and balance works will be completed by June 2018.

Under IEC component, 50 Animators, 4 Supervisors and 1 Coordinator have been engaged for propagating good practices on sanitation and Solid Waste Management to the people. Preliminary surveys to collect basic details of sanitation are being done by animators

by giving emphasis on the identification of additional individual households without toilets.

National Urban Livelihood Mission

Construction of 15 Urban Homeless Shelters has been taken up at an amount of ₹ 3.88 crore. At present, 14 Shelters have been completed accommodating 602 Urban Homless and 1 short stay home at the Government Rajaji Hospital is nearing completion.

Solid Waste Management

Madurai City generates 720 tonnes of waste per day. To cater to the increasing waste being generated in the city, 28 Municipal Solid Waste composts centers are proposed to be taken up in the newly added areas. Bio-methanation plant with bottling unit of capacity 50 tonnes per day has been planned through Public Private Partnership mode.

Road Works (TURIP)

During this year 2017-18, 46.76 km length of roads were restored, damaged by UGSS and Water supply schemes.

Sanitary Workers Quarters

Madurai Corporation is employing more than 2000 sanitary workers. Hence, it has been proposed to construct 54 houses for sanitary workers at a cost of ₹ 5.00 crore in an area of 11156 sq.ft. in the Land near MMC Colony, Avaniyapuram.

Drought Relief Works

A Contingency plan has been proposed to combat forthcoming drought at a cost of ₹ 5.15 crore to rejuvenate bore wells / infiltration wells etc, and the works will be taken up on priority basis.

2.18.2 Coimbatore Corporation

Coimbatore has been constituted as Corporation on 01.05.1981. The population as per 2011 census is 16,01,438 and the total no of wards is 100. The extent is 265.36 sq.km with an average annual income of ₹ 662.71 crore. Water Supply is being maintained at the rate of 146 LPCD at an average frequency of once in five days.

Smart City Mission

Coimbatore city has been selected in the first round of the smart city challenge competition. The 14 wards covering eight lakes (Valangulam, Periyakulam, Selvacinthamani, krishnampathy, Narasampathy Selvampathy Kumarasamy, Singanallur) and its surroundings has been taken up for area based development.

Coimbatore smart city limited (Special Purpose Vehicle) has been formed. 23 works are proposed at cost of ₹ 1,172.72 crore.

An amount of ₹ 386.00 crore has been released so far and 6 works at a cost of ₹ 43.07 crore have been taken up and completed. Balance works are under various stages of implementation.

Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

The Water Supply Improvement Scheme for the 8 added areas in Coimbatore Corporation has been sanctioned at a cost of ₹ 395.41 crore under AMRUT 2015-16 and works are under progress.

Implementation of 24X7 Water Supply Scheme in erstwhile Corporation area at a cost of ₹ 556.56 crore has been now sanctioned under AMRUT 2016-17. Study of the proposed

project has been commenced by the Concessionaire.

The Underground Sewerage Scheme to Kurichi & Kuniyamuthur added areas at a cost of ₹ 442.00 crore under AMRUT 2016-17 with assistance of ADB has been taken up for implementation and is in tender stage.

Under AMRUT 2017-20, Water supply to added areas of Coimbatore Corporation has been taken up for improving water source from Pillur Dam for an amount of ₹ 740.15 crore.

Under AMRUT 2015-16 to 2017-20, improvement work of 21 Parks at an estimated cost of ₹ 14.49 crore has been taken up in three phases, of which 11 Parks have been completed and the balance is under progress.

German Development Bank

Water Supply improvement Scheme to 3 added areas namely (Kavundampalayam,

Vadavalli and Veerakeralam) of Coimbatore Corporation has been taken up at a cost of ₹108.16 crores. The work is under progress.

Swachh Bharat Mission (SBM)

To achieve the prime objective of elimination of open defecation envisaged under Swachh Bharat Mission, 6056 Individual Households with land for the construction of IHHL have been identified and the construction work has been taken up at a cost of ₹ 4.84 crore. Out of 6056 number of IHHL, 4862 has been completed and the remaining will be completed before June 2018.

To cater to the sanitation needs of households without Land, 39 Community Toilets have been taken up at a cost of ₹ 4.44 crore of which 34 Community toilets have been completed and others are in progress.

Under IEC component, 50 Animators, 5 Supervisors and 1 Coordinator have been engaged in propagating good practices on sanitation and Solid Waste Management to the people. Preliminary surveys to collect basic details of sanitation are being done by animators by giving emphasis for the identification of individual households without toilets.

As a result of the efforts taken for the curbing of Open Defecation practices, Coimbatore Corporation has been declared as an Open Defecation Free Town by MoHUA.

To facilitate scientific processing of Solid waste generated in the Corporation, Solid Waste Management Components have been sanctioned at an estimated cost of ₹ 10.36 crore under Swachh Bharat Mission. Works have been taken up to purchase Primary and Secondary vehicle for collecting the organic waste and for the

construction of dry waste collection centers. The above works are in various stages of progress.

National Urban Livelihoods Mission

A total of 5 shelter units for the urban homeless at an estimated cost of ₹ 1.96 crore were sanctioned. 4 shelters are completed and the remaining one unit is under progress. It is expected to be completed before June 2018.

Road Works (TURIP)

During the year 2017-18, 69.42 km length of roads was taken up for restoration, damaged by UGSS and Water supply schemes.

2.18.3 Tiruchirappalli Corporation

Tiruchirappalli has been constituted as Corporation on 01.06.1994. The population as per 2011 census is 9,16,857 and total no of wards is 65. The extent is 167.23 sq.km with an average annual income of ₹ 344.35 crore. Water

Supply is being maintained at the rate of 135 LPCD daily.

Smart City Mission

In the Third round of Smart City challenge competition, Tiruchirappalli City has been selected to be developed as Smart City. 19 wards covering Rock Fort and its surroundings have been taken up for Area based Development.

Tiruchirappalli Smart City Limited (Special Purpose Vehicle) has been formed. 18 works have been proposed at a cost of ₹ 1193.08 crore.

Project sanction and implementation has been commenced.

Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

Providing UGSS to the omitted areas and added areas of the Tiruchirappalli Corporation at

an estimated cost of ₹ 344.00 crore under AMRUT 2016-17 in Phase II and ₹ 312.14 crore under AMRUT 2017-20 in Phase III, have been taken up and are at various stages of implementation.

Under AMRUT 2015-16 to 2017-2020, improvement of 12 parks at an estimated cost of ₹ 8.64 crore have been taken up in three phases and the works in 3 parks have been completed and remaining parks are under progress.

German Development Bank

Water Supply Improvement Scheme to the added areas covering ward no. 61 to 65 is being implemented at an outlay of ₹ 63.70 crore under German Development bank (KfW) fund assistance. On completion of this scheme, residents will be given water supply of 135 LPCD

Drought Relief Works

Under Drought relief fund 2017-18, 4 works for the total value of ₹ 50.00 lakhs have been executed.

Swachh Bharat Mission

To achieve the prime objective of elimination of open defecation envisaged under Swachh Bharat Mission, 4048 Individual Households Latrines have been taken up at a cost of ₹ 3.24 crore. All Individual Households Latrines have been completed.

To cater to the sanitation needs of households having no land for toilet construction, 32 Community Toilets has been taken up at a cost of ₹ 4.06 crore of which 30 completed and balance works are in progress.

Under IEC component, 32 Animators, 4 Supervisors and 1 Coordinator have been

engaged in propagating good practices on sanitation and SWM to the people. Preliminary surveys to collect basic details of sanitation are being taken up by animators by giving emphasis for identification of individual households without a toilet.

Under SWM Component of SBM, works have been sanctioned at an estimated cost of ₹ 26.83 crore. It was proposed to establish 29 Micro Compost Centers for processing the organic waste. So far 23 works are completed and balance 6 works are in various stages of progress.

Trichy Corporation is declared as an Open Defecation Free Town by Ministry of Housing and Urban Affairs during the year 2017-18.

National Urban Livelihoods Mission

A total of 5 shelter units for the urban homeless at an estimated cost of ₹ 2.45 crore

were sanctioned. 3 shelter units are completed and the remaining 2 units are expected to be completed before end of June 2018.

Slaughter House

Ministry of Food Processing Industries, Government of India, New Delhi has given sanction to construct Modern abattoir at Gandhi market and Panchapur are as detailed below.

(₹ in crore)

Sl. No	Name of the work	Estimate Amount
1	Construction of abattoir @ Gandhi Market in ward no.14	3.57
2	Construction of abattoir @ Panchappur in ward no.39	6.92

Construction of an abattoir at Gandhi Market has been completed and put into use, whereas the construction of abattoir at Panchappur is under progress.

Construction of Modern Fish Market

National Fisheries Development Board, Government of India, Hyderabad has sanctioned ₹ 100.00 Lakhs for the construction of the Modern Hygienic Fish Market in Kasivilangi area in Ward No.60, K-Abishekapuram Zone of this Corporation. Total Project Cost is ₹ 3.32 crore and the remaining ₹ 2.32 crore will be met from the Corporation Fund. The Construction work is in progress.

Road Works (TURIP)

During the year 2017-18, 11.35 km length of roads was taken up restoration, damaged by UGSS and Water supply schemes.

2.18.4 Salem Corporation

Salem has been constituted as Corporation on 01.06.1994. The population as per 2011 census is 8,34,792 and total no of wards is 60.

The extent is 91.34 sq.km with an average annual income of ₹ 168.31 crore. Water Supply is being maintained at the rate of 140 LPCD at an average frequency of once in two to three days.

Smart City Mission

In round two of the “Smart City Challenge” Completion, Salem City has been selected. 11 wards in the city have been taken up for Area Based Development.

Salem Smart City Limited (Special Purpose Vehicle) has been formed. An amount of ₹ 1418 crore has been sanctioned for 22 works.

So far, an amount of ₹ 217.00 crore has been released.

Project sanction and implementation has commenced.

Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

Under AMRUT 2015-2020, 17 parks at a cost of ₹ 8.29 crore have been taken up for the development, in which 4 parks have been completed and balance 13 Parks are under progress.

Swachh Bharat Mission

To achieve the prime objective of elimination of open defecation envisaged under the Swachh Bharat Mission, 3905 Individual Households Latrines have been taken up at a cost of ₹ 3.12 crore of which 3299 completed and others are in progress

To cater to the sanitation needs of households not having land for toilet construction, 46 Community Toilets have been taken up with 526 seats at a cost of ₹ 7.62 crore of which 31 completed and balance works are in progress.

Under IEC component, 30 Animators, 4 Supervisors and 1 Coordinator have been engaged in propagating good practices on sanitation and SWM to the people. Preliminary survey to collect basic details of sanitation is being taken up by animators by giving emphasis for identification of households without a toilet.

Salem Corporation is declared as an Open Defecation Free Town by Ministry of Housing and Urban Affairs.

Under SWM Component of SBM, SWM works have been sanctioned at an estimated cost of ₹ 12.20 crore. It was proposed to establish 14 Micro Compost Centre for processing the organic waste.

National Urban Livelihoods Mission

Under the component of shelter for urban Homeless, 6 shelter units at an estimated cost of ₹ 2.05 crore were sanctioned. All the 6 shelters are completed.

Road Works

During this year 2017-18, 27.086 km length of roads was taken up under TURIP for restoration. In addition a length of 157.24 km was taken up for restoration under the Special Fund of Government of Tamil Nadu.

2.18.5 Tirunelveli Corporation

Tirunelveli has been constituted as Corporation on 01.06.1994. The Population as per 2011 census is 4,74,838 and total no of wards is 55. The total extent of the city is 108.65 sq.km. The average annual income of this corporation is ₹ 238.60 crore. Water Supply is being maintained at the rate of 101 LPCD of one to two days.

Smart City Mission

In the 3rd round of Smart City Challenge Competition Tirunelveli City has been selected to

develop as Smart city. Nellaiappar temple and its surroundings 10 wards are taken as the ABD area.

Tirunelveli Smart City Limited (Special Purpose Vehicle) has been formed. 30 works at a cost of ₹ 986.18 crore have been sanctioned.

Projectizations of proposals are under progress.

Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

The Underground Sewerage Scheme in added and omitted areas of the Tirunelveli Corporation under AMRUT 2016-17 to the tune of ₹ 289.01 crore in Phase II and ₹ 440.19 crore in Phase – III with the financial assistance of ADB have been taken up for implementation and are in the stage of the tendering process.

Under AMRUT 2015-16 to 2017-20, improvements to 14 Parks at an estimated cost

of ₹ 8.04 crore have been taken up in three phases. Of which, 9 Parks have been completed and balance are under progress.

Kfw

45 Nos of parks were taken up for improvement under German Development Bank assisted SMIF-TN-II-1 at a cost of ₹ 29.765 crore.

Swachh Bharat Mission

Under SBM, 3926 Individual Households Latrines have been taken up at a cost of ₹ 3.14 crore of which 3051 toilets have been completed and others are in progress.

Under SBM, 19 Community Toilets have been taken up with 153 seats at a cost of ₹ 1.55 crore. All works completed.

Under IEC component 28 Animators, 4 Supervisors and 1 Coordinator have been

engaged in propagating good practices on sanitation and SWM to the people. Preliminary survey to collect basic details of sanitation and SWM are being taken up by animators by giving emphasis for identification of households without a toilet.

Tirunelveli Corporation was declared as an Open Defecation Free Town by Ministry of Housing and Urban Affairs during the year 2017-18.

Under SBM, SWM Projects have been sanctioned at an estimated cost of ₹ 12.36 crore. It has been proposed to purchase Primary and Secondary vehicle for collecting the Solid waste. Also, sanction has been accorded to establish 37 Micro Compost Centers for processing the organic waste at an estimated cost of ₹ 6.63 crore and it is in the process of invitation of tender.

National Urban Livelihoods Mission

Under the sub component of Shelter for Urban Homeless, 3 shelter units were sanctioned at an estimated cost of ₹ 0.80 crore. All works are completed.

Road Works (TURIP)

During the year 2017-18, 20.35 km length of roads was taken up for restoration, damaged by UGSS and Water supply schemes.

2.18.6 Erode Corporation

Erode has been constituted as Corporation on 01.01.2008. The Population as per 2011 census is 4,98,121 and total no of wards is 60. The extent is 109.52 sq.km. The average annual income of this corporation is ₹ 213.35 crore. Water Supply is being maintained at the rate of 112 LPCD at an average frequency of once in two to three days.

Smart City Mission

In the fourth round of "Smart City Challenge" competition Erode City has been selected to develop as smart City. The 16 wards in the Core area of the city has been taken for Area based Development.

Formation of Erode Smart City Limited (Special Purpose Vehicle) is under progress. An amount of ₹ 934.94 crore has been sanctioned for 17 works.

Projectizations of proposals are under progress.

Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

The dedicated Water Supply Scheme has been taken up under AMRUT 2015-16 at a cost of ₹ 484.45 crore for implementation and is under progress.

Under AMRUT 2015-16 to 2017-20, improvements to 20 Parks at an estimated cost of ₹ 8.47 crore have been taken up in three phases. Of which, 4 Parks have been completed and the balance is under progress.

Swachh Bharath Mission

Under SBM, 3554 Individual Households Latrines have been taken up at a cost of ₹ 2.84 crore of which 3115 have been completed and others are in progress.

Under SBM, 11 Community Toilets have been taken up with 115 seats at a cost of ₹ 2.10 crore. All works have been completed.

Under IEC component 30 Animators, 4 Supervisors and 1 Coordinator are engaged in propagating good practices on sanitation and SWM to the people. Preliminary surveys to collect basic details of sanitation are being taken

up by animators by giving emphasis for identification of households without a toilet.

Erode Corporation is declared as an Open Defecation Free Town by Ministry of Housing and Urban Affairs during the year 2017-18.

Under SBM, Integrated Solid Waste Management project for an estimated amount of ₹ 12.77 crore has been taken up for primary collection and for infrastructure facilities for processing. Out of 12 works taken up, 5 works have been completed and balance works are in various stages of progress.

National Urban Livelihoods Mission

Under the shelter for Urban Homeless component 3 shelter units were sanctioned at an estimated cost of ₹ 0.80 crore. Of these, 2 shelters are completed and 1 unit is under progress.

Road Works (TURIP)

During the year 2017-18, 5.45 km length of roads was taken up for restoration, damaged by UGSS and Water supply schemes.

O&M Gap Filling Fund

Under O&M Gap Filling Fund, 4 works have been taken up at an estimated cost of ₹ 1.90 crore. All works are under various stages of progress.

Under Infra Gap Filling Fund and O&M Gap filling fund, Construction of sanitary workers' quarters at an estimated cost ₹ 3.00 crore and slaughter house at an estimated cost of ₹ 0.75 crore respectively have been taken up and the works are under progress.

KfW

The Underground Sewerage Scheme has been taken up at an estimated cost of

₹ 209.22 crore under German Development Bank fund and the work is nearing completion.

Central Finance Commission

Under 14th central and state finance commission grants, 15 roads have been taken for restoration works for a length of 8.82 k.m at an estimated cost of ₹ 8.01 crore in which 4 works have been completed and remaining works are in various stages of implementation.

Under State Balance Growth Fund, two works have been taken up, in which one work has been completed and another work is under progress.

2.18.7 Tiruppur Corporation

Tiruppur has been constituted as Corporation on 01.01.2008. The Population as per 2011 census is 8,77,778 and total no of wards is 60. The total extent of the city is

159.35 sq.km.The average annual income of this corporation is ₹ 201.01 crore. Water Supply is being maintained at the rate of 144 LPCD at an average frequency of once in 4 to 5 days.

Smart City Mission

In the Third round of Smart City Challenge competition Tiruppur City has been selected to develop as Smart City. The 15 wards along Noyal River has been taken as ABD area.

Tiruppur Smart City Limited (Special Purpose Vehicle) has been formed. An amount of ₹ 1003.98 crore has been sanctioned for 19 sanctioned works. Projectizations of proposals are under progress.

Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

The Water Supply Improvement Scheme to the added areas have been taken up under

AMRUT 2015-16 at a cost of ₹ 250.00 crore and is under progress.

Under AMRUT 2015-16 to 2017-20, improvement to 18 Parks at an estimated cost of ₹ 10.91 crore have been taken up in three phases. Of which, 3 Parks have been completed and the balance is under progress.

Swachh Bharath Mission

Under SBM, 4428 Individual Households Latrines have been taken up at a cost of ₹ 3.54 crore of which 4353 completed and others are in progress

Under SBM, 44 community toilets have been taken up with 384 seats at a cost of ₹ 6.36 crore of which 33 completed and balance works are in progress.

Under IEC component 30 animators, 4 supervisors and 1 coordinators are engaged

for propagating good practices on sanitation and SWM to the people. Preliminary surveys to collect basic details of sanitation are being taken up by animators by giving emphasis for identification of households without a toilet.

Tirupur Corporation is declared as an Open Defecation Free Town by Ministry of Housing and Urban Affairs during the year 2017-18.

Under SBM, Integrated Solid Waste Management project for an estimated amount of ₹ 19.46 crore has been taken up for primary collection, Secondary transportation, to establish of Resource Recovery center and to establish the C&D waste processing plant. Out of 20 works taken up, 12 works have been completed and balance works are in various stages of progress.

National Urban Livelihoods Mission

Under NULM Scheme, 5 shelter units at an estimated cost of ₹ 1.52 crore have been

sanctioned for the Construction of shelters. 4 shelter units are completed and the remaining 1 shelter unit is under progress.

TURIP

Under TURIP Scheme 37 road works were taken up for restoration, damaged by UGSS and water supply schemes. Out of 37 works, 2 road works have been completed, and the remaining road works are in progress.

DTCP Fund Scheme (Infrastructure Amenities Fund (I&A))

In the 15th State Infrastructure and Amenities Promotion committee meeting held on 17.08.2017, ₹ 13.70 crore has been sanctioned under DTCP Infrastructure and Amenities fund scheme for Construction of 3 Bridges and 20 of widening and formation of major roads.

2.18.8 Vellore Corporation

Vellore Corporation has been constituted on 01.08.2008. The geographical area of Vellore

city Municipal Corporation is 87.915 sq.km and has 60 administrative wards. The population of the city is 5,04,079 as per 2011 census. The average annual income is ₹ 80.42 crore. Water Supply is being maintained at the rate of 115 LPCD at an average frequency of once in two days.

Smart City Mission

In the Second round of Smart City Challenge competition the Vellore City has been selected to develop as Smart City. Vellore Fort and its surroundings 12 wards are taken as ABD area.

Vellore Smart City Limited (Special Purpose Vehicle) has been formed. 21 works at a cost of ₹ 983.44 crore have been sanctioned.

So far, an amount of ₹ 217.00 crore has been released.

Projectizations of proposals are under progress.

Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

The Water Supply Improvement Scheme has been taken up under AMRUT 2015-16 at a cost of ₹ 240.92 crore and is under progress.

The Underground Sewerage Scheme to the added areas and omitted areas of the Vellore corporation under AMRUT 2016-17 to the tune of ₹ 343.69 crore in Phase II, and in phase III financial assistance of ₹ 293.77 crore under ADB have been taken up for implementation and are in the tendering process.

Under AMRUT 2015-16 to 2017-20, improvements to 12 Parks at an estimated cost of ₹ 6.90 crore have been taken up in three phases. Of which, 4 Parks have been completed and the balance is under progress.

Swachh Bharat Mission

Under SBM, 7250 individual household latrines have been taken up at a cost of ₹ 5.80 crore of which 5550 completed and others are in progress.

Under SBM, 23 Community Toilets have been taken up with 230 seats at a cost of ₹ 4.37 crore. All works completed.

Under IEC component, 30 animators, 4 supervisors and 1 coordinator are engaged in propagating good practices on sanitation and SWM to the people. Preliminary survey work to collect basic details of sanitation are being taken up by animators by giving emphasis for identification of households without a toilet.

Vellore Corporation has been declared as an Open Defecation Free Town by Ministry of Housing and Urban Affairs during the year 2017-18.

Under SBM, SWM Projects have been sanctioned at an estimated cost of ₹ 18.40 crore to establish 42 micro compost centre for processing the organic waste. All works have been completed and the centres are put to use.

National Urban Livelihoods Mission

Under National Urban Livelihoods Mission, construction of 2 shelters for urban homeless have been taken up at an estimated cost of ₹ 0.83 crore. One work has been completed and the other is under progress.

2.18.9 Thoothukudi Corporation

Thoothukudi Corporation has been constituted as corporation on 05.08.2008. The population of this Corporation as per 2011 census is 3,72,408 and the total number of wards is 60. The geographical extent is 90.66 sq.km with an average annual income of ₹ 97 crore. Water

Supply is being maintained at the rate of 123 LPCD at an average frequency of once in 3 days.

Smart City Mission

In the third round of Smart City Challenge competition Thoothukudi city has been selected to develop as Smart City. The 15 wards along Bukkle Odai are taken as ABD area.

Thoothukudi smart city limited (Special Purpose Vehicle) has been formed. An amount of ₹ 743.60 crore has been sanctioned for 21 works.

Projectizations of proposals are under progress.

Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

Under AMRUT 2015-16 to 2017-20, improvement to 9 parks at an estimated cost of ₹ 6.72 crore has been taken up in three phases.

Of which, 5 parks has been completed and balance are under progress.

Swachh Bharat Mission

Under SBM, 2961 Individual Households Latrines have been taken up at a cost of ₹ 2.37 crore of which 1828 toilets completed and others are in progress

Under SBM, 21 community toilets have been taken up with 118 seats at a cost of ₹ 2.16 crore. Of which 14 works have been completed and the balance is in progress.

Under IEC component 30 animators, 4 supervisors and 1 coordinator are engaged in propagating good practices on sanitation and SWM to the people. Preliminary surveys to collect basic details of sanitation are being taken up by animators by giving emphasis for identification of households without a toilet.

Thoothukudi Corporation is declared as open defecation free town ministry of housing and urban affairs during the year 2017-18

Under SBM, SWM projects have been sanctioned at an estimated cost of ₹ 20.08 crore to establish 16 micro compost centre for processing the organic waste. So far 3 works have been completed and balance 13 works are in various stages of progress.

Road Works (TURIP)

During the year 2017-18, 19.40 km length of roads was taken up for restoration, damaged by UGSS and Water supply schemes.

2.18.10 Thanjavur Corporation

Thanjavur Municipality was upgraded to City Municipal Corporation from 19.02.2014. The total area is 128.02 sq.km with the total population of 3,51,655. Total number of wards is

51 and the average annual income is ₹ 115.67 crore. Water Supply is being maintained daily at the rate of 124 LPCD.

Smart City Mission

In the Second round of “Smart City Challenge competition” Thanjavur City has been selected to develop as Smart City. The big Temple and its surroundings area (11 wards) are taken as ABD area.

Thanjavur smart city limited (Special Purpose Vehicle) has been formed. 19 works have been sanctioned at a cost of ₹ 955.01 crore.

So far, an amount of ₹ 217.00 crore has been released.

Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

The Water supply improvement scheme has been taken up under AMRUT 2015-16 at a cost of ₹ 48.14 crore and is in progress.

Under AMRUT 2015-16 to 2017-20, improvements to 13 Parks at an estimated cost of ₹ 7.87 crore have been taken up in three phases. Of which, 3 Parks have been completed and the balance is under progress.

Swachh Bharat Mission

Under SBM, 1862 individual household latrines have been taken up at a cost of ₹ 1.49 crore of which 1446 toilets completed and others are in progress.

Under SBM, 63 Community Toilets have been taken up with 224 seats at a cost of ₹ 4.97 crore, of which 58 have been completed and balance works are in progress.

Under IEC component, 26 animators, 4 supervisors and 1 coordinator are engaged in propagating good practices on sanitation and SWM to the people. Preliminary surveys to collect basic details of sanitation are being taken

up by animators by giving emphasis for households without toilets.

Thanjavur Corporation is declared as an Open Defecation Free Town by Ministry of Housing and Urban Affairs during the year 2017-18.

Under SWM component, SWM projects have been sanctioned at an estimated cost of ₹ 11.85 crore to purchase primary and secondary collection vehicles and processing facilities.

National Urban Livelihoods Mission

Under the component of "Shelter for Urban Homeless", 2 shelter units at an estimated cost of ₹ 1.38 crore was sanctioned. One shelter unit is completed and the other will be completed before May 2018.

IGFF and O&MGFF

Under IGFF 2017-18, Construction of Office Building at an estimate cost of ₹ 6.50 crore has been sanctioned and work is in progress.

Under O & M GFF 2017-18, construction of a gasifier crematorium in Marikulam at an estimate cost of ₹ 1.00 crore has been sanctioned and work is in progress.

2.18.11 DINDIGUL CORPORATION

Dindigul has been constituted as corporation on 19.2.2014. The population as per 2011 census is 2,07,225 and the total number of wards is 48. The extent is 14.01 sq. km with an average annual income of ₹ 44.74 crore. Water supply is being maintained at the rate of 80 LPCD at an average frequency of once in five days.

Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

Under AMRUT 2015-16 to 2017-20, improvements to 16 Parks at an estimated cost

of ₹ 7.51 crore have been taken up in three phases. Of which, 3 Parks has been completed and balance is at various stages of implementation.

Swachh Bharath Mission

Under SBM, 3265 Individual Households Latrines have been taken up at a cost of ₹ 2.61 crore of which 2806 have been completed and others are in progress

Under SBM, 12 Community Toilets have been taken up with 170 seats at a cost of ₹ 1.88 crore. of which 6 have been completed and balance works are in progress.

Under IEC component, 24 Animators, 4 Supervisors and 1 Coordinator have been engaged in propagating good practices on sanitation and SWM to the people. Preliminary survey to collect basic details of sanitation and SWM are being taken up by animators by giving

emphasis for identification of households without a toilet.

Dindigul Corporation has already been declared as an open defecation free town by ministry of housing and urban affairs during the year 2017-18

Under SBM, 12 Micro composts centers have been sanctioned for processing the organic waste at an estimated cost of ₹ 8.35 crore.

National Urban livelihoods Mission

Under the component of shelter for urban homeless, 2 shelter unit at an estimated cost of ₹ 0.80 crore were sanctioned. One unit has been completed and the remaining one shelter unit is nearing completion.

Road Works (TURIP)

During the year 2017-18, 20.80 km length of roads was taken up for restoration, damaged by UGSS and Water supply schemes.

JICA

Under JICA Scheme, a sum of ₹ 70.50 crore has been sanctioned for improvement of water supply scheme. 98% of work have been completed.

Infrastructure Gap Filling Fund

Under IGFF Scheme a sum of ₹ 20.00 crore has been sanctioned for augmentation of additional storage and desilting of Kamarajar Sagar Dam at Atthur. 98% of work have been completed.

Central Finance Commission

Under 14th Central Finance Commission for the year 2017-18 a sum of ₹ 3.00 crore has been sanctioned for Road Works.

2.19 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 2016-17, the Tirunelveli Corporation was adjudged the best among the Corporations (Cash Prize of ₹25 lakh) and Sathyamangalam, Poonamallee and Thirumangalam 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 urban local bodies during the Independence Day Celebrations in the year 2017.

3. Greater Chennai Corporation

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

The Corporation of Chennai has a glorious 330 years of history and it carries a good mix of heritage as well as modern infrastructure facilities. It derives its statutory authority from the Chennai City Municipal Corporation Act, 1919. As per 2011 census, the population of Greater Chennai Corporation is 67.27 lakh. The Jurisdiction of the city is expanded from 174 sq. km to 426 sq. km in 2011 by the inclusion of 42 local bodies, thereby it becomes the 4th largest Municipal Corporation in the country.

Corporation of Chennai was renamed as "Greater Chennai Corporation" by late Hon'ble Chief Minister of Tamil Nadu on 29.01.2016.

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

To augment the human resources and for catering to additional responsibilities in an effective manner, subsequent to the expansion,

the Government has sanctioned 784 additional posts. This has facilitated quick response in decision making as well as grievance Redressal to the satisfaction of the public.

There are 12,14,823 assesses of Property tax and 1,21,439 assesses of Professional tax in Greater Chennai Corporation.

During the year 2017-18, the Property tax collection was ₹ 720.72 crore and professional tax collection was ₹ 339.78 crore.

Greater Chennai Corporation had a capital expenditure of ₹ 2033.76 crore for the year 2016-17 and for the year 2017-18, it is ₹ 1616.00 crore.

3.1 Amma Unavagam

The late Hon'ble Chief Minister of Tamil Nadu has made an announcement to open "Amma Unavagam" to provide hygienic food at

subsidized price to benefit the poor and needy people residing in slum areas, daily-wage workers, auto drivers and elders. The Greater Chennai Corporation has opened 400 Amma Unavagams at different locations and 7 Amma Unavagams in Government hospitals. Totally 407 Amma Unavagams are running successfully at present. People are served Idly, Pongal in the morning; Sambar rice, Curry Leaves Rice, Lemon Rice and Curd Rice in the afternoon and Chappathi with dhal in the evening. Amma Unavagams provide one idly for ₹ 1, pongal for ₹ 5, variety rice (Sambar Rice, Curry Leaves Rice and Lemon Rice) for ₹ 5, curd rice for ₹ 3 and in the evening 2 chapathis with dhal for ₹ 3 to benefit the poor and needy.

51.65 crore Idlis, 18.28 crore packet of variety rice and 23.26 crore chapathis have been served so far through Amma Unavagams. Through these Amma Unavagams,

approximately 3.5 lakh poor people are benefiting every day. The Amma Unavagam project has been considered as the best social security program in the world and neighboring states like Andhra Pradesh, Telangana and Karnataka have replicated this model.

3.2 Amma Kudineer

An announcement was made by the late Honourable Chief Minister of Tamil Nadu on 13.02.2016 to implement "Amma Kudineer Scheme" whereby purified drinking water would be given to fulfill the desire of poor and deprived section of the society to get Reverse Osmosis(RO) water.

Till date 50 drinking water dispensing machines were installed at a cost of ₹ 5.30 crore in the localities of low / medium income residential areas. These plants are having production capacity of 2,000 liters per hour,

which is expandable depending on the local demands.

By this scheme, each family is provided with 20 liters of purified drinking water per day at free of cost. Till May 2018, 10.68 crore of liters of purified water has been dispensed with an average supply of 8,000 liters / day / plant.

3.3 National Urban Health Mission

As per the guidelines under “National Urban Health Mission” one Urban Primary Health Centre (UPHC) shall be there for every 50,000 population and one Urban Community Health Centre (UCHC) shall be there for every 5 lakh population. According to this guideline, Greater Chennai Corporation has to establish 140 UPHCs and 15 UCHCs in Greater Chennai Corporation area. At present 140 UPHCs and 14 UCHCs are established and being successfully run by the

Greater Chennai Corporation. Remaining one UCHC is under construction.

In order to administer National Urban Health Mission activities in Greater Chennai Corporation, Chennai City Urban Health Mission is formed. A sum of ₹ 273.62 crore has been allotted under National Urban Health Mission to Greater Chennai Corporation from 2013-2014 to 2018-2019 for carrying out various activities of the scheme.

Out of this, a sum of ₹ 107.50 crore have been approved for construction of new buildings for 34 UPHCs, 8 UCHCs and renovation of 100 UPHCs from the years 2013-14 to 2017-18. 17 UPHCs have been newly constructed till May 2018 at the cost of ₹ 11.34 crore. Work is under progress in 8 UCHCs and 3 UPHCs. Renovation work has been carried out for 85 existing UPHCs till May 2018 at the cost of ₹ 13.43 crore.

Further, Polyclinics are established in 19 centres in 2017-18 to provide additional specialty medical services to the people in order to establish an institutional arrangement for early detection and prevention of chronic diseases. These Polyclinics (specialist outpatient clinics) are functioning in the evening from 4.30-8.30 pm. General Medicine, Obstetrics & Gynaecology, Pediatrics, Ortho & Physiotherapy, Dental and Ophthalmology services are provided.

3.4 AYUSH Clinics

Three Ayush Clinics have been opened in the Greater Chennai Corporation (Ayurveda, Yoga, Naturopathy, Unani, Siddha and Homeopathy) in zone 4, 10 and 13 to provide the five services in alternative Indian systems of medicine. These clinics are manned by 5 doctors with one each from Indian systems of medicine. Since March 2016, every day on an average 200 out-patients are being treated 4,10,000 patients have been treated in these clinics so far.

3.5 Shelter for Urban Homeless

At present the Greater Chennai Corporation is running 36 shelters for urban homeless and 10 special shelters (in Hospitals) for attendants of the in-patients. These shelters are being run in co-ordination with Non-Governmental Organizations.

3.5.1 Special Shelters

As per late Hon'ble Chief Minister's 110 announcement, 10 special shelters at the Government Hospitals for attendants of the in-patients have been established as given below:

Rajiv Gandhi Government Hospital	01
Kilpauk Hospital	02
Institute of Obstetrics and Gynecology	02
Institute of Child Health	01
RSRM Hospital	02
Stanley Hospital	02

In addition, 3 Hospital Shelters, i.e., One in the Rajiv Gandhi General Hospital, and other two at the Kasturibhai Gandhi Government Hospital are proposed and construction work is under progress.

3.5.2. Other Category of shelters

Apart from the above special shelters in hospitals, shelters for vulnerable sections of population as detailed below are established by Greater Chennai Corporation.

Sl. No.	Types of Shelter	Total
1	Children's Shelter (Girls)	4
2	Children's Shelter (Boys)	5
3	Developmental disability children shelter (boys)	1
4	Women's shelter	8
5	Men's shelter	11
6	Women and Men's shelter	1
7	Elderly men and women	2

8	People with Psycho Social needs (Women)	1
9	People with Psycho Social needs (Men)	2
10	Physically Challenged Women	1
Total		36

So far, these shelters have benefited a total of 6,439 people and presently 1,733 beneficiaries are staying in these shelters.

3.6 Public Health Control Activities:

3.6.1 Animal Birth Control Programme

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

The stray dogs are being caught either voluntarily by a corporation or based on specific complaints from the public, sterilized and immunized against rabies and then released in the same area where they are caught.

During the financial year 2017-18 and up to April 2018, through these ABC centers 14,206 stray dogs have been sterilized. A total of 16 dog-catching vehicles are deployed for dog catching operations. Private dog-catchers are also engaged in catching and releasing of dogs.

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

3.6.2 Vector Control Activities

In order to control vector borne diseases in Greater Chennai Corporation, Anti Adult and Anti larval measures against mosquito are carried out by treatment of larvicides, spraying and fogging methods.

Fogging operations are carried out with the help of 39 vehicle mounted fogging machines and 246 hand held fogging machines and

25 mini fogging machines. In addition, 445 hand held spray machines and 15 power sprayers are used to spray larvicides in storm water drains, open drains and canals. Gambusia fishes are being introduced into water bodies to eradicate larvae breeding.

Further, a sophisticated Amphibian vehicle, which works on land as well as water, has been purchased at a cost of ₹ 4.44 crore from Finland and this machine is being deployed in Buckingham canal and Captain Cotton canal. Water hyacinth has been cleared in an area of 89,270 sq.m, so far and approximately, 24,732 cu.m of silt has been removed from Captain Cotton canal. In the same way, Water hyacinth has been cleared from 1,44,000 sq.m area and approximately 29,250 cu.m of silt has been removed from Buckingham Canal.

This has resulted in deepening of these water bodies and ensured the free flow of water

in the canals and hence, the mosquito density has been reduced in the Chennai city, especially in areas like Dr.R.K Nagar, Tondiarpet, Korrukuppet, Vysarpadi, Royapuram and Mylapore. For desilting micro canals which are of narrower width, 3 Robotic Multipurpose Excavators machine have been purchased of ₹ 19.65 crore from Switzerland. By deploying these Robotic Excavator Machines, it is proposed to periodically de-silt and de-weed all the 30 micro canals under the control of Greater Chennai Corporation.

In addition, during the year 2016-2017, 11 fibre boats were purchased for an amount of ₹ 3.19 lakh to spray Larvicides and for removing water Hyacinth in canals located in Chennai city. Due to the removal of Hyacinth and accumulated garbage from the waterways, steady flow has been ensured thereby resulting in a reduction of larval breeding source.

3.7 Other Services of Public Health Department

3.7.1. Slaughter House

Greater Chennai Corporation has constructed four slaughter houses and operating them for providing clean and wholesome meat to the public. Veterinary Assistant Surgeons conduct Antemortem and Post - Mortem inspection of animals in the slaughterhouses periodically.

As per the guidelines of Tamil Nadu Pollution Control Board, Effluent Treatment Plants have been installed in these slaughter houses.

3.7.2 Birth and Death Registration

The Birth and Death events in Greater Chennai Corporation are being registered by the Birth and Death Registrars (Sanitary Inspectors) of the zones and the Certificates are uploaded

online for the general public to download these certificates from the corporation website at free of cost. Since the commencement of online services 1,75,46,278 numbers of Birth Certificates and 42,06,249 Death Certificates have been downloaded through internet by the public at free of cost.

3.7.3 Burial Grounds

The Greater Chennai Corporation maintains 88 Burial Grounds out of the total 206, in which 28 are Gasifiers and 8 are Electrical Crematoriums providing facilities at free of cost to the Public.

3.8 Education Department

The Greater Chennai Corporation runs 281 schools, of which 119 are primary, 92 middle, 38 high and 32 are higher secondary schools. Kinder Garten sections are functioning in 200 primary and middle schools with 11,569

students. In the year 2017-2018 a total of 85,910 students studied in Greater Chennai Corporation schools.

Education Department of Greater Chennai Corporation has been trying to offer holistic education standards for the needy children. Greater Chennai Corporation provides scholarships for the students to pursue their higher studies in all streams like Engineering, 150 students, Arts and Science 150 students, Diploma 50 students, Teaching & Nursing 50 students, Law 15 students, integrated studies 10 students and these scholarships are continued throughout the course period. Uniforms are distributed to students from 9th std to 12th std. Uniforms and notebooks are also given to all the kindergarten students free of cost by Greater Chennai Corporation.

100 grams of protein rich "sundal" is being provided to 10th std, 11th std & 12th std students

so as to improve their nutrition level. Exclusive Art Labs are introduced to train students in fine arts and musical instruments. 84 Smart classrooms have been introduced in the middle schools, high schools and higher secondary schools to make the learning more interesting to the students. Smart class rooms have started in 20 higher secondary schools and 8 middle schools with advance technologies and 40 Tablets provided to each class rooms.

The students studying in Greater Chennai Corporation schools are actively encouraged to read "Tamil and English" newspapers daily at school to improve their general knowledge.

Generators have been installed in all the 70 high and higher secondary schools to ensure uninterrupted learning process. In Labs congenial atmosphere for the teaching-learning process has been enabled by providing suitable equipments. For the benefit of children coming

from downtrodden families, Two Amma Residential Schools are being run by Greater Chennai Corporation, one at Chennai Girls Higher Secondary school, Saidapet and the other at the Chennai Higher Secondary School, Subbarayan Street, Aminjikarai and the students at these two schools have achieved a 100 % pass percentage.

Special Programme, namely "Spark Integrated Programme" is introduced for the brightest students. Under this programme, the students were placed in the residential school and are trained with special coaching, so as to secure maximum marks and to get admission into the premier institutions.

Every year the students who have studied in Greater Chennai Corporation Schools have secured high marks in +2 public exams and join in various professional courses. One student got 1177/1200 marks which is the maximum mark

scored by any +2 Student and brought glory to the education department of Greater Chennai Corporation. In the year 2016-2017, 179 students have joined in Engineering courses, 11 students in Medicine, 3,138 students in Arts and Science, 37 students in Nursing Institute, 6 students in Law courses and 135 students have joined Diploma courses.

This year 5,788 students appeared for the 12th Std examination out of this total, 2,199 were boys and 3,589 were girls. Out of 5,139 students have passed out with flying colours. Out of them 1,782 were boys and 3,357 were girls. The pass percentage is 88.79 this was an increase of about 0.05 percentage. 69 students secured 200/200. Further 74 Students secured above 1100 marks. 326 Students secured above 1000 marks and 3 Schools secured 100% result.

This year 5,908 students appeared for the 10th standard examination. Out of this

2,765 were boys and 3,143 were girls. 5,516 students have passed out with flying colours. Out of them 2,502 were boys and 3,014 were girls. The pass percentage is 93.36 with an increase of about 0.26 percentages. Previous year one student, secured 100/100. Further 40 Students secured above 450 marks, 416 Students secured above 400 marks and 30 Schools secured 100% result.

Further, the Greater Chennai Corporation - Education Department runs an Industrial Training Institute in zone-9. It has got National Council of Vocational Training (NCVT) affiliation and runs various courses like computer operator and programming assistant, plumber, fitter, motor vehicle, mechanic, electrician, electrical and mechanical. After the completion of the course, the trainees are provided with job opportunities in various industries by the institute.

Special efforts are being taken to enable the students to actively participate in sports. In this

regard, "Annual Corporation Schools Sports Meet" is conducted in a professional manner and the students are encouraged to participate. Active training is imparted to students. Greater Chennai Corporation has bestowed National Level achievements and won prizes in Marathon competition conducted by Asian Games Federation of India and in Carrom Tournament conducted by All India Carom Federation. Under the state level Boxing competition conducted by the School Education Department, in the under 19 Girls category, two students have secured 1st place and in the under 17 Girls category, one student has secured 1st place. In Judo competition, under 14 Girls category, one student has secured 1st place, in Epee individual competition conducted, in the under 17 Girls category, one student has secured 1st place and in the under 14 Girls category, one student has secured 1st place and Sabre Team competition conducted, in the under 17 Girls category, one

student has secured 1st place. In the State Level Marathon race competition conducted, 8 students have participated and won prizes.

NCC activities are part of the school activities. One of our NCC student participated in the Republic Day cultural programme held in New Delhi on 26.01.2018 and got appreciation from our Hon'ble President and Hon'ble Prime Minister of India.

Chennai School students participated in the science competition under “Wings to Fly” programme and 8 Students were selected in the finals to fly to NASA as a part of science Educational Tour.

SNF @ School is a food safety and Nutritious food programme at schools, launched by the Food Safety and Standard Authority of India (FSSAI) and implemented by the State Food safety department. The SFC @ Schools

program has to be rolled out to all the 281 Chennai schools, with the support of those 50 master trainers.

Greater Chennai Corporation Education Department in collaboration with CMC, Vellore organized Students Counselor Master training. The training has been given to the Chennai School Teachers to fulfill the psychological needs of the students. The trained 300 teachers are called "Students counselor" of the school and necessary Handbook / Guide were distributed to them for further action.

3.9 Parks and Playfields

3.9.1 Parks

Greater Chennai Corporation maintains 569 parks, 123 center medians, 111 traffic island parks and 163 roadside parks for the benefit of the general public.

It was decided as a major policy decision, to earmark 70% of the total space of the park area for creation of green space and remaining 30% area for other essential components of the park. It is also decided to incorporate new technology like water sprinklers for watering the green space for effective and efficient maintenance of parks.

During the last three financial year 2015-16, 2016-17 and 2017-18, 20 parks have been created at an estimated cost of ₹ 18.77 crore. Further, 10 parks are in progress at an estimated cost of ₹ 18.22 crore and these would be completed very soon.

Sewage Treatment Plant (STP) has been installed in four parks in Chennai city on a pilot basis. The sewage water is tapped from the abutting main sewer line and treated using the STP and the treated water is then used for watering the green space in the parks. Thus,

these STPs help in overcoming the dependency on the ground water / water tanker lorries for watering plants.

In continuation, under Smart City Mission, it is proposed to retrofit 8 existing Parks in T.Nagar area at an estimated cost of ₹ 9.96 crore and these works are under progress. Out of which, Sewage treatment plants (STP) are proposed in 4 Parks and the works are under progress. These works will be completed by 30.06.2018.

3.9.2 Playfields

Greater Chennai Corporation, through its Stadium department is maintaining 212 playgrounds, 96 modern gyms, 1 indoor stadium, 3 swimming pools, 8 tennis courts and 11 skating floors which are located in various parts of Chennai city. More than 10,000 people

are getting benefited daily from the existing sports infrastructure at free of cost.

In this regard, local sports persons in various fields, especially in Football, Weightlifting, Bodybuilding, Volley Ball and Basket Ball have been groomed to National Standard / International Standard by utilizing the existing infrastructure facilities. For instance local Basket Ball players practicing at the Basket Ball Court at Venkat Narayana Road, T. Nagar, Division 136, zone-10 have represented the State Tamil Nadu Team at the National level, Indian team at the South East Asian Games and Asian Games and won Medals. Also, youth practicing weightlifting and bodybuilding at the corporation gyms has represented the Indian team at the international level and won medals.

During the last three financial year 2015-16, 2016-17 and 2017-18, 3 playground

works have been taken up at an estimated cost of ₹ 4.54 crore. These would be completed shortly.

3.10. Chennai Mega City Development Mission

With a vision of developing Chennai as a world class city, with infrastructure of international standards, the late Honourable 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 ₹ 1488 crore during 2011-2016 to the Greater Chennai Corporation.

In this mission, the roads to a length of 1,146.67 km, storm water drain network to a length of 170.69 km, footpaths to a length of 238.83 km and installation of 12,952 LED street lights have been completed at the cost of ₹ 1,451.74 crore and have been put into use. 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 on par with the core city areas has been fulfilled to a great extent.

Road works taken up under "CHENNAI MEGA CITY DEVELOPMENT MISSION" are as follows:-

Year	No. of Roads laid	Length (in km)	Expenditure (₹ in crore)
2011-12	1,367	344.53	331.06
2012-13	1,932	353.67	404.74
2013-14	1,215	254.80	388.05
2015-16	446	193.67	327.89
Total	4,960	1,146.67	1451.74

3.11 Road Maintenance Programmes

3.11.1 Bus Route Roads

The Greater Chennai Corporation maintains 471 bus route roads, to a length of 387 km. The up-keeping of bus route roads is taken up with the grants provided under Tamil Nadu Urban Road Infrastructure Project (TURIP) and CMCDM scheme.

To monitor, execute, and to assure quality and to certify for the payments of all the bus route road works, reputed project management consultants are engaged.

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 (CAMBER), strengthening layer (Dense

Bituminous Macadam) and wearing layers (Bituminous Concrete).

All the Bus Route Roads are paved with 9 meters (30 Feet) electronic sensor road laying paving machines to give the best finish and riding quality. The quality of all roads has been checked in 5 different levels.

The finished roads are painted with thermoplastic reflective lane marking and studs for the safety of the road users and for lane discipline. All other road improvements namely, providing tree gratings, water table, silt catch pits, speed breakers and signage boards are taken up to give an enhanced riding safety and comfort on par with the best roads laid anywhere.

By using this type of specialized modern techniques almost all the Bus Route Roads and

18 small Bus Route Roads have been laid under various schemes as listed below.

Scheme	Year	No. of Roads	Length in km	Expenditure (₹ in crore)
TURIP	2013-14	42	29.35	43.78
TURIP	2014-15	54	46.56	88.07
CMCDM	2015-16	198	152.56	285.19
TURIP	2015-16	92	76.61	117.36
SDRF	2015-16	103	40.83	55.7
TURIP	2016-17	40	24.17	18.30
TURIP	2016-17 Savings	8	4.43	4.31
TURIP	2017-18	7	5.68	9.70
Total		544	380.19	622.41

The roads, thus laid were not damaged even during the unprecedented heavy rainfall and flood the Chennai city has experienced in the year 2015. Also, no damage occurred during monsoon in 2016 and 2017. This is the evidence

that roads laid were of good quality and standard.

3.11.2 Interior Roads

The Greater Chennai Corporation maintains 33,374 interior roads to a length of 5,525 km. All the works related Interior Roads being done using a capital fund of the Greater Chennai Corporation and the grants of Government of Tamil Nadu under Tamil Nadu Road Infrastructure Project, TUFIDCO and CMCDM.

The Roads taken up under various schemes are tabulated below:

Maintenance of INTERIOR ROADS				
Scheme	Year	No.of Roads	Length	Expenditure
			(in km)	(₹ in crore)
CMCDM	2011-12	1,367	344.53	331.06
	2012-13	1,932	353.67	404.74
	2013-14	1,215	254.80	388.05
	2015-16	248	41.00	42.70
MIDF Phase I	2015-16	3,807	624.98	373.53

MIDF Phase II	2015-16	1,615	257.44	168.68
TURIP	2016-17	1,643	294.94	157.21
	2017-18	2902	222	202.47
Total		14,729	2,171.36	1,865.97
GCC Capital Fund	2011-12	896	176.23	39.40
	2012-13	1,174	240.40	81.37
	2013-14	2,224	295.09	166.34
	2014-15	7,510	1,180.41	923.94
	2015-16	1,010	267.87	228.94
Total		12,814	2,160.00	1,439.99
Grand Total		27,543	4,331.36	3,305.96

3.12 Promotion of Non Motorised Transport

Greater Chennai Corporation is the first municipal corporation in India to adopt and implement Non-Motorised Transport (NMT) Policy. In order to promote Non-Motorised Transport (NMT) to reduce pedestrian-vehicle conflict, pollution and traffic congestion, Greater Chennai Corporation have 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 56 Bus Route Roads at the cost of ₹ 49.30 crore in TURIP 2012-13, which is well appreciated.

For the first time, 56 footpaths for the benefit of pedestrians and differently-abled people on wheel chairs were constructed. All the road junctions are connected with table top crossings which also act as speed brakers. Greater Chennai Corporation is providing ramps to all the building entrances, 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 accolades from all the quarters. These footpaths were verified by the Disability Rights Alliance

(DRA) Group and they complimented and welcomed this initiative of GCC.

Greater Chennai Corporation has received 5 national level awards and one international award for this project.

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

3.13. Marina Beautification Project

As part of the 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 replaced by the new pillars so that it gives a timeless elegance. Ornamental non-corrosive cast iron grill work in between the pillars is also done. The existing footpath abutting the compound wall was re-laid. The total cost of the project is ₹ 33.10 crore and all the works have been completed.

3.14 Special Projects

3.14.1. Smart City

Chennai Smart City project is being carried out with the contribution of ₹ 500 crore of State Government & Central Government each. The stages of Smart city projects are as follows:

- 3 works were completed at an estimated cost of ₹ 5.29 crore.

- 15 works are in progress at an estimated cost of ₹ 143.34 crore.
- Tenders were called for 6 works at an estimated cost of ₹ 216.23 crore.
- Preparation of DPR is under progress for 7 works at a tentative estimated cost of ₹ 293.26 crore.
- DPR to be prepared for 5 works at a tentative estimated cost of ₹ 369.92 crore.

3.14.2 Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

One of the main aims of Atal Mission for Rejuvenation and Urban Transformation (AMRUT) scheme is to increase the amenity value of cities by developing green spaces and well maintained open spaces (eg.parks) with special provision for child - friendly components. The funding pattern of this scheme involves 50% of Government of India,

20% of Government of Tamil Nadu and remaining 30% are Urban Local Body.

51 Parks have been taken up at a cost of ₹ 34.74 crore to create more green spaces for the benefit of people.

3.15 Bridges

In order to ensure hassle free movement of traffic, the Greater Chennai Corporation maintains bridges, culverts, foot bridges and causeways across major rivers and canals, rail over bridges across railway crossings and flyovers across road intersections in 278 locations. In addition, Greater Chennai Corporation also maintains 16 subways at railway crossings and 6 pedestrian subways at important bus route roads.

During the current year 2017-18, 8 works at an estimated cost of ₹ 3.10 crore were taken up. Out of these, one maintenance work

for bridges / subways / culverts / foot bridge in north region (Zone 1-5) has been completed. Five works, i.e., construction of 2 box culverts, maintenance work for bridges/subways/culverts/foot bridge in the center and south region (zone 6-15), and one improvement to the existing Kakkan Bridge across Velachery Eri are in progress. Construction of one box culvert work and one improvement work to existing Bridge across Otteri Nullah connecting Strahans Road, Brick kiln road, Konnur high road and Cooks road are also proposed.

3.16 Street Lights

The Greater Chennai Corporation is maintaining 2,77,662 street lights. Out of these, 1,82,775 are energy saving LED street lights, 71,005 are sodium vapour lamps and others are 23,882 (CFL, Metal Halide lamps, Induction lamps). The sodium vapour lamps will be

replaced with energy saving LED fittings in a phased manner.

In order to ensure safety of women, elderly persons and other road users, uniform street lighting is being provided in all interior roads and bus route roads of Greater Chennai Corporation. With the objective of providing uniform street lighting with the fittings that save energy, LED street light fittings are being provided throughout the city. LED street light fittings consume 45% lesser power than Sodium vapour lamps and Metal halide street light fittings. The project of providing 1,10,000 energy saving LED street light fittings at a total cost of ₹ 322.00 crore for the newly added areas is completed. Further, 17,301 new street lamp post with energy saving LED lights in the left over areas of added area of Greater Chennai Corporation has been taken up at an estimated cost of ₹ 80.14 crore. Greater Chennai

Corporation is one of the few corporations that have provided energy saving LED street light fittings in large numbers.

Greater Chennai Corporation was paying nearly ₹ 6 crore to TANGEDCO every month as electricity consumption charges for street lights. After conversion to LED street lights, the monthly electricity consumption charges have reduced to ₹ 4.50 crore. Hence, ₹ 1.50 crore is saved per month and this resulted in a total savings of ₹ 18.00 crore per year towards the electricity consumption charges for street lights.

3.17 Storm Water Drains

In order to prevent flooding in the city, Greater Chennai Corporation maintains the Storm water drain network to a total length of 1,894 km comprising of 7,351 Storm Water Drain Structures. Besides this, the Greater Chennai Corporation also maintains 30 canals for

a total length of 48.80 km, which include Kodungaiyur Canal, Captain Cotton Canal, Padikuppam Canal.

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

In the first phase, in Adyar and Coovum basins, work has been taken up under World Bank fund, under Tamil Nadu Sustainable Urban

Development Project (TNSUDP) at a project cost of ₹ 1,261.50 crore to mitigate flood problems in Ambattur, Alandur and Valasaravakkam. Works in Adyar and Coovum basins are divided into 39 packages. Works in 35 packages are in progress with a physical progress of 378 km. All works will be completed before the end of September 2018. For the 4 canal packages Viz., Ambattur Sidco canal, Nolumbur canal, Padikuppam canal and Nandambakkam canal, a work order is issued and work under progress.

As far as the Kovalam basin is concerned, the German Development Bank (KfW) has been identified as the funding agency for implementation of the project at a cost of ₹ 1,243.15 crore to a length of 326 km. The entire basin is sub-divided into three sub-basins and marked as M1, M2 and M3. KfW has appointed Consultant for revising the DPR for the M3 component of Kovalam basin and is in

the process of finalization of revised DPR. Preparation of revised DPR for M1 and M2 component of Kovalam basin will be finalized by June 2019 by KfW appointed consultant.

As far as an integrated storm water drain (ISWD) network for Kosasthalayar basin is concerned, DPR is prepared to implement the project to a length of 765 km at a cost of ₹ 1,784.54 crore. A proposal was sent to the Government of India and funds were sought from NITI Aayog. However Ministry of Housing and Urban Affairs has informed that they are not in a position to provide any funds. Hence this matter is being continuously perused and efforts are now being made to seek assistance from World bank.

3.18 Solid Waste Management

Solid waste management is one of the prime civic responsibilities of the Greater

Chennai Corporation, which handles daily waste of around 5400 MT/day.

Out of 15 zones of Greater Chennai Corporation, collection and transportation of 12 zones are carried out by Greater Chennai Corporation and in remaining 3 zones, it is privatized.

Municipal Solid Waste is managed in the following ways by Greater Chennai Corporation:

3.18.1 Primary Collection

At present, the primary collection consisting of door to door collection, which is being carried out by using 5678 tricycles of Greater Chennai Corporation.

The Corporation deploys approximately 19,343 conservancy workers, including the workers of privatized zones. The attendance of

conservancy workers is monitored through Biometric system in all 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 aprons and also welfare items.

3.18.2 Source Segregation:

On the occasion of World environment day 5th June, 2017 Greater Chennai Corporation initiated awareness and motivated general public to segregate at source by depositing wet waste in the green colored bin and dry waste in blue colored bin.

To minimize the waste with a principle of Reduce, Reuse and Recycle and to comply with SWM Rules 2016 that every waste generators

shall segregate and store the waste in separate streams, Greater Chennai Corporation started collecting dry waste only on every Wednesday on the occasion of birth anniversary of Mahatma Gandhi on 2nd October, 2017.

3.18.3 Secondary Collection and Transportation

The secondary collection of solid waste is carried out by deploying 140 HMV compactors, 169 LMV compactors, 22 Haulage Tipper Trucks, 114 HMV Tippers and 36 LMV Tippers. Further, 12 mechanical sweepers are used for sweeping bus route roads and other main roads. 57 skid steer loaders and 23 front end Loaders are used for removal of solid waste and also Construction & Demolition waste. The solid waste will be transported to transfer station / landfill by these vehicles as per transportation plan.

During the financial year from 2011-12 to 2015-16, 295 different vehicles like HMV/LMV

compactors, tippers, mechanical sweepers, skid steer loaders, front end loaders, hydraulic excavators and bulldozers have been procured for an amount of ₹ 62.25 crore under Chennai Mega City Development Fund and Capital fund of Greater Chennai Corporation. In the year 2017-18, 8253 compactor bins at a total amount ₹ 14.56 crore under Swachh Bharath Mission Fund.

In addition to the existing 9 Lorry operating depots of Greater Chennai Corporation, two lorry operation depots at Manali and Sholiganallur have been constructed at a cost of ₹ 7.59 crore and put in operation in the financial year 2017-18. Further, construction of three Lorry operation depots at an estimated cost of ₹ 15.89 crore for the use of zone-1, 3 and 7 is under progress and will be completed by August 2018.

3.18.4 De-Centralized processing units

In order to reduce the burden on the landfill, Greater Chennai Corporation has established de-centralised processing units like composting and bio-methanization plant

- Composting plants – 136 (Ordinary) and 3 (Vermi) with feeding capacity of 69.42 MT/day
- Bio-methanisation plants – 30 (Thermal)– with feeding capacity of 9.79 MT/day
- Five Waste to Energy plants using BARC technology are being operated with the total feeding capacity of 7.97 MT of bio-degradable waste. 24.6 kwh per day of electrical energy is generated and used for street lights and high mast lights. Further construction of two waste to Energy plant at Perambur slaughter house is under progress with an estimated cost of

₹ 1.80 crore. This work will be completed by August 2018.

With the above processing units, Greater Chennai Corporation produces manure of 25 MT /day, which is used for the parks of Greater Chennai Corporation and the rest is sold to the public. The bio-gas produced is used in the Amma Unavagam for cooking, thereby reducing the fuel procurement from the market.

3.18.5 Disposal

Greater Chennai Corporation has got 8 transfer stations and 2 dumping yards, namely Kodungaiyur of 269 acres and Perungudi wherein dumping is restricted to 200 acres.

3.18.6 Progress of Solid Waste Management projects

Collection and transportation of solid waste in zones 1, 2, 3 and 7 (Package-1) and zones 11, 12, 14 and 15 (Package II) has been

proposed for privatization for which Final Detailed Feasibility Report is prepared and approved by TNIDB. Further Administrative sanction has been obtained from Government vide G.O.(Ms). No. 33 & 34 MAWS (MC1) dept, dated:02.04.2018

Integrated MSW processing facility with waste to energy plant, sanitary landfill and reclamation of existing dumping site at Kodungaiyur (zones 1 to 8 - package -3) and at Perungudi (zones 9 to 15 package - 4) has been proposed in which Final detailed feasibility Report is prepared and it is also approved by the expert committee. In this connection, each packages are divided into package 3(a), 3(b) for Kodungaiyur and 4(a), 4(b) to Perungudi for reclamation work and waste to energy respectively. Matter is pursued vigorously.

3.19 SWACHH BHARATH MISSION

Greater Chennai Corporation has been declared as Open Defecation Free. The corporation has constructed 1003 community toilet seats with an expenditure of ₹ 14.86 crores and 6424 Individual Household Toilets (IHHL) with an expenditure of ₹ 4.21 crores.

To improve the Solid Waste Management, 2,060 Tricycle, 29,406 Tricycle bins, 12,283 Compactor bins, 2,765 Rotomac bins were procured by Greater Chennai Corporation under the Swachh Bharat Mission Fund with an expenditure of ₹ 27.93 crores. Further Greater Chennai Corporation has proposed to procure 50 Tricycles, 2,000 tricycle bins under the Swachh Bharat Mission scheme for an estimate of ₹ 0.30 crores.

4 Mechanical Sweepers have been purchased with 7 years Operation & Maintenance

at a total cost of ₹ 5.60 crores under Swachh Bharat Mission fund.

Greater Chennai Corporation has constructed decentralized Waste Treatment plants such as 3 numbers of Vermi Compost, 39 numbers of Ordinary Compost Yard, 6 numbers Resource Centre, 8 numbers of bio gas plant and 3 numbers of Bio shredding Machine with an expenditure of ₹ 5.35 crore under the Swachh Bharat Mission. In addition, Greater Chennai Corporation has proposed to construct 47 Resource Recovery Centers, 34 Compost yards, 11 Bio gas plants at an estimate cost of ₹ 8.26 crores under the Swachh Bharat Mission.

The Swachata app created under SBM by Government of India is being effectively used in Greater Chennai Corporation to redress sanitation related grievances. So far, 10,645 public grievances have been resolved within stipulated time of 12 hours and it is being monitored effectively by Greater Chennai Corporation.

4. Directorate of Town Panchayats

Town Panchayats is the third tier of urban administration with a mixed character of village and town. In view of increasing population, Town Panchayats are gearing up to provide better civic amenities, development of infrastructure facilities and to upgrade the quality of livelihood of the public.

4.1 Administrative Setup

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

Grade	Annual Income	No. of Town Panchayats
Special Grade	Exceeding ₹ 200 lakh	64
Selection Grade	Exceeding ₹ 100 lakh but not exceeding ₹200.00 lakh	202

Grade- I	Exceeding ₹50 lakh but not exceeding ₹100 lakh	200
Grade-II	Not exceeding ₹50 lakh	62
	Total	528

The Director of Town Panchayats is the head of the department. There are 17 zones and each zone is headed by an Assistant director. The collectors of the respective district are entrusted with the task of supervising the affairs of the Town Panchayats.

4.2 Functions and Core Services

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

and collect taxes such as, property tax, professional tax and issue of approval of building plans etc.

4.3 Infrastructure Development

The mobility of villagers from the rural areas results in the growth of urban population. It necessitates for the provision of better basic amenities and infrastructure facilities to cater to the needs of Town Panchayats. Apart from encouraging the urban local bodies to improve their existing own resource base, the State Government, in addition, is transferring SFC devolution and supporting creation of urban infrastructure projects through its flagship mission mode programmes viz Integrated Urban Development Mission (IUDM) and NABARD Loan assistance.

4.4 Integrated Urban Development Mission (IUDM)

The late Hon'ble Chief Minister of Tamil Nadu had inaugurated the Flagship Scheme of Integrated Urban Development Mission during the year 2011 to cater to the infrastructure needs of the Urban Local Bodies.

Various types of works required to improve the infrastructure of the Town Panchayats are taken up through Integrated Urban Development Mission. A sum of ₹ 1309.88 crore was provided to the Town Panchayats for taking up 7174 necessary various infrastructure works like UGSS, water supply and storm water drain works during the years 2011-2012 to 2016-2017. Out of which 6952 works were completed and remaining 222 works are under progress.

4.5 Water Supply

The Government is firmly committed to provide a minimum of 70 LPCD of protected drinking water supply to the people in all the Town Panchayats. There are 48 stand alone water supply schemes maintained by Town Panchayats. The TWAD Board maintains 323 combined water supply schemes in town panchayats. All the 528 Town Panchayats are supplying drinking water at the rate of 70 LPCD. The details of water supply levels in the Town Panchayats inclusive of the year wise additional capacity provided to tide over the situations is given below.

Sl.No	Year	No of Town Panchayats	Water Demand (in MLD)	Water Supply (in MLD)	Additional water supply capacity (in MLD)
(1)	(2)	(3)	(4)	(5)	(6)
1	2016-17	528	602	686.00	84.00
2	2017-18	528	611	728.00	117.00

From the year 2011-12 to 2017-18 under various water supply schemes 9012 works were taken up in Town Panchayats and 8977 works have been completed. The remaining 35 works are under progress in various stages and are being executed by the Town Panchayats / TWAD board.

During the year 2017, 1515 water supply improvement works at an estimated cost of ₹ 16.38 crore have been taken up under State Disaster Relief Fund and 1951 works at an estimated cost of ₹ 26.44 crore have been taken up under Town Panchayat General funds. In total, 3466 works at an estimated cost of ₹ 42.82 crore were taken up and completed.

4.6 Sanitation

4.6.1 Under Ground Sewerage System (UGSS)

UGSS were taken up in 9 Town Panchayats at an outlay of ₹ 322.76 crore. Out of these, works in 3 Town Panchayats have been completed at an estimated cost of ₹ 41.45 crore and put into use. Works are under progress in Thirumazhisai, Sriperumbudur, Ulundurpettai, Perundurai, Palanichettipatti and Velankanni Town Panchayats at an estimated cost of ₹ 281.31 crore.

Work orders were issued for Ponneri and Thiruporur Town Panchayat on 9.4.2018 and tender evaluation is in progress for Vallam Town Panchayat at an estimated cost of ₹ 131.29 crore by TWAD Board. In respect of Manachanallur and S. Kannanur Town Panchayats revised administrative have been accorded at an estimate cost of ₹ 49.56 crore is in progress by

TWAD Board. Identification of land for establishing a sewerage pumping station is under progress in Ayakudi and Kaniyakumari Town Panchayats.

4.6.2 Septage Management

Septage means partially treated sewage that is stored in the septic tank. 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 programme that regulates periodic septic tank cleaning, as well as septage transport, treatment, re-use and scientific disposal is indispensable for septage management.

As a pilot scheme, the septage management is implemented with new technology at cost of ₹ 5.18 crore at Karunkuzhi Town Panchayat in Kancheepuram district and is running successfully.

It has been decided to extend the above scheme to 17 Town Panchayats and preparation of DPR is in progress by TWAD Board.

In Periyanaickenpalayam Town Panchayat, Fecal Sludge Treatment Plant (FSTP) is taken up at an estimated cost of ₹ 2.02 crore with the aid of Bill and Melinda Gates Foundation (BMGF) and work is in progress.

4.6.3 Eradication of Open Defecation

The Government is determined to make Tamil Nadu an Open Defecation Free State. Under Swachh Bharat Mission, the works such as Construction of 2,16,523 individual household latrines, conversion of 7,794 numbers of insanitary latrines into sanitary latrines and construction of community toilet with 10,604 seats were taken up along with the grant from Government of Tamil Nadu and 100% work were completed.

Sl. No.	Scheme	Target	Completed
1	Individual House Hold Latrines	2,16,523	2,16,523
2	Conversion of Insanitary Latrines to sanitary Latrines	7,794	7,794
3	Community Toilet	10,604	10,604

155 Town Panchayats have been declared as ODF Towns. Proposals have been sent to the Government of India, Ministry of Housing and Urban Affairs for all other Town Panchayats for declaration of Open Defection Free Status. These 363 Town Panchayats are being inspected by the Quality Control Officers of Government of India.

4.6.3.1 Animators

To create awareness among the public so as to make the Town Panchayats garbage free and open defecation free, 1382 Animators have been engaged in Town Panchayats. In order to improve the capacity of all animators, skill

development trainings have also been provided by the Directorate of Town Panchayats.

4.7 Roads

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

Sl. No.	Type	Length (Km)
1	BT Roads	11,861
2	CC roads	5,413
3	Paver Block	1,269
4	WBM Roads	941
5	Gravel Roads	368
6	Earthen roads	4,891
Total		24,743

During the years 2011-2012 to 2017-18, improvements of roads are taken up under various schemes with the fund of ₹ 2,022.79 crore. Out of 5915 road works covering 6,296 kms, 5,527 works covering 5,652 kms have been completed and put into use. Remaining 388 works are under progress in various stages.

4.7.1 National Bank for Agriculture and Rural Development (NABARD) - Rural Infrastructure Development Fund (RIDF)

During the years 2011-2012 to 2017-18, 2626 works at an estimated cost of ₹ 891.51 crore were taken up and 2491 works have been completed and remaining 135 works are under progress.

SI No	Year	No. of works	Amount (₹ crore)	Remarks
1	2011-12 to 2016-17	2459	761.51	All Works are Completed
2	2017-18	167	130.00	Work order issued for 167 works, 32 works completed Balance 135 works are in progress at various stages.
Total		2626	891.51	

4.7.2 Tamil Nadu Urban Road Infrastructure Project (TURIP)

Tamil Nadu Urban Roads Infrastructure project is being implemented since 2011-12 with a view to upgrade the urban roads to international standards with storm water drains and pavement facilities. From 2011-2012 to 2017-18, ₹ 469.16 crore has been allocated for execution of 1771 road works to a total length of 1718 kms, out of which 1627 works to length of 1527 kms have been completed and remaining 144 works are in progress at various stages.

Sl No	Year	No. of works	Amount (₹ crore)	Length (in km)
1	2011-12 to 16-17	1562	391.91	1438.86
2	2017-18	209	77.25	279.54
Total		1771	469.16	1718.40

4.8 Solid Waste Management

It is estimated that every person generates 250 to 300 gm waste per day. 2100 MT garbage

is generated per day in all 528 Town Panchayats of which the organic waste constitutes 966 MT, inorganic waste 747 MT and the remaining 387 MT as silt waste.

6686 Town Panchayat workers and around 10,759 Self Help Group members are involved in street sweeping and for collection and segregation of solid waste effective implementation of the solid waste management in the Town Panchayats.

4.8.1 Bio / Vermi Composting

At present, every day 107.26 MT of bio-compost is produced in 501 Town Panchayats. At an average ₹ 39.42 lakh is earned by the Town Panchayats every month by sale of bio-compost. Vermi composting is also done successfully in 188 Town Panchayats. Every day 16.21 MT of vermi compost is produced. A sum of ₹ 10.29 lakh is earned by Town Panchayats every month by the sale of

vermi compost. At present 1314 MT bio-compost is in stock in the Town Panchayats.

4.8.2 Integrated Solid Waste Management Scheme

From the year 2013-14 to 2017-18, under the Integrated solid waste management schemes, door to door collection, transportation, segregation, composting at resource recovery parks and information education and communication activities have been taken up in the Town Panchayats. The status of the scheme is tabulated below:

Sl. No	Year	No. of Town Panchayats	Project Cost (in crore)	No. of works taken
1	2013-14	77	48.57	794
2	2014-15	214	54.57	1058
3	2015-16	104	53.75	530
4	2017-18	249	52.20	774
	Total		209.09	3156

4.8.3 Bio Methanation

Under Swachh Bharat Mission, construction of bio methanation plants were taken up and completed in 5 Town Panchayats at a total estimated cost of ₹ 1.00 crore (₹ 20.00 lakh each) for conversion of food waste and vegetable waste into bio gas. In addition, small bio methanation plants were installed in 11 Town Panchayats and put into use.

4.9 Infrastructure Gap Filling Fund/Capital Grant Fund

In order to bridge the gap in providing infrastructure facilities in Town Panchayats, financial allocation has been made under this Fund.

Under Infrastructure Gap Filling Fund, during the years 2011-12 to 2016-17, 805 works such as construction of office building, water supply works, solid waste management, storm

water drain, slaughter house, crematorium, community hall and markets, improvement of bus stands and improvement of burial grounds and payment of ULB contributions to the water supply / UGS scheme etc. have been taken up at a cost of ₹ 327.30 crore. 794 works have been completed. Remaining 11 works are under progress.

During the year 2017-18, under Capital Grant Fund 79 works are taken up at an estimated cost of ₹ 176.67 crore and works are in progress in various stages.

S.No	Year	No. of works	Estimate cost (₹ crore)
1	2011-12 to 2016-17	805	327.30
2	2017-18	79	176.67
	Total	884	503.97

4.10. Operation and Maintenance Gap Filling Fund

Financial allocation is made from the State Devolution Grant to bridge the gap in providing operation and maintenance of infrastructure facilities in the Town Panchayats.

From the year 2011-12 to 2017-18, under this scheme 694 works were taken up for a sum of ₹ 184.63 crore. Out of which 603 works have been completed and remaining 91 works are in progress.

S.No	Year	No. of works	Estimate cost (₹ crore)
1	2011-12 to 2015-16	603	125.74
2	2017-18	91	58.89
	Total	694	184.63

4.11 14th Central Finance Commission Grant

The 14th Finance Commission grant is allotted annually by the Government of India to the Town Panchayats for the period from 2015-16 to 2019-20. The allotment has been

provided by way of two components, (viz) Basic grant and Performance grant. During the year 2015-16, a sum of ₹ 229.11 crore was released in two installments under the Basic grant. Similarly for the year 2016-17, under basic grant a sum of ₹ 317.25 crore was released in two installments and a sum of ₹ 93.63 crore was released under Performance Grant. Similarly for the year 2017-18, a sum of ₹ 391.82 crore was allotted and a sum of ₹ 183.27 crore was released as 1st installment under basic grant and a sum of ₹ 113.267 crore was allotted under Performance Grant. The above grant was utilized towards payment of contribution to Water supply projects and UGSS, payment of E.B. Charges, payment of water charges, solid waste management, laying of road and footpath and park improvements.

4.12 Rain Water Harvesting

Rain water harvesting scheme which was launched in 2001, has made an impressive

impact in ground water recharging. As per the amendments made in Section 215 (a) of the Tami Nadu District Municipalities Act, 1920 and Building Rules 1973, it is mandatory to provide RWH structures in all the new buildings. Various measures have been taken up for rejuvenation of RWH structures created already in both the public and private buildings, besides creating new ones. Information, education and awareness activities will be continued in the Town Panchayats to sensitize all the stakeholders to sustain the momentum.

The following rain water harvesting structures is provided as mentioned below.

Sl. No	Type of Buildings	No. of Buildings	No. of Buildings having RWH Structures
1.	Government Buildings	24,226	23,926
2.	Residential Buildings	24,47,555	23,81,066
3.	Commercial Buildings	1,54,800	1,53,221
4.	Industrial Buildings	11,932	11,932
Total		26,38,513	25,70,145

Out of 1,916 water bodies in the Town Panchayats, so far 1,215 water bodies have been restored under various schemes.

4.13 Satellite Town

The objectives of the scheme is to reduce pressure on million plus urban agglomerations by developing infrastructure facilities in the Satellite Towns and to sustain them by implementing reforms such as an energy audit, water audit, the 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 this scheme in Sriperumpudur Town Panchayat, water supply, UGSS, solid waste management works has been taken up at an estimated cost of ₹ 123.75 crore.

Sl. No.	Name of the work	Project Cost (₹ in crore)	Stage of Progress
1	Solid Waste Management infrastructure	4.44	completed
2	Comprehensive Water Supply Scheme	42.20	Works will be completed by September 2018
3	Comprehensive Sewerage Scheme	77.11	Works will be completed by September 2018
Total		123.75	

4.14 Housing for All (Urban) Mission

The late Hon`ble Chief Minister has announced an ambitious goal of Slum free cities under VISION- 2023. In continuation, 'Green Houses' scheme has been launched in Town Panchayats, to convert Huts / Mud houses into Green Houses for the Economically Weaker Section families living in Town Panchayats. In the meantime, this Green house scheme is merged with Central Government Housing for All

(Urban) Mission scheme in Town Panchyats and so for a total of 1,34,283 beneficiaries were selected under this scheme for construction of houses with a financial assistance of ₹ 2.10 Lakh per beneficiary (Government of India Grant ₹ 1.50 Lakh and Government of Tamilnadu Grant ₹ 0.60 lakh) and in total an amount of ₹ 2819.94 crore has been allotted and approved by the Central Sanctioning and Monitoring Committee.

The Tamil Nadu Slum Clearance Board is the state level nodal agency. So far, 16,882 units are completed and remaining 1,17,401 units are in progress in various stages.

4.15 National Urban Livelihood Mission (NULM)

To implement the 'Deendayal Antyodaya Yojana-National Urban Livelihood Mission (DAY-NULM) in Town Panchayats, in the year 2017-18 one normal shelters for urban homeless at Veeravanallur and construction of seven

special shelters at Chitlapakkam, Ponneri, Natrampalli, Polur, Bargur, Denkanikottai and Uthangarai for staying the attenders of inpatients in Government hospitals in Town Panchayats at a total estimate cost of ₹ 5.31 crore have been approved and works are in progress.

4.16 Street Lights

There are 4,39,343 street lights including 1357 high mast lights, 3093 mercury lights, 34,540 sodium lights, 2,54,249 tube lights, 1,00,263 CFL, 3183 Solar lights and 42,658 LED lights are being maintained by the Town panchayats. All the street lights will be replaced by energy efficient LED lights in a phased manner.

4.17 Tourism Development Scheme (Swadesh Darshan)

The Government of TamilNadu have sanctioned with the financial assistance of Government of India ₹ 11.21 crore under

“Swadesh Darshan” scheme. Accordingly 9 works have been taken up in Kanyakumari Town Panchayat and 4 works in Ganapathipuram Town panchayat.

4.18 Chennai Rivers Restoration Trust (CRRT)

The Government of Tamil Nadu has accorded Administrative Sanction vide G.O. (Ms) No.72, Municipal Administration and Water Supply (MC-1) Department, Dated:12.07.2017 for restoration of the Adyar river in the Town Panchayats of Chennai Metropolitan Development area limit, namely Kundrathur, Perungalathur and Thiruneermalai Town Panchayats at a project cost of ₹ 41.73 crore and further follow up action is in progress.

4.19 Heritage City Development and Augmentation Yojana (HRIDAY)

In Velankanni Town Panchayat of Nagapattinam district, sanction has been

accorded for execution of developmental works for ₹ 20.00 crore with the financial assistance of Government of India under HRIDAY Scheme. In phase I, 3 works were taken up and completed at an estimated cost of ₹ 97.00 lakh and in the 2nd phase, 12 works at the estimate cost of ₹ 10.37 crore was approved. In the 2nd phase work order has been issued for 8 works at an estimate cost of ₹ 8.66 crore and works are under progress.

4.20 Award

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

In the year 2016-17 the first 3 prizes were awarded to Town Panchayats namely, Ponnampatti of Tiruchirapalli district, Irugur of Coimbatore district and Nambiyur of Erode district respectively.

5. Chennai Metropolitan Water Supply And Sewerage Board

The Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) was established in 1978. As per CMWSS Act, CMWSSB is to provide safe and sufficient supply of drinking water for consumption by the inhabitants and safe disposal of sewage in the Chennai Metropolitan area. These activities are being implemented through planned development of water supply with the existing sources as well as augmentation of new sources along with the necessary sewage disposal facilities including due treatment and operation and maintenance of the said facilities.

CMWSSB is carrying out the services of providing safe drinking water and safe disposal of sewage generated within the Greater Chennai Corporation limit of 426 sq.km covering the current population of 74.38 lakh through its

200 depots. It also supplies water to some of the adjacent local bodies and bulk industrial consumers.

5.1 Sources of Drinking Water for Chennai City

The Chennai city's water requirement is met out by drawing water from surface sources, desalination plants and ground water sources.

5.1.1 Surface Water Sources

The surface water is drawn from the reservoirs located at Poondi, Cholavaram, Redhills (Puzhal) and Chembarambakkam near Chennai city, Veeranam lake in Cuddalore district from where 180 MLD of water is treated and drawn since 2004 and from Telugu Ganga Project.

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 drawn from the Krishna river through the Kandaleru reservoir to Chennai for its drinking water requirements. The maximum receipt of water in one year (2011-12) so far has been only 8.2 TMC. In the year 2017-18, the receipt of water was 2.22 TMC only.

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
4	Cholavaram	1081*
5	Veeranam	1,465
	Total	12,722

*The storage capacity has been increased by 200 Mcft compared to previous year by raising the bund by 1 feet.

Rainfall in the catchment areas of the city reservoirs

Year	Rainfall in mm		Difference in %
	Normal (30 years average)	Actual	
2012	1293.42	981.80	-24.09
2013	1297.50	1064.87	-17.93
2014	1286.21	1025.80	-20.25
2015	1273.17	2155.23	+69.28
2016	1308.05	837.00	-36.03
2017	1305.82	1388.00	+6.30

5.1.2 Desalination Plants

Chennai city is mainly depends on the rainfall during monsoon for the water storage. Whenever monsoon fails, it leads to acute shortage in the reservoir level and thereby affects water supply to the residents of Chennai. Considering the above facts, in 2003-04, the late Hon'ble Chief Minister in a far sighted move, announced the setting up of desalination plants

on Design, Build, Own, Operate and Transfer Basis (DBOOT) to meet out the growing water demand. Accordingly, the Government had established first desalination plant with a capacity of 100 MLD at Minjur and subsequently another plant of 100 MLD capacity at Nemmeli which are currently operational and plays a major role in water supply requirements of Chennai city.

5.1.2.1 Desalination plant at Minjur

A 100 MLD (Million litres per day) desalination plant in Minjur, built on Design, Build, Own, Operate and Transfer (DBOOT) basis, is under operation since July 2010 and supplies water to the northern parts of Chennai city viz., Manali, Madhavaram, Ennore, Kathivakkam, Thiruvottiyur, Tondiarpet and Vyasarpadi benefiting a population of about 12 lakh.

5.1.2.2 Desalination plant at Nemmeli

At Nemmeli another 100 MLD desalination plant was constructed at a cost of ₹ 805.08 crore with full financial assistance from Government of India which was inaugurated on 22.02.2013 by the late Hon'ble Chief Minister and is under operation. Subsequently, during the year 2017-18 the capacity of the plant has been enhanced to 110 MLD. Water from this plant is being supplied to the southern parts of Chennai viz., Sholinganallur, Neelangarai, Injambakkam, Karapakkam, Semmancherry, Thoraipakkam, Perungudi, Kottivakkam, Palavakkam, Thiruvanmiyur, Velachery, Taramani, Pallipattu, Adyar, Besant Nagar, Nandanam, MRC Nagar, Raja Annamalaipuram and Mylapore is benefiting a population of about 7 lakhs.

During 2012-14 and 2016-17, the deficit monsoons in the catchment areas have increased reliance on desalination plants and

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

5.1.3 Ground water

About 65 MLD of ground water is also drawn from the aquifers at Tamaraipakkam, Poondi and Neyveli to the tune of about 65 MLD.

5.1.4 Operations and Maintenance of water supply

CMWSSB is supplying potable water to the city through its water treatment plants having a total capacity of 1504 MLD which are located at Kilpauk, Redhills, Chembarambakkam, Surapattu and Vadakuthu and the Desalination Plants at Minjur and Nemmeli.

Operations of the Board's water supply system have increased manifold since its inception in 1978 as it can be seen from the growth in providing services to 7,05,091 consumers now as against 1,16,000 consumers

in the year 1978. During 2017-2018, 11,057 new house service connections have been effected in Chennai city.

5.2 Water supply – New Schemes

After inclusion of 42 newly added areas of Greater Chennai Corporation for augmenting water supply, CMWSSB has taken up various schemes.

Accordingly, water supply schemes have been completed in 12 added areas viz. Thiruvottiyur, Kathivakkam, Ambattur, Maduravoyal, Valasaravakkam, Porur, Alandur, Meenambakkam, Injambakkam, Nandambakkam, Nolambur and Karambakkam.

Water supply schemes are under process in 23 added areas, namely Edayanchavadi, Sadayankuppam, Kadapakkam, Theeyambakkam, Vadaperumbakkam, Manali, Surapattu, Kathirvedu, Puthagaram, Puzhal,

Chinnasekkadu, Madhavaram, Ramapuram, Manapakkam, Mugalivakkam, Ullagaram-Puzhuthivakkam, Pallikaranai, Perungudi, Kottivakkam, Palavakkam, Sholinganallur, Karapakkam and Okkiyum-Thoraipakkam.

Tender process is under progress for providing Water supply schemes in 5 added areas, namely Mathur, Jalladampettai, Madipakkam, Uthandi and Nerkundram (Balance works). For Neelankarai, Semmancheri water supply schemes, work will be taken up with central and state government funds.

5.2.1 Desalination plant of 150 MLD capacity at Nemmeli along ECR, Chennai

The late Hon'ble Chief Minister made an announcement under Rule 110 on the floor of assembly that another 150 MLD capacity desalination plant will be set up at Nemmeli. The project is to be implemented with the grants

from AMRUT scheme and financial assistance from KfW, the German funding agency at a total project cost of ₹ 1259.38 Crore.

The bids received for this project are under evaluation. The Coastal Regulation Zone clearance for implementing this plant has been accorded by the committee constituted by the Ministry of Environment Forest and Climate Change, Government of India.

Water produced from this plant will be supplied to 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 benefiting a population of 9 lakh.

5.2.2 Desalination plant of 400 MLD capacity at Perur along ECR, Chennai

The late Hon'ble Chief Minister had also made an announcement under Rule 110 on the floor of assembly that a 400 MLD desalination Plant will be constructed at Perur along the East Coast Road in South Chennai. The CPHEEO of Ministry of Housing and Urban Affairs, Government of India has appraised revised DPR for a value of ₹ 3912.20 crore.

JICA has furnished revised detailed project report for a value of ₹ 6078.40 Crore during October 2017. This project is to be implemented with full funding / financial assistance for an approximate value of ₹ 4267.70 crore from Japan International Co-Operation Agency (JICA). In this regard, JICA has signed the loan agreement for a value of ₹ 1744 crore as first tranche with Government of India on 29.03.2018. The balance amount

₹ 1810.70 crore will be met out by the Government of Tamil Nadu. The Coastal Regulation Zone clearance for implementing this plant has been accorded by the Committee constituted by the Ministry of Environment, Forest & Climate Change, Government of India.

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

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

Laying of the second pipeline of 2000 mm diameter for a length of 6.5 km from Chembarambakkam water treatment plant to Poonamallee bye-pass junction to convey the full

quantity of 530 MLD of treated water from Chembarambakkam to the city, proposed at an estimated cost of ₹ 43.75 crore, is under progress and expected to be completed by December 2018.

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

Laying of 900 mm diameter pumping main for a length of 17 km at an estimated cost is ₹ 93.77 crore to transmit water from the proposed Thervoykandigai reservoir to Krishna water canal is under progress and is expected to be completed by September 2018.

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

Chennai Mega City Development Mission was launched by the late Hon'ble Chief Minister to improve infrastructure and basic amenities in

Chennai city with a special focus on the newly added areas. Under this scheme, the works of laying of water supply lines in uncovered areas of slums, providing under ground tanks and water filling points in newly added areas and replacement of choked water mains / PVC mains proposed during the year 2011-12 at a cost of ₹ 56.50 crore have been completed. Among the water supply schemes proposed during the year 2012-13, works at Nolambur, Nandambakkam, Karambakkam and Injambakkam have been completed at a cost of ₹ 66.86 crore. Further, works taken at a cost of ₹ 125.16 crore at Ramapuram, Manappakkam, Okkiam-Thoraipakkam and Sholinganallur-Karambakkam are under progress and expected to be completed by March 2019. Works proposed during the year 2013-14 at a cost of ₹ 335.34 crore at Sadayankuppam, Edayanchavadi, Kadapakkam, Manali, Chinnasekkadu, Vadaperumbakkam, Theyyampakkam,

Kottivakkam, Perungudi, Palavakkam, Surapet, Kathirvedu, Puthagaram, Puzhal, Pallikaranai and Mugalivakkam are under progress and expected to be completed by September 2018.

5.2.6. Deposit works for other Local Bodies

The water supply works taken up at a cost of ₹ 160.01 crore for Avadi, Anakaputhur Municipalities and Sriperumbudur Town Panchayat as deposit works are under progress and expected to be completed by March 2019.

5.2.7. Water Supply Schemes taken up under Japan International Co-operation Agency (JICA)

Madhavaram water supply scheme has been taken up at a cost of ₹ 55 crore with JICA assistance is under progress and expected to be completed by August 2018.

5.2.8 Water Supply Schemes taken up under Tamil Nadu Urban Development Project – III (TNUDP-III)

The water supply schemes taken up at a cost of ₹ 143.05 crore at Pammal and Pallavaram under TNUDP III are under progress and expected to be completed by September 2018.

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

In the core areas of Chennai city, water distribution pipelines of more than 30 years old have been identified for a length of about 914 km. These pipes are being renewed periodically under various schemes. In order to improve the distribution of water supply, the late Hon'ble Chief Minister had 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

310 km at a cost of ₹ 116.04 crore. Work is under progress and is expected to be completed in July 2018.

5.3 Sewerage services

In Chennai city, Chennai Metropolitan Water Supply and Sewerage Board is providing sewerage services including collection, sewage treatment, reuse of treated water, power generation from sewage treatment plants and disposal. The total capacity of all the sewage treatment plants located at Kodungaiyur, Koyambedu, Nesapakkam and Perungudi is 727 MLD.

The sewage system in the Chennai core city has been divided into 5 zones with independent zonal collection system with pipelines for a length of about 4500 kms. The sewage generated from houses and other buildings are collected through 253 sewage pumping stations

and treated at 12 sewage treatment plants before safe disposal/reuse.

5.3.1. Capacity of Sewage Treatment Plants

CMWSSB is having sewage treatment Plants of total capacity of 727 MLD located at Kodungaiyur (3 Units), Koyambedu (3 Units), Nesapakkam (3 units) and Perungudi (3 units).

5.3.2. Sewage Treatment Plant under Construction

Further, additional sewage treatment plants at Thiruvottiyur, Sholinganallur I & Sholinganallur – II for a total capacity of 103 MLD at a cost of ₹ 126.01 crore are under construction and expected to be completed by January 2019.

5.3.3 Sewerage Services connections

The services of the Board with regard to sewage disposal have increased manifold since

the formation of the Board in 1978. Also, it can be seen from the growth in providing services to 8,43,623 consumers now as against 1,14,000 consumers in the year 1978. During 2017-18, 11,961 new house service connections have been effected in Chennai City.

5.4 Sewerage Disposal – New Proposals

In order to improve the living standards with respect to public health, environment and sanitation of the 42 added areas on par with the core city, CMWSSB is implementing the underground sewerage scheme in the added areas of Chennai city Under Chennai Mega City Development Mission (CMCDM).

Under this fund, Under Ground Sewerage Schemes have been completed in 6 areas viz. Madhavaram, Valasaravakkam, Alandur, Meenambakkam, Maduravoyal and Nolambur. Further, Under Ground Sewerage Schemes

(UGSS) are under progress in another 13 added areas, namely Thiruvottiyur, Kathivakkam, Surapattu, Puthagaram, Kathirvedu, Ambattur, Porur, Ullagaram-Puzhuthivakkam, Pallikaranai, Ramapuram, Perungudi, Sholinganallur and Karapakkam. Tenders received for UGSS at Nerkundram, Mugalivakkam, Manali, Chinnasekkadu, Manapakkam and Karambakkam are under evaluation.

5.4.1. Sewerage works taken up under Chennai Mega City Development Mission (CMCDM)

Detailed Project Reports (DPRs) have been prepared for 4 added areas viz. Edayanchavadi, Sadayankuppam, Kadappakkam, and Okkiyam Thoraipakkam. DPR for providing the underground sewerage scheme for the balance 13 added areas viz. Puzhal, Mathur, Theyambakkam, Vadaperumpakkam, Nandambakkam, Kottivakkam, Palavakkam, Neelankarai, Madipakkam, Semmencherry,

Uthandi, Jalladampettai and Injambakkam are under preparation.

In addition to the above, the schemes proposed during the 2011-12 viz., Laying of force mains between pumping stations, Enlargement of sewage pumping mains, insertion of UGSS manholes in Mogappair, construction of roadside pumping stations with submersible pumpsets, improvement to existing sewage pumping stations, enlargement of sewer mains, procurement of sewerage maintenance equipments at a cost of ₹ 96.05 crore have been completed and put into use. The work of re-routing and enlargement of sewage pumping mains and allied works at Velachery taken up at a cost of ₹ 36.55 crore are under progress and will be completed by July 2018.

The schemes proposed during 2012-13 viz., procurement of sewerage maintenance equipments at a value of ₹ 15.20 crore has been

completed. Further, UGSS works at Kathivakkam, Sholinganallur-Karapakkam and Ramapuram taken up at a cost of ₹ 245.55 crore are under progress and expected to be completed by October 2018.

Works proposed during the year 2013-14 at a value of ₹ 34.52 crore at Thiruvottiyur (Annai Sivagami Nagar) and Nolambur have been completed. The works taken up at a cost of ₹ 95 crore at Surapet, Puthagaram and Kathirvedu are under progress and are expected to be completed by August 2018. Tenders received for the works at a cost of ₹ 75.24 crore for Mugalivakkam are under evaluation.

5.4.2 Deposit works for other local bodies

The works taken up at Thirumazhisai Town Panchayat at a value of ₹ 20.47 crore have been completed. Among the works taken up for a value of ₹ 158.05 crore at Avadi municipality, all the works related to collection system have been

completed and the balance works are expected to be completed by October 2018. Further, the works taken up at Tambaram municipality and Sriperumbudur Town Panchayat at a value of ₹ 238.08 crore are under progress and expected to be completed by December 2018.

5.4.3 Works taken up under Tamil Nadu Urban Development Project – III (TNUDP- III)

The works taken up at Madhavaram and Ambattur phase I at a cost of ₹ 115.97 crore under TNUDP-III scheme has been completed. The works taken up at ₹ 87.63 crore at Thiruvottriyur are under progress and expected to be completed by July 2018.

5.4.4. Construction of additional 54 MLD Sewage Treatment Plant at Sholinganallur under Tamil Nadu Investment Promotion Programme (TNIPP)

To treat the sewage generated from added areas located in the southern part of Chennai

city, construction of a new 54 MLD Sewage Treatment Plant at Sholinganallur with the latest treatment technology along with provision for power generation has been taken up at a cost of ₹ 65.97 crore. Work is under progress and all the works are expected to be completed by January 2019.

5.4.5 Mechanization of sewer cleaning operations

The Board has mechanized the operation and maintenance of the sewerage system in order to eradicate manual scavenging by procuring 112 Jet rodding machines, 245 desilting machines, 30 jetting cum suction machines and 43 Super sucker machines for effective maintenance of the sewer system.

5.4.6 Preventive maintenance of sewer system

CMWSSB is serving 8,43,623 consumers by maintaining sewer lines of 4500 km. In order to

sustain the safe disposal of sewage generated in Chennai city, CMWSSB has implemented preventive maintenance for its sewer network. Sewers have been classified depending on the periodicity of maintenance required, based on the complaints received and accordingly equipments are deployed. By the implementation of preventive maintenance of the sewer system, the numbers of sewer blocks in the city have been considerably reduced.

5.4.7 Plugging of sewage outfalls

It was proposed to plug 337 sewage outfalls at a cost of ₹ 300 crore during the year 2012-13. This would prevent untreated sewage from entering the city's waterways and the sewage would be appropriately treated and disposed.

In phase-I, works for plugging 179 of the 337 outfalls were taken up at a cost of

₹ 150 crore under the Infrastructure and Amenities Fund and are expected to be completed by July 2018.

In phase-II, the works of plugging of balance 158 sewage outfalls, at a cost of ₹ 163 crore is taken up under 7 packages. Out of these, works are in progress in 6 packages and the remaining 1 package is in tender stage.

5.4.8 Reuse of secondary treated water in Industries

From the Kodungaiyur sewage treatment plant, 28.53 MLD of secondary treated sewage water is being supplied to M/s. Chennai Petroleum Corporation Ltd., M/s. Madras Fertilizer Ltd., since 1989 and M/s. Manali Petro Products Ltd., since 2005. The revenue accrued to the Board is ₹ 18.98 crore for the year 2017-18.

5.4.8.1 Recycling of waste water

Water recycling is the process of reusing treated wastewater for beneficial purposes such as agricultural and landscape irrigation, industrial processes, toilet flushing, and replenishing a ground water basin (referred to as ground water recharge). It reduces exploitation of ground water and also leads to additional financial income.

On the floor of the Assembly, the late Hon'ble Chief Minister of Tamil Nadu had announced that the Government would promote reuse of treated waste water for industrial purposes in place of fresh water to the industries.

5.4.8.2 Setting up of TTRO Plant of 45 MLD capacity at Koyambedu

To meet out the requirements of industries at Irungakattukottai / Sriperumbudur /

Oragadam etc. it has been proposed to supply Tertiary Treated water by constructing a 45 MLD capacity Tertiary Treatment Reverse Osmosis (TTRO) plant at Koyambedu. Accordingly, Government of Tamil Nadu had accorded administrative sanction for a sum of ₹ 486.21 crore. For this scheme, ₹ 231.50 crore has been received as loan under TNIPP and ₹ 208.82 crore has been sanctioned as a grant from the Government of India and Government of Tamil Nadu under AMRUT. Work is under progress and will be completed by April 2019.

5.4.8.3 Setting up of TTRO Plant of 45 MLD capacity at Kodungaiyur under TNSUDP

To meet the requirements of industries and power plants in North Chennai, it is proposed to construct another 45 MLD TTRO Plant at Kodungaiyur at a cost of ₹ 330 crore. For this scheme, ₹ 229.50 crore has been received as loan under TNSUDP and ₹ 118.67 crore has been

sanctioned as a grant from the Government of India and Government of Tamil Nadu under AMRUT. Work is under progress and will be completed by April 2019.

5.5. Sustainable Water Security Mission

In order to achieve sustainable water security in Chennai City, the late Hon'ble Chief Minister had announced the "Sustainable Water Security Mission" to ensure continuous receipt of safe water in Chennai city.

Under this Mission, the works of campus rainwater harvesting, storm water harvesting and campus grey water recycling works had been completed. The works of restoration and rejuvenation of lakes are under progress.

The main focus of this mission, is to take up works in the above categories for demonstration purposes, so that the public can participate,

learn and implement the best practices in water management in their premises.

5.6 CHENNAI SMART CITY

Ministry of Housing & Urban Affairs, Government of India had selected Chennai City as one of the smart cities. Improvement works are proposed in the ABD area at Thyagaraya Nagar and surrounding areas such as Teynampet, Thousand Lights, Nandanam, West Mambalam and CIT nagar covering 452 streets. The improvement works for water supply and sewerage works are proposed as follows:

- To enhance the existing water supply network so as to supply 24 hours. Water for all the 7 days of the week and to install 100 percent water meter for all the consumers.
- Improvement to the existing water supply and sewerage infrastructures.

- Complete computerization and online monitoring for the enhancement of water quality, pressure and supply quantity.
- Besides, it is proposed to carry out the following works in 200 divisions of Chennai Corporation under smart city development scheme.
- To enhance the smart water digital solutions for citizens services scheme have been prepared for ₹ 16 crore and put up for funding for implementation.
- Detailed Project Report has been prepared for ₹ 9.50 crore and the tender is under evaluation for installing 12708 numbers of AMR water meters to water intensive and commercial establishment / consumers in Chennai city.
- Detailed Project Report has been prepared for ₹ 11.63 crore and tender under evaluation for installing 251 numbers of Electromagnetic water meter to all the head works and water treatment plants of CMWSS Board.

- Detailed Project Report has been prepared for ₹ 11.75 crore and tenders invited for the works of supplying, installing and commissioning of filling post control unit and smart card based online monitoring system in 191 filling post in 41 filling stations of CMWSS Board.

5.7. RAINWATER HARVESTING

Rainwater harvesting is the accumulation and storage of rainwater for reuse rather than allowing it to run off. Rainwater can be collected from the roofs of buildings and redirected to a deep pit (well, shaft or borehole), a lake with percolation, or collected from dew or fog with nets or other tools. The uses include water for gardens, livestock, irrigation, domestic use with proper treatment, indoor heating for houses, etc. The harvested water can also be used as drinking water, long-term storage, and for other purposes such as groundwater recharge.

Tamil Nadu is a pioneer in implementing rain water harvesting (RWH) programme in the country. Tamil Nadu is the first and only state in India to make installation of RWH structures mandatory for both old and new buildings. This success story of Chennai city can be replicated throughout the country.

The campaign was first launched by CMWSSB in the year 2002, making Chennai city a pioneer in rainwater harvesting. The Board is creating awareness among the residents of Chennai city about rain water harvesting by issuing pamphlets, booklets, seminars and exhibitions every year on the institution and regular maintenance of RWH structures to reap maximum benefits during monsoon.

To implement the RWH structures in the buildings while availing 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 8,03,228 buildings are in existence with a total number of 8,73,700 RWH structures. During the year 2017-18, a total number of 11,000 rainwater harvesting structures were constructed while effecting new / renewal of water and sewer connections. In order to assess the impact of the installation of RWH structures, 145 observation wells have been selected covering all parts of Chennai city so as to monitor the ground water level and water quality periodically. Observations show that there is a significant improvement in water level and water quality after every monsoon. Recharge potential from RWH structures is 2.75 TMC. The area / depot engineers are monitoring the installation and maintenance of rainwater harvesting structures in Chennai city.

Following the implementation of RWH scheme, ground water level and its quality are improving every year, especially during the monsoon period.

5.8 Financial Position

The total revenue expenditure as per the Budget Estimate for the year 2017-18 is ₹ 1107.84 crore. The total income of the Board as per Budget Estimate is ₹ 754.50 crore. Of this, the income from Water Supply and Sewerage Tax is ₹ 170.34 crore, water and sewerage charges are ₹ 288.87 crore and other income is ₹ 53.84 crore. For purchase of desalinated water from Minjur (O&M) and for other purposes, the Government of Tamil Nadu provides grants to the Board to the tune of ₹ 241.45 crore.

5.9 Grievance Redressal

To improve service delivery, ensure transparency and speedy Redressal of consumer

grievances, CMWSSB has taken the following steps:

5.9.1 24x7 Complaints Registration & Monitoring System

A 24x7 complaint cell is functioning at the CMWSSB head office to receive, register and monitor the grievances of the consumers. Consumers can register their complaints / grievances either in person or by dialling 45674567. The registered complaints are immediately transferred online and also by SMS to the respective depot engineer to rectify the defects. Accordingly, rectification of the defects is being done immediately.

On an average, 160 complaints are being registered in the complaint cell daily. The Grievance Redressal system has been revamped to make it user friendly. A separate grievance Redressal and facilitation office has been set up at head office to serve the consumers.

5.9.2 Complaint Redressal through website

Consumers can register their complaints online through the Board's website www.chennaietrowater.tn.nic.in. The registered complaints are forwarded to the respective area offices and the same are redressed as per the Citizens' charter norms.

5.9.3 Open House Meeting

To improve service delivery to the consumers of Chennai city, the Board conducts Open house meetings in all the area offices between 10.00 A.M. and 1.00 P.M. on the 2nd Saturday of every month. The senior officers of the Board, preside over these meetings. The complaints / grievances / suggestions received during these meetings are attended immediately.

5.9.4. Clearance Of Septage From Septic Tanks By Lorries

The Hon'ble Minister of Municipal Administration & Water Supply and Rural Development, Special Programme Initiatives Dept., has announced on the floor of the State Legislative Assembly to "Provide sewer lorries on hire basis for cleaning septic tanks at reasonable cost by CMWSSB instead of hiring sewer lorries directly by the residents of added areas at unreasonable hiring charges from private operators". Based on the above, CMWSSB has formulated a special scheme of "Dial for Septic Tank Clearance".

Under this scheme the consumers in the added areas like, Thriuvottiyur, Manali, Madhavaram, Ambattur, Valasaraavakkam, Alandur, Perungudi and Sholinganallur of Greater Chennai corporation can book sewer lorries through CMWSSB Web site

www.chennaietrowater.tn.nic.in or CMWSSB call center No.4567-4567 CMWSSB at a cost of ₹ 650.00 so that they can clear the septic tanks of their residences.

This scheme has been implemented from 15.05.2018 and also well received by the public.

6. Tamil Nadu Water Supply And Drainage Board

Tamil Nadu Water Supply and Drainage Board is a statutory organization formed by Government of Tamil Nadu, with the objective of providing protected water supply as well as Under Ground Sewerage Schemes to the local bodies in Tamil Nadu excluding Chennai Corporation. The Board was constituted in 14.04.1971. The Board is headed by the Principal Secretary to Government, Municipal Administration and Water Supply Department as Chairman. The Managing Director is Chief Executive Officer, supported by technical, financial and administrative wings. There are four Chief Engineers at Regional level with headquarters in Vellore, Thanjavur, Coimbatore and Madurai.

6.1 Functions of TWAD Board

- Planning, Investigation, Design, Implementation and Commissioning of Water Supply and Sewerage Schemes.
- Operation and Maintenance of Combined Water Supply Schemes.
- Water Quality Monitoring and Surveillance Programme.
- Ensuring Sustainability of Drinking Water Sources.
- Training activities.

6.2 Rural Water Supply Programme

The norm for Rural Water Supply as per National Rural Drinking Water Programme (NRDWP) guidelines have been enhanced, by the Government of India from 40 LPCD to the service level of 55 LPCD.

Combined Water Supply Schemes (CWSS) are being implemented in Rural areas with State Government funds under the Minimum Needs Programme, Government of India, assistance under the National Rural Drinking Water Programme and financial assistance from National Bank for Agriculture and Rural Development (NABARD).

The schemes are handed over to the local body for maintenance on completion, when the beneficiary is an individual local body. TWAD Board takes up the maintenance of the scheme, if it serves more than one local body.

There are 1,00,018 rural habitations in Tamil Nadu. Out of this, 93,463 habitations are fully covered with water supply at 40 LPCD and the balance 6,555 habitations are partially covered.

During 2017-18, 2,435 partially covered habitations have been taken up for full coverage with water supply.

6.3 Sustainability of Sources

In addition to implementation of water supply schemes, measures have been taken to augment ground water sources for source sustainability by creating recharge structures such as check dams, recharge shafts, percolation ponds under Government of India and State Government assisted programmes.

A total of 3,348 recharge structures have been constructed by TWAD Board at a cost of ₹ 228.24 crore since 2011-12.

6.4 Combined Water Supply Schemes

With the objective of providing sustainable and potable water supply to the public, Tamil Nadu Water Supply and Drainage Board

(TWAD) formulates and implements Combined Water Supply Schemes (CWSS) in coastal, water quality affected and needy areas covering more than one local body with common source of water supply viz., rivers, dams and reservoirs. Combined Water Supply Schemes implemented by TWAD Board are for the benefit of both urban and rural local bodies.

6.4.1 Major Combined Water Supply Schemes

During the year 2017-18, 5 major combined water supply schemes have been completed to supply 151.63 MLD of water, at an estimate cost of ₹ 1824.20 crore, benefiting 34.50 lakh people.

8 Major Combined Water Supply Schemes are under various stages of implementation which on completion will supply 202.38 MLD of water to 31.24 lakh people. These schemes are implemented at an estimated cost of

₹ 1574.36 crore with the financial assistances from the Minimum Needs Programme (MNP), National Bank for Agriculture and Rural Development (NABARD), National Rural Drinking Water Supply Programme (NRDWP), Urban Local Body (ULB) Contribution and World Bank TNSUDP.

The details of the major combined water supply schemes are as given below:

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population Covered (in lakh)
1.	CWSS to 1153 Rural Habitations and Peravurani, Adhiramapattinam and Perumagalur Town Panchayats in Thanjavur District	495.70	7.00
2.	CWSS to 1766 Rural Habitations in Pudukottai District and 125 Habitations in Sivagangai District.	301.50	6.65

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population Covered (in lakh)
3.	CWSS to Cuddalore Municipality, Bhuvanagiri and Parangipettai Town Panchayats and 812 Rural Habitations in Cuddalore District	260.54	7.75
4.	CWSS to Thondamuthur, 6 Town Panchayats and 134 Rural Habitations in Coimbatore District	130.46	1.83
5.	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
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
7.	CWSS to 755 Rural Habitations in Virudhunagar District	234.00	6.51

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population Covered (in lakh)
8.	CWSS to 295 Quality affected Habitations and 315 wayside Habitations in Nagapattinam District	105.70	3.70
9.	CWSS to Azhagiyapandipuram, 8 Town Panchayats and 246 Rural Habitations in Kanyakumari District	109.80	2.96
10.	CWSS to 293 rural Habitations in Musiri, Thathaiyangarpettai, Thuraiyur and Uppiliyapuram Unions of Trichy District.	140.22	1.68
11.	CWSS to Sankarankoil, Puliyankudi Municipalities, Thiruvankadam TP in Thirunelveli District and Rajapalayam, Sivakasi, Thiruthangal Municipalities in Virudhunagar District.	543.20	6.20
12.	Combined Water Supply Scheme to Keeranur, Neikkarapatty Town panchayats and 253 Rural habitations in Dindigul District	108.80	2.82

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population Covered (in lakh)
13.	CWSS to Eraniel Town Panchayat and 319 Rural Habitations and Improvements to Padmanabapuram CWSS and kattathurai CWSS in kanyakumari District	174.00	3.44
	Total	3398.96	65.74

Further, administrative approval has been accorded for ₹ 642.44 crore for the following 3 CWSS with NABARD financial assistance which are at tender stage.

1. CWSS to Annur and Mooperipalayam Town Panchayats in Coimbatore District and Avinashi Town Panchayat in Tiruppur District including bulk supply to 155 rural habitations of Palladam and Tiruppur Unions.

2. CWSS to Alampalayam, Padaveedu Town Panchayats and 669 rural habitations in Namakkal District and Sankagiri town panchayat in Salem district.

3. CWSS to Reddiarpatti and 63 rural habitations in Palayamkottai Union of Tirunelveli district.

6.4.2 Other Combined Water Supply Schemes

During the year 2017-18, 4 CWSS, have been completed and 4 CWSS are under trial run to supply 74.85 MLD of water at an estimate cost of ₹ 412.78 crore, benefiting 11.17 lakh people.

15 Combined Water Supply schemes are under various stages of implementation, which on completion will supply 65.79 MLD of water to 10.71 lakh people. These schemes are

implemented at an estimated cost of ₹ 443.39 crore with financial assistance from the Minimum Needs Programme, National Bank for Agriculture and Rural Development, the National Rural Drinking Water Programme.

The details of various schemes taken up are given below:

Sl. No	Name of Scheme	Estimate Cost (₹ in crore)	Population (in lakh)
1.	CWSS to 306 rural habitations in Perambalur, Veppanthattai and Alathur Unions, Arumbavur and Poolambadi Town Panchayats in Perambalur District	61.11	2.57
2.	CWSS to 158 Rural habitations in Gudimangalam and Udumalaipettai union in Tiruppur District	54.14	1.23
3.	CWSS to 100 habitations in Koodanukulam and 12 other Village Panchayats	68.10	0.88

Sl. No	Name of Scheme	Estimate Cost (₹ in crore)	Population (in lakh)
	in Radhapuram and Valliyoor Unions situated around Koodankulam Nuclear Power Plant in Tirunelveli District		
4.	CWSS to 60 Quality affected and 59 way side habitations in Kattumannarkoil Union and Lalpettai Town Panchayat in Cuddalore District	18.16	0.60
5.	CWSS to Vellakoil, Kangayem Municipalities and 528 Rural habitations in Erode and Tiruppur District.	91.40	2.00
6.	CWSS to Athangaraipatty and 14 Habitations in Kadamalaikundu, Myiladam parai Union in Theni District	2.65	0.07
7.	CWSS to 1262 rural Habitations in Vellakoil, Mulanur, Dharapuram, Kundadam, Kangayam Unions in Tiruppur	91.16	2.72

Sl. No	Name of Scheme	Estimate Cost (₹ in crore)	Population (in lakh)
	District and Chennimalai Union in Erode District - Phase -II		
8.	CWSS to 281 rural habitations of Jeyankondam Union in Ariyalur District	26.06	1.09
9.	CWSS to Kandamanur and 15 Rural habitations in Andipatti and Kadamalaikundu-Myiladumparai Unions in Theni District	5.50	0.12
10.	CWSS to 109 rural habitations in Oddanchatram Union in Dindigul District (under Vedasandur CWSS)	4.08	0.59
11.	CWSS to 90 Rural Habitations in Karungulam (Part), Srivaikundam (Part) and Thoothukudi (Part) Unions in Thoothukudi District	17.17	0.48

Sl. No	Name of Scheme	Estimate Cost (₹ in crore)	Population (in lakh)
12.	CWSS to Mulligur and 54 rural habitations in Mulligur, Italar and Nanjanadu Village Panchayats in Nilgiris District.	25.85	0.30
13.	Augmentation of Water supply to 147 Rural Habitations of Alangulam and Sankarankoil unions in Tirunelveli District	31.32	1.56
14.	CWSS to Keelapavoor Town Panchayat (Part) and 163 Rural Habitations in Pappakudi (Part), Kadayam and Keelapavoor Unions in Tirunelveli District	46.55	1.55
15.	CWSS to 170 Rural Habitations in Manur (Part) and Palayamkottai (Part) Unions in Tirunelveli District	32.40	1.13
16.	CWSS to 101 rural habitations in Thoppampatti Union in Dindigul District (under Vedasandur CWSS)	4.11	0.43

Sl. No	Name of Scheme	Estimate Cost (₹ in crore)	Population (in lakh)
17.	CWSS to 201 rural habitations in Reddiarchatram Union in Dindigul District (under Vedasandur CWSS)	8.96	0.86
18.	CWSS to 248 rural habitations in Kovilpatti (Part), Kayathar (Part), Ottapirdaram (part), Vilathikulam (part) and Pudur (Part) unions in Thoothukudi District	94.04	1.25
19.	CWSS to Vadugapatti Town Panchayat & 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
20.	CWSS to 253 Rural Habitations in Kulithalai and Thogamalai Union in Karur District	52.75	0.69

Sl. No	Name of Scheme	Estimate Cost (₹ in crore)	Population (in lakh)
21.	CWSS to 17 quality affected habitations and 69 Way Side Habitations in Parangipettai and Kumaratchi Unions of Cuddalore District andKodiyampalayam habitation in Nagapattinam District	19.14	0.38
22.	CWSS to 135 rural habitations in Marungapuri and Vaiyampatty unions in Tiruchirappalli District utilizing the bulk provision made in Natham CWSS in Dindigul District	46.32	0.29
23.	CWSS to 51 habitations in Konganapuram & Edapady unions by augmenting the existing CWSS to 327 habitations in Salem District utilizing the existing HW, WTP Booster stations.	9.50	0.09
	Total	856.17	21.80

6.5 Urban Stand Alone Water Supply Programme

For Stand Alone Water Supply Scheme, TWAD Board functions as a project implementation agency to corporations, municipalities and town Panchayats. The schemes are handed over to the respective urban local bodies for maintenance on completion.

During the year 2017-18, 8 urban stand-alone water supply schemes covering 5 municipalities and 3 town Panchayats at an estimated cost of ₹ 127.61 crore have been completed to supply 86.71 MLD of water benefiting 5.80 lakh people. 14 schemes covering 2 Corporations, 9 Municipalities and 3 Town Panchayats, are under various stages of implementation which on completion will supply 257.65 MLD of water to 22.28 lakh people.

These schemes are executed at a cost of ₹ 969.10 crores.

6.6 Atal Mission For Rejuvenation And Urban Transformation (AMRUT) Projects

Projects have been taken in 3 phases covering water supply and underground drains schemes for the years 2015-2016, 2016-17 and 2017-20 as given below:

6.6.1 State Annual Action Plan: (SAAP-I - 2015-16)

8 Water Supply Schemes at an estimate cost of ₹ 1907.09 crore are under implementation to benefit 57.13 lakh people. Further, one underground sewerage scheme is under implementation at an estimated cost of ₹ 23.32 crore to benefit 0.19 lakh people. These schemes are implemented with financial assistance from Central, State Government, ULB, Integrated Urban Development Mission

(IUDM), World Bank assisted TNSUDP and German Funding Agency (KfW) assisted Sustainable Municipal Infrastructure Financing – Tamil Nadu (SMIF-TN-II-2).

The details of the schemes are given below:

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population covered (in lakh)
1	Improvement of Water supply Distribution system to Ambur Municipality in Vellore District	50.90	1.82
2	Dedicated Water supply scheme to Erode Corporation.	484.45	9.05
3	Improvement of Water supply Distribution System to Tiruppur Municipality	250.00	19.50
4	Improvement of Water supply Distribution system to Vellore Corporation in Vellore District.	234.93	9.20

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population covered (in lakh)
5.	Improvement of Water supply Distribution System to Hosur Municipality (Phase-I)	87.91	2.29
6.	Improvement of Water Supply Distribution System to 8 Added Areas of Coimbatore Corporation	395.41	9.22
7.	Water Supply Improvement Scheme to Nagercoil Municipality	223.44	3.90
8.	Water Supply Improvement Scheme to Rajapalayam Municipality	180.05	2.15
9.	Under ground sewerage scheme to Velankanni Town Panchayat in Nagapattinam District	23.32	0.19
	Total	1930.41	57.3257.32

6.6.2 State Annual Action Plan: (SAAP-II-2016-17)

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population covered (in lakh)
1.	Under ground sewerage to Rameshwaram Municipality in Ramanathapuram District	40.33	0.63
2.	UGSS to added areas Kurichi and Kuniyamuthur of Coimbatore Corporation	442.00	5.17
	Total	482.33	5.80

6.6.3 State Annual Action Plan: (SAAP-III-2017-20)

Sl. No.	Name of Scheme	Estimate Cost (₹ in crore)	Population covered (in lakh)
1	UGSS to Rajapalayam Municipality	178.75	2.20
2	UGSS to Ambur Municipality	129.07	1.72
3	WSIS to expanded Coimbatore Corporation including newly merged areas with River bhavani as source – Pillur - III	649.30	32.79
	Total	957.12	36.71

6.7 Operation and Maintenance of CWSS

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 date, TWAD Board maintains 554 Combined Water Supply Schemes covering 8 corporations, 66 municipalities, 324 Town Panchayats, 47,136 rural habitations and 532 industries / institutions, benefiting a population of 4.21 crore.

An average of 1,803 MLD of water was supplied during April 2018 through these 554 Combined Water Supply Schemes to local bodies and Industry / organizations as detailed below:

Sl. No.	Name of Beneficiary	No. of Beneficiaries	Designed Quantity (in MLD)	Average Supplied Quantity in April 2018 (in MLD)
1	Corporations	8	265	200
2	Municipalities	66	264	201
3	Town Panchayats	324	334	301

Sl. No.	Name of Beneficiary	No. of Beneficiaries	Designed Quantity (in MLD)	Average Supplied Quantity in April 2018 (in MLD)
4	Rural Habitations	47136	1066	1011
5	Industries / Institutions/ Commercial Organisations	532	144	90
	Total	48066	2073	1803

During the year 2017-18, the Operation and Maintenance expenditure is ₹ 707.83 crore and the revenue collected through water charges is ₹ 449.79 crore.

Government of Tamil Nadu has released ₹ 140.00 crore during the year 2014-15, ₹ 207.11 crore during the year 2015-16 and ₹ 103.79 crore during the year 2016-17 as devolution grant to meet the gap between income and expenditure in the operation and maintenance of CWSS.

6.8 Revamping of Combined Water Supply Schemes

Revamping works have been taken up for Combined Water Supply Schemes (CWSS) wherever there is a reduction in yield of sources or a decrease in the efficiency of pumpsets or damages to pipe lines, valves, etc. These revamping works help to make the CWSS fully functional and enhance the supply status to the designed level. During 2017-18, 657 revamping works were taken up at a cost of ₹ 64.26 crore under NRDWP/SMS fund.

6.9 Water Quality Surveillance and Monitoring

At Chennai, TWAD Board has established state level water testing laboratory apart from 31 districts and 56 sub districts water testing laboratories all over Tamil Nadu to achieve the objective of ensuring safe drinking water supply to the public. Facilities for testing all the basic chemical and bacteriological water quality

parameters and for effective surveillance and monitoring of water supply sources in both Rural and Urban areas are available in these laboratories. Government of India has recognized the state level water testing laboratory at Chennai as "State Referral Institute for Tamil Nadu".

Accreditation has been obtained from the National Accreditation Board for Testing and Calibration Laboratories (NABL) for the state level water testing laboratory, Chennai. Around 50,000 water samples have been tested in state and district laboratories and 1,68,000 water samples have been tested in sub district laboratories during the year 2017-18. Panchayats were supplied with 12,524 field water testing kits. 10,000 grass root level functionaries were trained for using field water testing kits.

It is proposed to further intensify the activities of the Lab during 2018-19 by testing more samples, giving training to grass root level functionaries and supply of testing kits.

6.10 Hydro Geological Activities

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

The project on Groundwater Prospect Maps (HGM Maps) sanctioned by the Ministry of Drinking Water and Sanitation, Government of India, has been taken up and district-wise Block ATLAS or Maps have been printed and the copies

(both hard & soft copies) will be shared to all line departments for field use.

TWAD Board has taken up a research and development project under the Government of India funds for Tamiraparani River Basin in Tirunelveli and Thoothukudi districts for the sustainability of drinking water sources for future requirement.

The State Planning Commission has sanctioned a pilot project to TWAD Board for Conjunctive use of ground and surface water along with rainwater harvesting, to ensure 24x7 water supply in Lagampalayam Village Panchayat of Nambiyur union in Erode district. Under this project, the water balance in the Village Panchayat has been worked out involving the community and drinking water security.

Sustainable Water Security Mission ("SuWaSeM") envisages all possibility rainwater

harvesting in the urban local bodies of the state. A sum of ₹ 20 crore has been released by Government of Tamil Nadu and it will be implemented through Commissionerate of Municipal Administration and Directorate of Town Panchayats. Tamil Nadu Water Supply and Drainage Board will be the nodal agency for the entire state.

TWAD Board has Geo tagged the drinking water assets like Water Supply Source, Over Head Tank, School Water Supply Scheme, Anganwadi Water Supply Scheme, nearly 95% completed in all the districts of Tamil Nadu except Chennai.

6.11 Under Ground Sewerage Schemes

TWAD Board implements Under Ground Sewerage Schemes (UGSS) in the selected district headquarters and other towns based on the priority fixed by CMA, DTP and Government.

Under Ground Sewerage Schemes to Periyakulam and Ariyalur Municipalities benefiting a population of 91,000 at an estimate cost of ₹ 54.10 crore have been completed during the year 2017-18 by which an overall quantity of 10 MLD of wastewater is available for reuse.

At an estimated cost of ₹ 1315.08 crore, 20 Under Ground Sewerage Schemes benefiting a population of 19.41 lakh are in various stages of progress and on completion 158.77 MLD of wastewater will be available for reuse.

Further, Under Ground Sewerage Schemes to Vallam, Manachanallur & S. Kannanur Town Panchayats benefiting a population of 0.64 lakh at an estimate cost of ₹ 84.07 crore is in tender stage.

6.11.1 Septage Management Projects

Septage Management in Karunkuzhi Town Panchayat benefiting a population of 58,000 at an estimate cost of ₹ 4.93 crore has been completed as a Pilot project. Detailed Project Report for Septage Management for other Town Panchayats are under preparation on priority basis based on the successful model of septage management piloted in Karunkuzhi Town Panchayat in Kancheepuram district.

6.12 Investigation and Preparation of Detailed Project Reports of Water Supply Schemes

TWAD Board has taken up the investigation and preparation of DPR for 32 water supply schemes with an estimate cost of ₹ 13,633.04 crore. The projects entail to benefit a population of 99.18 Lakh covering 1 Corporation, 14 Municipalities, 56 Town Panchayats and 17,339 rural habitations.

The details of the above 32 schemes are tabulated below:

Sl. No.	Description	No. of WSSs	Beneficiaries	Population benefited (in lakh)	Estimate cost (₹ in crore)
1	Schemes in various stages of sanction.	22	1 Corporation 6 Municipalities, 35 Town Panchayat & 6029 Rural habitations.	38.85	3667.84
2	Investigation/ DPR Under preparation	10	8 Municipalities. 21 Town Panchayat & 11310 Rural habitations.	60.33	9965.80
	Total	32	1 Corporations, 14 Municipalities, 56 Town Panchayat & 17339 Rural habitations.	99.18	13633.64

6.13 Quality control Laboratory in TWAD Board

There are four quality control laboratories functioning in the TWAD Board at Coimbatore, Madurai, Trichy and Tindivanam. ISO 9001:2008 certifications have been awarded to the laboratories in Coimbatore and Madurai.

The conformity assessment of field samples is evaluated routinely as per the procedures in the relevant Bureau of Indian Standards (BIS) prior to its usage at the site. The testing facilities adorning the laboratories expediently help in quality upgradation during execution. The materials received from local bodies and government organizations are also tested in these laboratories.

During the financial year 2017-18, 6,070 samples have been tested in the 4 laboratories.

6.14 Management Information System

Tamil Nadu Water Supply and Drainage Board has implemented integrated e-Governance System (TWADNEST) to manage data flow relating to all its schemes, Project Management, Financial Accounting, Human Resource and Billing.

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 data in maintenance schemes are being monitored through online.

Computer Aided Design Software for the design of water supply distribution network, sewer network design analysis and structural analysis are used for the purpose of optimum planning and design.

The TWADNEST is upgraded 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 four Chief Engineer's offices located in Vellore, Madurai, Thanjavur, Coimbatore and five Superintending Engineer's offices in Cuddalore, Trichy, Salem, Tirunelveli and Dharmapuri are interconnected through leased line TNSWAN connectivity for Video Conference (VC) enabling 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 and monitoring system is implemented for effective inspection and monitoring of schemes. A web based online monitoring system has been implemented for effective monitoring of material quality testing in regional laboratories.

7. Tamil Nadu Urban Infrastructure Financial Services Limited

The Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) was established as a public limited company by the Government of Tamil Nadu along with private sector participation. TNUIFSL has an authorized capital of ₹ 2 crore and a paid-up share capital of ₹ 1 crore, of which a sum of ₹ 49 lakh is contributed by the Government of Tamil Nadu, with other shareholders being ICICI Bank Limited, Housing Development Finance Corporation Limited and Industrial Leasing & Financial Services Limited.

The Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) manages various funds such as Tamil Nadu Urban Development Fund, Water and Sanitation Pooled Fund (WSPF) and other Government Grant

Funds. The main tasks of the company include project development, project appraisal, project structuring, resource mobilization and fund management.

The organization provides a spectrum of solutions towards the development of urban infrastructure, right from concept to commissioning of the projects. TNUIFSL has been operating for profit since its establishment, and dividends are declared and paid regularly.

7.1 Tamil Nadu Urban Development Fund (TNUDF)

The Tamil Nadu Urban Development Fund (TNUDF) was established as a trust by the Government of Tamil Nadu with private sector participation from ICICI Bank Limited (ICICI), Housing Development and Finance Corporation Limited (HDFC) and Industrial Leasing and Financial Services Limited (IL & FS).

This fund has been established with a basic objective of providing 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.

TNUDF has a mission, "to contribute to the improvement in urban quality of life in Tamil Nadu by facilitating efficient urban infrastructure asset creation and provision of urban services through innovative project development, independent appraisal and sustainable financing".

7.1.1 Objectives of TNUDF

The objectives of TNUDF are as follows:

- Finance urban infrastructure projects, which improve the living standards of the urban population.
- Facilitate private sector participation in infrastructure through joint ventures and public–private partnerships.
- Improve the financial management of urban local bodies and enable them to access debt finance from markets.

Financial assistance to urban local bodies for implementation of basic service projects such as roads, bridges, storm water drains, sewerage & sanitation, water supply, solid waste management and commercially viable remunerative projects such as bus stands and

market complexes has been regularly provided for by TNUDF.

A corporate trustee viz., Tamil Nadu Urban Infrastructure Trustee Company Limited (TNUITCL) manages Tamil Nadu Urban Development Fund (TNUDF). The fund is operated by 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 a sum of ₹ 56.69 crore has been contributed by ICICI, HDFC and IL & FS to TNUDF.

7.2 External Aided Projects

TNUDF currently operates 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 German Development Bank (KfW) and Tamil Nadu Sustainable Urban Development Project (TNSUDP) assisted by the World Bank. Funds totaling to ₹ 5,286.55 crore are available under the above two lines of credit, as detailed below:

Size of External Lines of Credit

(₹ in crore)

Sl. No.	Components	TNSUDP	SMIF-TN		Total
			Phase-II - Part 1	Phase-II - Part 2	
1	Loan to ULBs	1,225.92	329.73	460.36	2,016.01
2	Capital Grants to ULBs	1,225.92	248.43	353.94	1,828.29
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
	Total	3,831.00	578.16	877.39	5,286.55

7.2.1 KfW (German Development Bank) assisted Sustainable Municipal Infrastructure Financing – Tamil Nadu (SMIF – TN) Program

The Sustainable Municipal Infrastructure Financing – Tamil Nadu (SMIF–TN) program has two phases (phase-I and phase-II) with the assistance of KfW (German Development Bank). The program was launched with the objective of contributing towards the improvement of environment and preservation of natural resources and the living conditions of the urban population.

Phase -I of the programme was completed in December 2015. The phase –II program has two parts, i.e. Part -1 and 2.

The total outlay of SMIF–TN-Phase-II-Part-1 program is ₹ 578.16 crore (Euro 80 million). The project implementation period of the program is between December 2012 and June 2018. The assistance will be provided both as a loan and

capital grant to the ULBs for implementing their urban infrastructure projects.

The total outlay of the SMIF–TN-Phase-II-Part-2 program is ₹ 877.39 crore (Euro 107.75 million), of which ₹ 814.30 crore (Euro 100 million) will be provided both as loan and capital grant to ULBs for implementing their urban infrastructure projects. A sum of ₹ 22.39 crore (Euro 2.75 million) has been allotted for enhancing the technical capabilities of the ULBs. A sum of ₹ 40.70 crore (Euro 5 million) has been earmarked as loan for Water and Sanitation Pooled Fund to facilitate the mobilization of resources from the capital market by issue of Municipal bonds. The project implementation period of the program is between June 2014 and December 2019.

The funding assistance of ₹ 1,389.53 crore has been committed to 33 projects under the SMIF-TN-II-part-1 and part-2 programmes.

7.2.2 World Bank assisted Tamil Nadu Sustainable Urban Development Project (TNSUDP)

The “Tamil Nadu Sustainable Urban Development Project (TNSUDP)” assisted by the World Bank was launched in March 2015 with an outlay of ₹ 3,831 crore (US\$ 600 million), of which the World Bank assistance is ₹ 2,554 crore (US \$ 400 million), with the contribution of the State Government and other sources being ₹ 1,277 crore (US \$ 200 million). The project implementation period is between June 2015 and March 2022. The funding assistance of ₹ 2,483.75 crore has been committed for 16 projects under TNSUDP.

7.2.3 Tamil Nadu Urban Flagship Investment Program (TNUFIP) assisted by Asian Development Bank (ADB)

It was proposed to the Government of India for seeking financial assistance from Asian

Development Bank (ADB) for the newly proposed Tamil Nadu Urban Flagship Investment Program (TNUFIP) with a total outlay of ₹ 4,790 crore (US \$ 715 million) – out of which ADB’s assistance will be about ₹ 3,350 crore (US \$ 500 million). The Government of India has accepted and recommended the proposal to ADB in November 2016.

This program will be implemented in three phases. The estimated outlay for phase-1 will be about ₹ 3,066 crore (US \$ 477 million) - out of which ADB’s assistance amounts to ₹ 1,099 crore (US \$ 171 million). The appraisal for phase-1 of this program has been completed in October 2017 by ADB. The loan agreement for funding is expected to be executed during the financial year 2018-19.

7.3 Water and Sanitation Pooled Fund (WSPF)

Water and Sanitation Pooled Fund (WSPF) has been created by the Government of Tamil Nadu as a trust to cater to civic infrastructure needs like water and sanitation in small and medium towns by raising resources from capital markets. This trust has been created as a not-for-profit entity.

The objectives of WSPF are:

- To provide financial assistance for setting up infrastructure projects,
- To mobilize resources from the capital market under the pooled finance structure,
- To facilitate the participation of private sector in water and wastewater sectors through direct investment and public private partnership,

- To enable urban local bodies to access debt finance from markets and
- To act as the Nodal Agency on behalf of central and / or state Government for water, sanitation and / or any other infrastructure projects.

A sum of ₹ 80 crore has been mobilized during the financial year 2017-18 by issue of taxable pooled bonds under the SMIF-TN-II-2 Programme. Thus far, a total of ₹ 302.30 crore have been mobilized via taxable and tax-free bonds by WSPF as given below:

Sl.No.	Details	₹ crore
1	<p>9.20%, 15 year Non-Convertible Redeemable Bonds Taxable bonds issued by pooling the requirements of 13 ULBs in the year 2002.</p>	30.41

2	<p>7.25%, 10 year Tax Free Non-Convertible Redeemable Bonds under PFDF Scheme</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>7.50%, 10 year Tax Free Non-Convertible Redeemable Bonds under PFDF Scheme</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>10.60%, 10 year Non-Convertible Redeemable Bonds</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>8.71%, 10 year Non-Convertible Redeemable Bonds</p> <p>Taxable bonds (second tranche) issued by pooling the</p>	51.00

	requirements of 10 ULBs in the year 2013 under SMIF-TN Program	
6	8.25%, 12 year Non-Convertible Redeemable Bonds Taxable bonds issued by pooling the requirements of 4 ULBs in the year 2017 under SMIF-TN-II-2 Program	80.00
	Total	302.30

7.4 Chennai Mega City Development Mission

The Government launched the Chennai Mega City Development Mission (CMCDM) to provide funds to Greater Chennai Corporation and Chennai Metropolitan Water Supply and Sewerage Board to implement various urban infrastructure and basic service projects like roads, storm water drains, street lighting, water supply and sanitation in Chennai and its suburban areas. The fund is provided through budgetary provision every year by the

Government. The Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) has been designated as the nodal agency for CMCDM. A sum of ₹ 2500 crore has been allotted to implement the scheme from 2011 to 2018.

The capital grant assistance of ₹ 2,492.10 crore as well as the technical grant assistance of ₹ 7.90 crore have been fully committed under this mission, to implement projects costing ₹ 3,209.16 crore. A sum of ₹ 1,981.83 crore has been disbursed to both Greater Chennai Corporation, Chennai Metropolitan Water Supply and Sewerage Board and for consultancy and fees.

The scheme has been re-launched and a sum of ₹ 500 crore has been allocated in the budget 2018-2019

7.5 Technical Assistance – Feasibility study of reuse of waste water

Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) through the Project Development Grant Fund of the Government has entrusted the work of preparing a “Feasibility report for setting up of a wastewater reuse grid and preparation of a policy framework for the State of Tamil Nadu” to M/s. Tamil Nadu Water Investment Company Ltd. The main objectives of the study is to estimate the availability of wastewater for reuse and prepare a statewide policy framework for recycling and reuse of the wastewater generated for various users including industrial and agricultural purposes.

8. Chennai Rivers Restoration Trust

Chennai Metropolitan Area is endowed with various water bodies along with three east flowing rivers, namely Cooum, Adyar and Kosasthalaiyar. After meandering through the city, these rivers finally drain into the Bay of Bengal. A major canal namely, Buckingham Canal traverses parallel to the coast and has considerable importance in shaping the aquatic environment of the Chennai city. Due to rapid urbanization, lakes and rivers within Chennai city have been adversely affected due to the instances of dumping of solid waste and disposal of wastewater and also due to lack of awareness regarding the value of water bodies and rivers as a critical lifeline for any urban community.

The Government of Tamil Nadu has set up the Chennai Rivers Restoration Trust with the primary task of identifying, planning, coordinating and monitoring the restoration

activities of ecological condition of rivers and water bodies within the Chennai Metropolitan area. To this end, the Chennai Rivers Restoration Trust has undertaken various eco-restoration projects, integrating the activities of various line departments in achieving this goal.

8.1 Eco-Restoration of Adyar Creek - 58 acres

The Government of Tamil Nadu initiated the first urban wetland conservation programme in 358 acres of Adyar creek and estuary. Phase-I involved the undertaking of restoration activities in 58 acres of Adyar creek. Adyar creek was once used as a place for disposal of sewage, municipal solid waste and construction debris which led to the degradation of surface and ground water quality and adverse effect on the habitats of avian fauna, reptiles and fishes. The creek was infested with exotic species of *Prosopis juliflora*, mosquitoes and bad odour,

which had led to the nearby communities keeping away from the area.

The following are the major restoration activities undertaken and completed in two years:

- (i) Increasing the water spread and the tidal interaction area
- (ii) Plantation of native plants such as tropical dry evergreen forest species, mangroves and its associates, reeds, etc.,
- (iii) Landscaping for interactive environmental programmes.

The Adyar eco - park is today functioning as a fulcrum for environmental education and research. Students from various schools and colleges across the city regularly attend the environmental awareness programmes which impart knowledge of the coastal wetland

ecosystem. As on 20th May, 2018, a total of 71,039 students and 3943 teachers from 939 schools have visited the eco-park and experienced the concept of eco-restoration. Every year, Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) contributes its Corporate Social Responsibility (CSR) funds for conducting environmental education programmes at the Adyar eco-park.

The eco-park is open to the interested general public on all Tuesdays, Thursdays and Saturdays. It showcases the efforts taken by the Government in the field of conservation and protection, and to impart environmental awareness to the general public. So far, between July, 2014 and 20th May, 2018 a total of 6655 visitors have visited the Eco-park.

In order to evaluate the impact and success of the restoration activities, regular ecological and biodiversity monitoring is being

taken up. The restoration process of Adyar eco-park has to comply with Designated-Best-Use Class 'D', which, according to the Central Pollution Control Board (CPCB) guidelines, would allow propagation of wildlife and fisheries. The results indicate that the current water quality is indeed in class 'D' - Designated-Best-use that allows the propagation of wildlife and fisheries.

Faunal Diversity in Adyar Eco-Park

Fauna	2007 -08	2009-10	2011 -12	2013 -14	2014 -15	2015 -16	2016 -17	2017-18
Molluscan	-	-	-	6	6	6	8	8
Crabs	-	-	4	9	9	9	9	13
Insects								
a) Dragonflies	-	-	12	15	17	19	25	25
b) Butterflies	-	-	51	55	56	60	73	73
c) Other insects	-	-	-	-	-	-	-	52
Fishes	14	27	27	10	10	6	10	10
Amphibian	7	10	10	10	10	10	10	10
Reptiles	19	19	19	19	19	19	19	19

Birds	88	90	98	100	97	99	103	105
Mammals	13	13	13	15	15	16	16	16
Total	141	159	234	239	239	244	273	331

8.2 Eco-Restoration of Adyar Estuary

An extent of 300 acres of Adyar creek, estuary, islets, mudflats and surrounding areas were covered with exotic species like *Prosopis juliflora*, with instances of disposal of sewage, solid waste and debris, all of which had contributed to the severe degradation of the estuarine ecosystem and which subsequently resulted in the shrinking of the water spread area, reduced tidal interaction and adverse effect on biodiversity.

To improve the bio-diversity of the Adyar creek and estuary, major restoration works were taken up like removal of exotic and invasive species *Prosopis juliflora*, followed by bund stabilization. Removal of debris and plastics to enhance tidal interaction and to increase the

water spread in the degraded creek has also been undertaken. Around 57000 mangroves and 35000 terrestrial saplings have been planted. All the proposed restoration activities have been fully completed in October, 2016 and regular maintenance work is being carried out.

8.3 Integrated Coom River Eco-Restoration Project

The Coom river originates from the surplus course of Coom tank in Tiruvallur district. It runs east for a distance of about 70 kilometers and confluences with the Bay of Bengal, south of Fort St. George, just downstream of Napier bridge.

The eco-restoration plan covers the stretch of about 32 km from Paruthipattu checkdam to the river mouth in the Bay of Bengal with the major components proposed being, interception and diversion of wastewater, solid waste management, river channel improvement, rehabilitation and resettlement, biodiversity management and riverfront development.

This eco-restoration river project is proposed to be implemented in three phases. The short term plan covers a period of three years, which includes the largest number of sub-projects. The Government of Tamil Nadu accorded administrative sanction to the Chennai Rivers Restoration Trust for implementing sixty (60) sub-projects committed under phase-I at an estimated cost of ₹ 604.77 crore.

Work on the sub-projects has been initiated by the concerned line departments and is under various stages of implementation. Fixing of boundary stones, desilting and formation of baby canal by Public Works department, solid waste removal, fencing, boom deployment, developing parks, cycle tracks and walkways by the Greater Chennai Corporation, removal of solid waste, fencing and vegetation along the banks by Commissionerate of Municipal Administration and Directorate of Rural

Development and Panchayat Raj in their respective areas; laying interceptor pipelines, installing modular sewage treatment plants and underground sewerage system (UGSS) by Chennai Metropolitan Water Supply and Sewerage Board, Resettlement and rehabilitation of project affected families (PAFs) by the Tamil Nadu Slum Clearance Board. The Chennai Rivers Restoration Trust, as the nodal agency entrusted with the effective implementation of the project, has appointed a Project Management Consultant (PMC) to monitor the sub-projects being executed by line departments. CRRT is also vested with mangrove development, flora plantation and conducting community education programmes.

Out of ₹ 604.77 crore, works worth ₹ 199.40 crore have been initiated. Letters of Acceptance have been issued by the line departments for works worth ₹ 33.95 crore.

Tender process for projects worth ₹ 132.49 crore has also been initiated. So far, ₹ 134.44 crore have been disbursed to the implementing agencies.

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

The Adyar river originates at the Adhanur lake near Guduvancheri and near Thiruneermalai, it receives surplus water from Chembarambakkam tank and joins the Bay of Bengal at the Adyar estuary. The 42 km long river flows through Kancheepuram and Chennai Districts, which contributes to the estuarine ecosystem of Chennai.

In the recent past, Adyar river has also been adversely affected due to rapid urbanization leading to natural and anthropogenic disturbance. The eco-restoration 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 Government has accorded administrative sanction approving allocation of ₹ 555.46 crore for this project.

The respective line departments viz., Public Works Department, Greater Chennai Corporation, Commissionerate of Municipal Administration, Directorate of Town Panchayats, Directorate of Rural Development and Panchayat Raj, Chennai Metropolitan Water Supply and Sewerage Board, Tamil Nadu Slum Clearance Board and Chennai Rivers Restoration Trust have commenced the implementation of the sub-projects.

A consultant is appointed for the preparation of Rapid Environment Impact Assessment report for obtaining the Coastal Regulation Zone Clearance (CRZC) from SCZMA for 15 sub-projects which fall within CRZ area

(from river mouth to Saidapet bridge – 7.5 kms). A Project Management Consultant has also been appointed for monitoring the implementation of 55 sub-projects by various line departments.

8.5 Detailed Project Report for Restoration and Protection of Water Bodies and Waterways

As part of the ongoing eco-restoration initiatives of the Government of Tamil Nadu, Detailed project reports are being prepared to revive and rejuvenate the following water bodies and waterways in Chennai Metropolitan Area:

1. Detailed project report for plugging of outfalls, interception & diversion of sewage, solid waste management and rehabilitation and resettlement (R&R) in major drains in Cooum basin.
2. Preparation of detailed project report for plugging of outfalls, interception and diversion of sewage, solid waste

management and R&R in major drains in Adyar basin.

3. Preparation of detailed Project report (DPR) for restoration of the Buckingham canal in Chennai Metropolitan Area from Ennore creek to Muttukadu backwaters and all major drains draining into the Buckingham canal.
4. Preparation of comprehensive master plan and detailed project report (DPR) for the Eco-restoration of Kovalam creek.
5. Preparation of comprehensive master plan and Detailed project report (DPR) for the eco-restoration of Ennore creek.
6. Preparation of Detailed project report (DPR) for the eco-restoration and protection of Peerkankaranai lake in Chennai Metropolitan Area.

9. Tamil Nadu Urban Finance and Infrastructure Development Corporation Limited

The Government of Tamil Nadu has created Tamil Nadu Urban Finance and Infrastructure Development Corporation (TUFIDCO) on 21.03.1990. Since its inception, TUFIDCO has played pivotal role in the overall development of Urban Local Bodies by providing financial and technical assistance. Beside this, TUFIDCO has been a nodal agency for various Government of India and Government of Tamil Nadu's programme viz., Jawaharlal Nehru National Urban Renewal Mission – Urban Infrastructure and Governance (JnNURM-UIG), Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT), Urban Infrastructure Development Scheme for Satellite Towns (UIDSST), Metropolitan Infrastructure Development Fund (MIDF) and Integrated Urban Development Mission (IUDM).

The other core functions performed as fund manager are Capital Grant Fund (CGF) and Operation and Maintenance Gap Filling Fund (OMGFF).

TUFIDCO is designated as Mission Directorate for Government of India's flagship programmes, namely Smart Cities Mission and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) from 2015 onwards.

9.1 SMART CITIES MISSION

Smart Cities Mission aims to use information and communication technologies and other means to improve quality of life, efficiency of urban operations, services and competitiveness, while ensuring that it meets the needs of the present and future generations with respect to economic, social and environmental aspects. The Government of India selected 99 cities through competition to be

developed as “Smart Cities” in which 11 cities are selected from Tamil Nadu. The selected Smart Cities are Chennai, Coimbatore, Madurai, Thanjavur, Salem, Vellore, Tiruppur, Tuticorin, Tirunelveli, Tiruchirappalli and Erode.

The implementation of the mission is done by a Special Purpose Vehicle (SPV) set up at city-level in the form of a limited company and are promoted by the state and the urban local body (ULB) jointly both having 50:50 equity shareholding. Under the scheme, each city to get ₹ 500 crore as central assistance and ₹ 500 crore as state grant for implementing various projects.

A total investment of ₹ 11,394.13 crore has been proposed in these cities 11 cities under their smart city plans as given below:

SI No.	City	No. of Projects	Project Cost (₹ in crore)
1	Chennai	36	1,047.86
2	Coimbatore	23	1,127.72
3	Madurai	16	1,000.00
4	Thanjavur	19	955.01
5	Salem	22	1,418.32
6	Vellore	21	983.44
7	Tiruppur	19	1,003.98
8	Thoothukudi	21	743.60
9	Tirunelveli	30	986.18
10	Tiruchirapalli	18	1,193.08
11	Erode	17	934.94
	Total	242	11394.13

9.2 Atal Mission For Rejuvenation and Urban Transformation (AMRUT)

Atal Mission for Rejuvenation and Urban Transformation (AMRUT) scheme, launched on 25th June 2015 in 500 cities, is aimed at providing basic services to households and build amenities in cities to improve the quality of life, especially the poor and the disadvantaged. AMRUT focuses on ensuring water supply, sewerage and septage management, storm water drainage, urban transport and availability of green and open spaces.

12 Municipal Corporations, 15 Municipalities and 1 Town Panchayat (28 towns/ cities) had been identified for funding under AMRUT as given below:

Sl. No.	Name of the ULBs	Sl. No.	Name of the ULBs
1.	Greater Chennai Corporation	15.	Tambaram Municipality
2.	Coimbatore Corporation	16.	Cuddalore Municipality
3.	Madurai Corporation	17.	Kancheepuram Municipality
4.	Tiruchirappalli Corporation	18.	Avadi Municipality
5.	Salem Corporation	19.	Tiruvannamalai Municipality
6.	Tirunelveli Corporation	20.	Kumbakonam Municipality
7.	Tiruppur Corporation	21.	Rajapalayam Municipality
8.	Thoothukudi Corporation	22.	Pudukottai Municipality
9.	Thanjavur Corporation	23.	Hosur Municipality
10.	Erode Corporation	24.	Ambur Municipality
11.	Vellore Corporation	25.	Karaikudi Municipality
12.	Dindigul Corporation	26.	Nagapattinam Municipality
13.	Nagercoil Municipality	27.	Rameswaram Municipality
14.	Pallavapuram Municipality	28.	Velankanni Town Panchayat

9.2.1 Financial Pattern

The project cost sharing between the Government of India, the State Government and ULBs are given below:

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

The Government of India has sanctioned 445 projects worth of ₹ 11,672.68 crore. Out of sanctioned projects, 159 projects have been completed and the remaining 286 projects are in various stages of implementation.

The details of projects sanctioned under SAAP-I (2015-16), II (2016-17) and III (2017-20) are as follows

STATE ANNUAL ACTION PLAN- I (2015-16)

SI No	Name of the ULB	Name of the Project	Project Cost (₹ in crore)
1	Ambur Municipality	Improvement in Water Supply Distribution System	50.90
2	Coimbatore Corporation	Improvement of Water Supply Distribution System to Extended Areas(Thudiyalur, Vellaikinaru, Chinnavedampatti, Saravanampatti, Vilankurichi, Kalapatti, Kuniyamuthur & Kurichi)	395.41
3	Erode Municipal Corporation	Dedicated Water Supply Scheme	484.45
4	Hosur Municipality	Improvement of Water Supply Distribution System	87.91
5	Nagercoil Municipality	Water Supply Improvement Scheme	223.44
6	Rajapalayam Municipality	Water Supply Improvement Scheme	180.05

7	Thanjavur Municipal Corporation	Improvement of Water Supply	48.14
8	Tiruppur Municipal Corporation	Improvement to Water Supply Distribution System to the added areas	250.00
9	Vellore Municipal Corporation	Improvement to Water Supply Distribution System	234.93
10	Chennai	Water Supply Source Improvement Works to Velachery, Alandur, Ullagaram Puzhuthivakkam, Medavakkam, Kovilambakkam, Nanmangalam and Moovarasampettai	954.00
11	Velankanni Town Panchayat	Underground Sewerage Scheme	23.32
12	Chennai Corporation	45 MLD TTRO Plant - Kodungaiyur	223.91
13	Pallavaram Municipality	Underground Sewerage Scheme for left out areas	25.37
14	25 AMRUT Cities	Parks – 98 Nos	63.67
		Total	3245.50

STATE ANNUAL ACTION PLAN -II (2016-17)

SI No	Name of the ULB	Name of the Project	Project Cost (₹ in crore)
1	Coimbatore Corporation	24 x 7 water supply	506.04
2	Chennai	Water supply scheme to added areas (Uthandi, Jalladampettai, Mathur, Madipakkam and Neelangarai)	184.11
3	Chennai	Water supply Source Improvement	125.89
4	Kumbakonam Municipality	Distribution System Improvement	40.50
5	Coimbatore Corporation	Underground Sewerage at Coimbatore	442.00
6	Vellore Municipal Corporation	Underground Sewerage Scheme - Phase I	248.26
7	Vellore Municipal Corporation	Underground Sewerage Scheme - Phase II	343.69
8	Chennai	Underground Sewerage Scheme to Added Areas (Manali, Chinna sekkadu, Karambakkam, Manapakkam)	223.00

9	Chennai	45 MLD TTRO Plant at Koyambedu	394.00
10	Kumbakonam Municipality	Underground Sewerage Scheme to left out areas	59.84
11	Tiruchirappalli Municipal Corporation	Underground Sewerage Scheme - Phase I	344.00
12	Tirunelveli Municipal Corporation	Underground Sewerage Scheme to Added Areas	289.01
13	Tirunelveli Municipal Corporation	Underground Sewerage Scheme Phase II	381.86
14	Rameshwaram Municipality	Underground Sewerage Scheme	40.33
15	25 AMRUT Cities	Parks - 157 Nos	77.95
		Total	3700.48

STATE ANNUAL ACTION PLAN - III
(2017-20)

SI No	Name of the ULB	Name of the Project	Project Cost (₹ in crore)
1	Coimbatore Corporation	Pillur III Water supply	649.30
2	Madurai Municipal Corporation	Dedicated Water Supply Scheme	1128.00
3	Tiruppur Municipal Corporation	Water supply - Source Improvement	992.94
4	Chennai	Distribution System Improvement - Valasaravakkam	67.74
5	Ambur Municipality	Underground Sewerage Scheme	129.07
6	Rajapalayam Municipality	Underground Sewerage Scheme	178.75
7	Tiruppur Municipal Corporation	Underground Sewerage Scheme	525.92
8	Chennai	Underground Sewerage Scheme	700.00

9	Tiruchirappalli Municipal Corporation	Underground Sewerage Scheme - Phase -II	264.12
10	25 AMRUT Cities	Parks - 154 Nos	90.85
		Total	4,726.69

9.3 Metropolitan Infrastructure Development Fund (MIDF)

Metropolitan Infrastructure Development Fund (MIDF) has been set up in TUFIDCO from Mega City Scheme revolving fund for sanctioning of projects in Chennai Metropolitan Area. A state level sanctioning committee of the MIDF scheme had approved 34 projects worth of ₹ 4,342.65 crore and the contribution through MIDF was to the tune of ₹ 1,156.47 crore. The amount is given as soft loans to the ULBs / para-statal agencies. Out of 34 projects sanctioned, 26 projects have already been completed. The remaining 8 projects are under various stages of implementation.

9.4 TUFIDCO Infrastructure Funding Scheme

TUFIDCO has created an Infrastructure Funding Scheme to supplement Government support programme and Medium-to-long term lending to finance infrastructure projects in Urban Local Bodies and Government Agencies. The source of funds for this scheme is from share capital, reserves & surplus and loans from Banks.

During the year 2017-18, 3 projects have been sanctioned at a cost of ₹ 96.21 crore.

9.5. Integrated Urban Development Mission (IUDM)

The state flagship programme, Integrated Urban Development Mission launched during 2011-12 aims to improve basic infrastructure like roads, drinking water supply, street lights, sewerage, storm water drains, sanitation, solid waste management, improvement of bus stands

and parks in all Corporations (Except Chennai), Municipalities and Town Panchayats. To address the infrastructure needs of the urban local bodies, 13,445 projects at the estimated cost of ₹ 10,773.22 crore were sanctioned (fully funded/partly funded). The details are as follows:-

Sector	Total No. of works	₹ in crore)		
		Project cost	ULB Share / Others	IUDM Share sanctioned
Water Supply	1061	3900.83	2558.47	1342.36
Sewerage	66	4589.96	3587.92	1002.04
Roads	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
Total	13445	10773.22	6725.03	4048.19

Out of 13445 projects sanctioned, 13169 projects have been completed. The remaining projects are under implementation. IUDM has been re launched during 2018-2019 and allocation of ₹ 750 crore is made in the budget.

9.6 Fund Manager for the State Government Schemes

The Government of Tamil Nadu has established a Capital Grant Fund (CGF) and Operation and Maintenance Gap Filling Fund (O&MGFF) with the aim to improve Infrastructure facilities in Urban Local Bodies. The Government has appointed TUFIDCO to manage the fund for the above mentioned scheme.

Based on the Government sanction, an amount of ₹ 315.01 crore has been released under CGF and ₹ 125.04 crore under O&MGFF in the year 2017-18.

10. New Tirupur Area Development Corporation Limited

New Tirupur Area Development Corporation Limited (NTADCL) was formed in 1995 by the erstwhile Tamil Nadu Corporation for Infrastructure Development (TACID). NTADCL was reorganized as a Special Purpose Vehicle (SPV) for the first public private partnership water supply and sewerage project in India on 20.06.2002 to cater to the water supply and sewerage infrastructure needs of Tirupur and adjacent areas. The SPV was promoted by Tamil Nadu Water Investment Company Limited (TWIC) which was formed with 54% equity of Infrastructure Leasing & Financial Services (IL&FS) and 46% equity of Government of Tamil Nadu.

A concession agreement was signed between the Government of Tamilnadu, Tirupur Municipality (now Corporation) and New Tirupur

Area Development Corporation Limited to implement a 185 million litre per day (MLD) water supply project expandable up to 250 MLD. The project was implemented at a cost of ₹ 1023 crore with contribution from 15 institutions towards equity of ₹ 322.70 crore, senior debt provided by a consortium of 19 banks and financial institutions to the tune of ₹ 613.80 crore and subordinate debt of ₹ 86.50 crore.

The project provides 38.957 MLD of drinking water to Tirupur Corporation and 18.26 MLD of drinking water to 8 Village Panchayats and about 600 wayside rural habitations in 5 Panchayat Unions. Apart from this, the project caters to the water supply requirements of a number of hosiery and related dyeing and processing industries in and around Tirupur. A domestic sewerage system in major parts of Tirupur corporation has also been

completed and functioning with 15 MLD capacity currently collecting up to 8 MLD of sewage from 15,246 sewer connections for treatment. Low Cost sanitation facilities through 31 sanitary complexes have also been provided for the urban poor. The water supply project has been supplying water to Tirupur Corporation and waterside villages since October 2005.

The cross-subsidization model of the project was severely impacted by the closure of dyeing and bleaching industries due to Hon'ble Madras High Court Order dated 30.01.2011 and subsequent introduction of common effluent treatment facilities resulting in the re-use of water, the industrial demand for water in Tirupur has substantially reduced since February 2011. As a result, NTADCL had suffered severe loss of business, thereby facing difficulties in meeting its debt service obligations to banks and financial institutions. The poor financial situation

of New Tirupur Area Development Corporation Limited, resulting from low off take of water by industries, was tackled in 2011-12 through a Corporate Debt Restructuring (CDR) package, under which the lenders rescheduled the debt, reduced the interest rate and converted 15 percent of the debt into equity. Further, the Government granted a capital infusion by way of equity share capital of ₹ 150 crore and assured to buy up to 100 MLD of water additionally for domestic usage from the company. Presently, around 54 MLD of water is being supplied additionally to Tiruppur Corporation and 11 MLD to wayside villages.

In order to enable NTADCL to be commercially more viable, the Government of Tamil Nadu has permitted the company to expand its water supply infrastructure in selected areas outside Tirupur Local Planning Area (TLPA). As a result, the Company could

identify customers in Palladam in Tiruppur district and Perundurai in Erode district. Apart from this, TWAD Board has implemented three schemes to cover 461 habitations under 68 Village Panchayats in Erode, Perundurai, Chennimalai and Uthukuli Panchayat unions of Erode and Tiruppur districts. These schemes are implemented in Konavaikal, Gangapuram, Vavikadai, Saralai, Perundurai, Vijayamangalam, Pallagoundanpalayam, Chengappalli, Sarkarperiapalayam and Agarharaperiapalayam resulting in additional domestic consumption of around 11 MLD. Hence 65 MLD of water is being supplied additionally for domestic usage in Tiruppur Corporation and wayside villages.

The industrial / institutional water supply is currently around 40 MLD and is gradually improving.

NTADCL was able to revive itself and turn profitable from 2015-16 onwards in view of

assistance provided by the Government of Tamil Nadu in the form of equity capital infusion, purchasing additional quantities of water of around 65 MLD by Tiruppur Corporation and other local bodies and the decision of allowing the company to meet the industrial demand outside the Tirupur Local Planning Area (TLPA) by increasing the project service area.

NTADCL has assisted Tirupur Corporation in preparing a Detailed Project Report (DPR) to further augment the water supply and sewerage facilities in Tirupur Corporation and these DPRs have been sanctioned as part of the AMRUT scheme.

11. Tamil Nadu Water Investment Company Limited

The Tamilnadu Water Investment Company was established as a Special Purpose Vehicle (SPV) to promote the first Public, Private Partnership in the water sector, namely New Tirupur water project (185 MLD, ₹ 1,023 crore). The company has two shareholders, namely the Government of Tamil Nadu and Infrastructure Leasing and Financial Services Limited (IL&FS).

Over the years, the company after successfully completing the New Tirupur Project, has been in the forefront by bringing in initiatives both in the urban water space as well as management of industrial effluent and desalination in Tamil Nadu. The Government of Tamil Nadu has nominated Principal Secretary (Municipal Administration and Water Supply

department) as its Chairman and have senior government officials representing Environment & Forest, Industries and Finance Department as Directors in the board. The Company has got twelve directors out of which four are independent directors and the day to day operations are handled by Chief Executive Officer under the directions of the Board. The company has specialized in providing end to end solutions through a comprehensive understanding, selection of technology, design development, bidding management and supervision of implementation and Operations and Maintenance. The Company has a sustainable revenue model and quality manpower to support the policy initiatives of the Government such as the urban water supply, waste water recycling, desalination and industrial cluster projects.

The Government of Tamil Nadu under Section 16 (f) of Tamil Nadu Transparency in Tenders Act, 1998 has exempted M/s.Tamil Nadu Water Investment Company Ltd (TWIC) from the Tender process for procurement of consultancy and financial services vide notification No.333 published in Tamil Nadu Government Extra ordinary Gazette on October 17, 2017.

New Tirupur Area Development Corporation Limited is promoted by Tamil Nadu Water Investment Company Limited (TWIC). Government of Tamil Nadu holds 46 % of the share capital in the TWIC.

The Company has developed three main Strategic Business Units (SBU) for the budget of the year 2018-19. The broad areas of business are as under:

- a. Industrial effluent, water re-cycling and Operations and Maintenance of industrial plants.
- b. Urban water / wastewater systems, desalination, municipal sewage recycling and water body restoration and smart city solutions.
- c. Capacity building and training.

11.1 Water Reuse – Strategic Business Unit

The company has established leadership in the areas of industrial effluent treatment and urban water management. The company's main revenue comes primarily from the Operation and Maintenance business and the consultancy business offered throughout the country. The Company has a strength of 400 employees and have recently secured the operation and

maintenance of Eastern Common Effluent Treatment Plant (CETP), Tirupur and Rohini Textiles, Perundurai. In addition, the company continues to operate seven other Common Effluent Treatment Plants (CETP) at Tirupur under 15 year Operations and Maintenance contract.

The consultancy business has grown during the last year in the industrial segment and the company has secured orders from Ichalkaranji Textile Cluster, Caustic recovery plant Bituja, Rajasthan and TNPL. In the water re-use (SBU) the company continues its services to NMCG (National Mission for Clean Ganga), Telengana State Industrial Investment Corporation, Indrakaran Project and other customers.

11.2 Urban Water – Strategic Business Unit

The Urban Water (SBU) also continues to grow significantly. The company has recently

obtained a large number of new orders from various agencies in Tamil Nadu, Gujarat and Maharashtra. In addition, the Company has been engaged as Project Management Consultancy by Chennai Metro Water Supply and Sewerage Board for construction of TTRO plants at Kodungaiyur and Koyambedu.

The company is at the forefront of technology innovation and recently been recognized by the Indo-German Science and Technology Centre (IGSTC) supported by the Government of India and the Government of Germany. The company is receiving financial support from the above organizations for the development of smart tools for water and waste water and will also be the joint owner of Intellectual Property Rights along with the Indian Institute of Technology, Madras and the German Institute.

The turnover of the Company has grown from ₹ 28 crore to ₹ 35 crore for the year 2017-18. The turnover of the company is expected to grow from ₹ 35 crore to ₹ 44 crore in the year 2018-19.

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