



LAKE REJUVENATION - COIMBATORE



FRUIT MARKET - MADURAI



CYCLE SHARING - CHENNAI



SENSORY PARK - CHENNAI

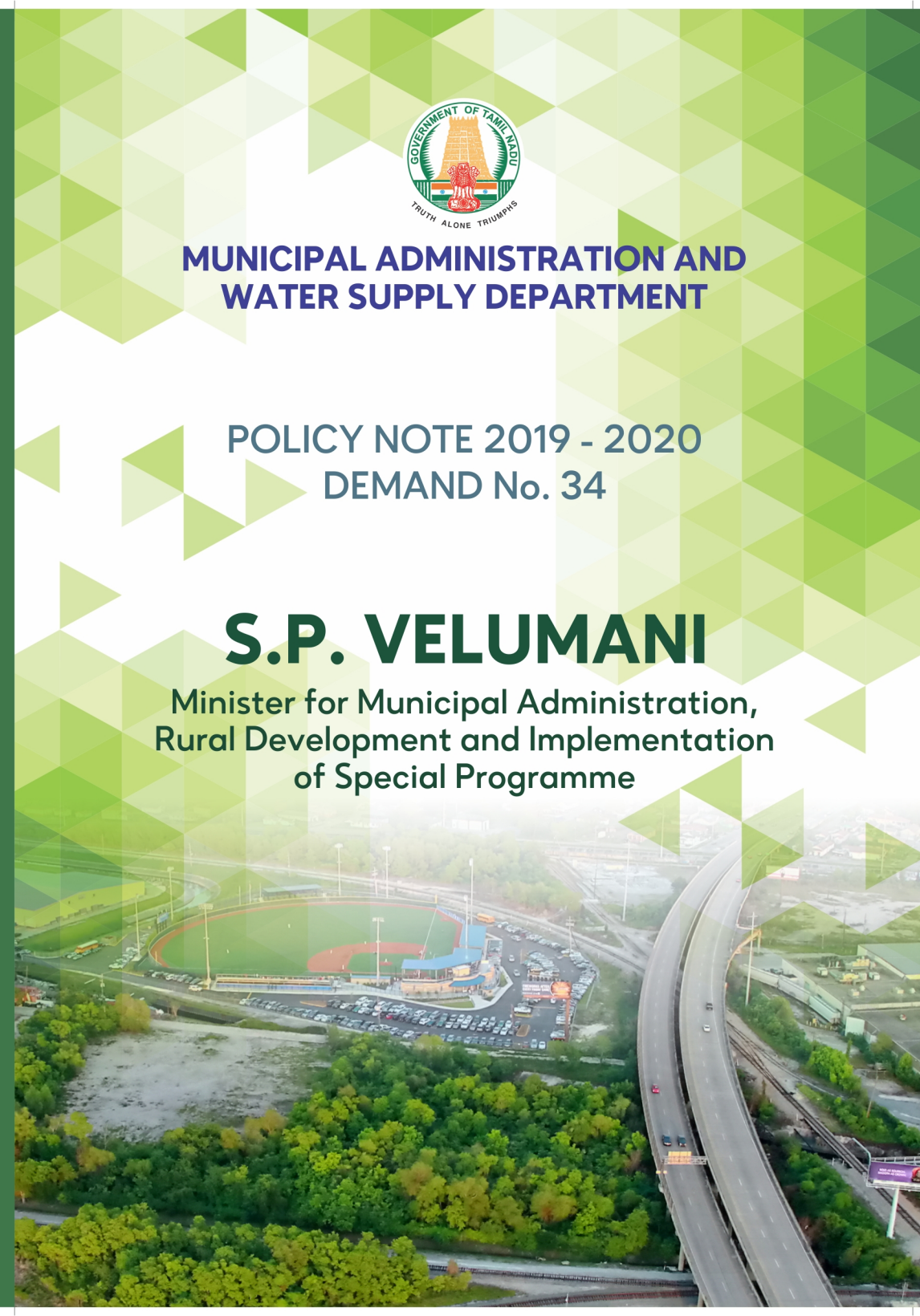


## MUNICIPAL ADMINISTRATION AND WATER SUPPLY DEPARTMENT

POLICY NOTE 2019 - 2020  
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 – 2019-2020**

### **1 Introduction**

Urbanization is a worldwide phenomenon. It is a process of relative growth in a country's urban population accompanied by economic, political and cultural transformation. It refers to population shift from rural farmlands to urban areas and describes an increase in "urban population" and "extent of urban areas" linked with increased per capita energy and resource consumption. Urban areas are generally determined by better infrastructure amenities, education and job opportunities, advanced medical facilities, enhanced opportunities for cultural and political participation. In most countries, it is a natural consequence and stimulus of economic development from industrialization and post-industrialization era.



The world currently is undergoing the largest wave of urban growth in history. More than half of the world's population now lives in towns and cities, and by 2030 urban population is expected to swell to about 5 billion. Much of this urbanization is expected to unfold in third world countries, bringing huge social, economic and environmental transformation. While urbanization holds great potential to usher in a new era of well-being, resource efficiency and economic growth, it also spurs a unique set of challenges and issues such as poverty, rise in slum settlements and rise in pollution levels. Strong city planning will be essential in managing the above issues and other difficulties as the world's urban areas swell.

## **1.1 Global Urbanization Trends**

Global urbanization trends have witnessed significant changes in the last century. More than one half of the world population now lives in urban areas, and virtually all countries of the world are becoming increasingly urbanized. According to UN World urbanization prospects, 30% of the World's population was urbanized in 1950 which increased to 54% by 2016 and is expected to

reach 68% by 2050. By 2050, two in every three people are expected to live in urban areas / cities. With increase in cities of 10 million and higher size, new 'mega cities' are being formed. Their major concentration is in the less-developed regions. There were around 10 megacities (with 153 million populations) in 1990 which increased to 28 Mega Cities (with 453 million populations) in 2014 comprising of 12% world's urban population.

High-income countries and those of Latin America and the Caribbean already have a large proportion of their population residing in urban areas and have recorded a relatively slower growth as more than 50% of their population was already residing in urban areas by mid-twentieth century. Whereas Africa and Asia, still mostly rural are urbanizing faster than other regions. Currently, India and China are the most densely populated countries in the world. Among these, Shanghai (26 million) and Beijing (22 million) are mega cities in China; whereas Delhi (29 million) and Mumbai (over 20 million) are mega cities in India. According to 2010 world population, Asian megacities comprised of 60% of world megacities population. The fastest growing urban

agglomerations are medium-sized cities with less than 1 million inhabitants which are also located in Asia and Africa.

Continuous population growth and urbanization are likely to add another 2.5 billion people to the world's urban population by 2050 with nearly 90% of the increase concentrated in Asia and Africa.

These trends are changing the landscape of human settlement, with significant implications for living conditions, the environment and development in different parts of the world. As the world continues to urbanize, cities shall have to be prepared to face various sustainable development challenges, particularly in the lower-middle-income countries including India where the pace of urbanization is fastest.

## **1.2 Urbanization Trends in India**

Population and economic growth have fostered urbanization in India in recent times resulting in a steep increase in the number of towns and cities. This growth is expected to continue in the years to come.

According to World Bank estimates, India will continue being the fastest growing major economy in the world, with 7.5% GDP growth predicted in the next two years. It is already one of the most foreign-investment destinations and is expected to become the third largest consumer economy by 2025. A young demographic base, growing income levels, expanding (globalized) middle-class and stable democracy has propelled India into the league of major global economic powers.

India's unique pattern of urbanization is not a corollary, but a driving force of this growth story. In India, urban areas contribute about two-thirds of its economic output and are the main recipients of Foreign Direct Investment.

India's urbanization had begun to accelerate after independence majorly with country's adoption of a mixed economy. The urban population in India increased from 11.4 % (as per 1901 census) to 31.16% (as per 2011 census).

There are several factors behind the high rates of urbanization in India. Population growth and migration were identified as the two major driving

factors. Recently, another factor i.e. high economic growth is also observed to be a major contributor towards the phenomenon of urbanization.

During 2001-2011, the number of Metropolitan Cities have risen sharply from 35 to 53 i.e. more than 1 million population. They now account for 42.6 percent of the total urban population. Likewise, class I cities (more than 1,00,000 population) now account for 70.2 percent of the country's urban population. In 2001, this percentage was 68 percent. According to a survey by UN State of the World population report, by 2030, 40.76% of country's population is expected to reside in urban areas.

The phenomenon of urbanization across India has made widespread impact touching almost every state. Investments in housing, road network, urban transport, water supply, power-related infrastructure and other forms of urban management have been major pulling factors causing migration of people from rural to urban India.



### **1.3 Urbanization trends in Tamil Nadu**

Tamil Nadu is at the forefront of urbanization with 48.45% of the state living in urban areas vis-à-vis the national average of 31%. The state is one of the most rapidly industrializing and urbanizing state and ranks first on share of urban population among large states in the country and ranks third in terms of absolute urban population. Urban population growth in the state (at 27 percent during 2001-11) outpaced rural population growth (6 percent during the same period).

As per 2011 Census data, Tamil Nadu has witnessed a higher degree of rural-urban migration in the last 10 years as compared to any other state. In Tamilnadu, out of the total state area of 130,058 sq. kms. 10,658.06 sq. kms. (8.1%) is coming under urban jurisdiction administered by Urban Local Bodies. The State is having a spatially dispersed pattern of urbanization with large number of small and medium towns dispersed across the state.

<b>State</b>	<b>Urban Population in lakhs</b>	<b>Percentage share of Urban Population to total Population</b>	<b>Rank</b>
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%	<b>1</b>
Uttar Pradesh	445	22%	9
Maharashtra	508	45%	2

In the last 20 years, implications of urbanization in the state have been well supported by initiatives of the Government of Tamil Nadu in coping up with the growing requirements of additional infrastructure.

By the year 2030, the percentage of urban population is estimated to be 67% which is expected to be the highest in the country. Such an increase is likely to result in increased pressure on the existing urban infrastructure services.

Other implications may include major policy and managerial challenges in coping with the increased demand for urban infrastructure and access to basic civic services.

Vision Tamil Nadu 2023 document sets a plan for infrastructure development for the State to reach the desired outcome/ vision by 2023. It majorly stresses on urban transportation, water and waste-water management, solid waste management, housing, including low income housing. The focus of suggested/proposed investments in urban infrastructure is on developing state-of art infrastructure, both physical and social, ensuring seamless connectivity between cities and the rest of the State.

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

Implications of rapid urbanization rate need to be effectively managed in order to ensure that the potential economic and social development is optimized to reduce poverty, improve quality of life and protect the environment.

The Municipal Administration and Water Supply Department is entrusted with the task of development and ensuring provision of infrastructure facilities in the state.

The Department is functioning with a mandate of improving the standard of living in urban areas and also improving access to public services for its people. Planning, financing, implementing and monitoring projects to attain service level benchmarks are the responsibilities of the department.

The department is also spearheading mobilization of financial resources to cope up with the Infrastructural requirements on several fronts. Sectoral focus under infrastructural requirements include water supply, roads, buildings, storm water drains, street lighting, solid waste management, sanitation, bus stands and commercial complexes.

Municipal Administration and Water Supply Department at present administering 15 Municipal Corporations, 121 Municipalities and 528 Town Panchayats.

The details of district wise Urban Local Bodies in the State are provided in the following table:

<b>S. No</b>	<b>Districts</b>	<b>Corpora-tions</b>	<b>Munici-palities</b>	<b>Town Panchay-ats</b>
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	1	3	55
10	Karur	0	2	11
11	Krishnagiri	1	1	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
17	Pudukkottai	0	2	8
18	Ramanathapuram	0	4	7
19	Salem	1	4	33
20	Sivagangai	0	3	12

<b>S. No</b>	<b>Districts</b>	<b>Corporations</b>	<b>Municipalities</b>	<b>Town Panchayats</b>
21	Thanjavur	1	2	22
22	Theni	0	6	22
23	Thiruvallur	1	4	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		15	121	528

The Departments and Organizations functioning under the 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 Limited (TWIC)

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

The Commissionerate of Municipal Administration is functioning under Municipal Administration and Water Supply Department. Its main domain is supervision and co-ordinating performance of all Municipal Corporations (except Chennai) and Municipalities.

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

14 Municipal Corporations viz. Madurai, Coimbatore, Tiruchirappalli, Tirunelveli, Salem, Tiruppur, Erode, Vellore, Thoothukudi, Dindigul, Thanjavur, Hosur, Nagarcoil and Avadi and 121 Municipalities are functioning under the Commissioner of Municipal Administration. All the Municipalities are classified into different grades

based on their annual income as follows:

<b>Sl. No.</b>	<b>Grade</b>	<b>Annual income (₹ in crore)</b>	<b>No. of Municipalities</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
1	Special Grade	Above 10.00	18
2	Selection Grade	6.00-10.00	27
3	First Grade	4.00-6.00	32
4	Second Grade	Below 4.00	44
Total			121

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

The process of delimitation of Wards has been completed in all the Municipal Corporations and Municipalities and reservation of seats for Corporation Councillors and Municipal Councillors has been published in the Gazette.

Further, as the Nagercoil, Hosur and Avadi Municipalities have been upgraded as Municipal Corporations, the reservation of office of Corporation Mayors and Municipal Chairpersons is under process.

## **2.2 Infrastructure Development**

The creation of infrastructure and sustainable maintenance of all basic amenities is the important function of the Urban Local Bodies. The Government accord highest priority to the creation of quality and functional infrastructure. Works in urban local bodies are taken up by accessing financial assistance through various Central/State Government schemes and from external funding agencies like World Bank, German Development Bank (KfW), Japan International Cooperation Agency (JICA) and Asian Development Bank (ADB).

## **2.3 Water Supply**

Government is according right priority for provision and access to safe drinking water to every household in the Corporations and Municipalities. With a aim to improve the water supply situation,

the Government has taken up various water supply projects availing financial assistance from Central and State government (Such as AMRUT, SMART CITY, IUDM and CGF) and various external agencies such as Japan International Cooperation Agency (JICA), German Development Bank (KfW), World Bank. 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 norm for drinking water supply in Corporations and Municipalities covered by underground sewerage system is 135 liters per capita per day (LPCD) which is prescribed by the Central Public Health and Environmental Engineering Organization (CPHEEO). For other cities not covered by underground sewerage system, it is 90 LPCD. The urban local bodies aim to implement water supply schemes with the objective of achieving the above norms.

The water supply position in Corporations and Municipalities are given below:

<b>ULB</b>	<b>Range</b>	<b>Status</b>	<b>No.of ULBs</b>
Corporations	110 LPCD&above	Good	8
	70 to 109 LPCD	Comfortable	5
	below 70	Poor	1
Total			14
Municipalities	90 LPCD& above	Good	66
	40 to 89 LPCD	Comfortable	55
	20 to 39 LPCD	Poor	0
Total			121

During 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 1899.29 MLD and the corresponding per capita supply also increased to 113 LPCD for the year 2018-19.

Under TNUDP III, Out of 17 water supply improvement schemes taken up at an estimated cost of ₹ 661.65 crore, 13 Scheme were completed and put into use and the supply level has increased in these towns as follows:-



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

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

The status of remaining 4 water supply schemes are as follows:-

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

Under Urban Infrastructure & Governance (JnNURM – UIG), 10 Water Supply Improvement Schemes (WSIS) have been taken up at an estimated cost of ₹ 613.30 crore. Out of these, 9 schemes have been completed.

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

Sl. No	Name of the ULB	Project Cost (₹ in crore)	Daily Water Supply Service Level			
			Before implementation of the Scheme		After implementation of the Scheme	
			Quantity supplied in MLD	LPCD	Quantity supplied in MLD	LPCD
1	Madurai (Vaigai-II and Checkdam) – 2 works	80.37	71.6	67	118.6	110
2	Coimbatore (Pillur -II)	159.85	176.00	109	216.00	135
3	Tamparam	32.62	8.77	55	16.12	90
4	Anaiyur(merged with Madurai Corporation)	7.88	3.48	46	4.12	90
5	Tirupparankundram& Harvipatti (merged with Madurai Corporation)	9.70	2.69	69	3.71	90
6	Tirumangalam	68.13	8.08	90	11.18	135

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
7	Madurai added area (Avaniyapuram, Thirunagar and Vilangudi)	106.99	17.14	90	27.55	135
8	Coimbatore added area (Thudiyalur, Vellakinaru, Kalapatti, Saravanampatti and Chinnavedampatti)	29.03	10.64	70	36.08	135
9	Avadi	103.14	designed for 41.6 MLD Supplied 0.6 MLD	-		

The status of remaining one Water Supply Scheme is as follows:-

<b>Sl. No</b>	<b>Name of the ULB</b>	<b>Project cost ( ₹ in crore)</b>	<b>Present stage</b>
1	Anakaputhur	14.88	Work in progress

Under Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT), 40 Water Supply Improvement Schemes at a cost of ₹ 740.47 crore have been taken up for implementation. Out of these, 37 Water Supply Improvement schemes (WSIS) have been completed in Devakottai, Karur, Valparai, Tirupathur, Ramanathapuram, Paramakudi, Keelakarai, Sivagangai, Rameswaram, Arakkonam, Tiruthani, Aranthangi, Maraimalainagar, Vickramasingapuram, Nammakkal, Srivilliputhur, Gudalur(Nilgris), Erode, Rasipuram, Thanjavur, Villupuram, Ottanchatram, Mettur, Attur, Vandavasi, Tiruchengode, Karaikudi, Palladam, Chidambaram, Dharapuram, Periyakulam, Tiruvathipuram, Vellakoil, Kangeyam, Kayalpattinam, Cumbum, Arani and in 3 ULB's Kovilpatti, Tindivanam and Kodaikanal Municipality works are under progress.



Water supply improvement schemes have been taken up with the financial assistance of JICA in 3 Corporations viz. Tiruchirappalli, Dindigul and Thoothukudi and 6 Municipalities viz. Palani, Coonoor, Idappadi, Devakottai, Mettupalayam and Udumalpet at a cost of ₹ 663.68 crore. 9 projects have been completed and put into beneficial use for the public.

15 Water Supply Improvement works have been taken up under KfW fund at an estimated cost of ₹ 869.15 crore. Out of these, 6 works have been completed in Tirunelveli Corporation, Kadaiyanallur, Tiruvannamalai, Pallipalayam, Cuddalore, Karur Municipalities and 9 works in Thanthoni (merged with Karur Municipality), Inamkarur (merged with Karur Municipality), Udthagamandalam, Coonoor, Padmanabapuram, Bodinayakanur Municipalities and in Tirunelveli, Tiruchirappalli, Coimbatore (added area) Corporations works are under various stages of implementation.

Under Atal Mission for Rejuvenation and Urban Transformation (AMRUT-2015-16), 9 Water Supply Improvement Schemes (WSIS) have been

taken up at an estimated cost of ₹ 1989.79 crore. Out of these, Water Supply Improvement Scheme in Thanjavur Corporation is completed and the balance 8 schemes in Coimbatore, Tiruppur, Erode, Vellore, Nagercoil, Hosur Corporations. In Rajapalayam and Ambur Municipalities works are under various stages of implementation.

Under Atal Mission for Rejuvenation and Urban Transformation 2016-17, 2 Water Supply Improvement Schemes (WSIS) have been taken up at an estimated cost of ₹ 687.21 crore in Coimbatore and Kumbakonam. These works are under various stages of implementation.

Under Atal Mission for Rejuvenation and Urban Transformation 2017-20, 3 Water Supply Improvement Schemes (WSIS) have been taken up at an estimated cost of ₹ 2823.66 crore in Coimbatore (Pillur III), Tiruppur (Water Supply Improvement Schemes) and Madurai (Source augmentation from Mullaiperiyar) are under various stages.

Under Tamilnadu Sustainable Urban Development Project (TNSUDP) Water Supply

Improvement Schemes to Namakkal Municipality and a Combined Water Supply Scheme to 5 Municipalities viz. Sankarankoil, Puliyangudi, Rajapalayam, Sivakasi, Thiruthangal have been taken up at an estimated cost of ₹ 660.37 crore and works are under various stages.

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

Improving the efficiency of Water Supply Schemes, it is necessary to improve the operation capability. The Government has accorded special priority to implement the same. The following measures have been taken up by adopting latest technology:

- Replacing inefficient motors and pumps to improve the efficiency of the pumping system.
- Revamping the existing water supply distribution network to ensure equitable distribution of water.
- Implementation of the Supervisory Control and Data Acquisition (SCADA) system to

continuously monitor the transfer of data on water flow, performance and efficiency of pumps and motors, physical and chemical quality parameters of water have been taken up in the water supply schemes in Corporations and Municipalities.

### **2.3.2 Rain Water Harvesting**

Tamilnadu is the first Indian State to make rainwater harvesting mandatory. Successful implementation of this scheme from the year 2001 has resulted in improving the quality and 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 buildings mandatory while issuing Building Plan approval. The rain water harvesting structures created throughout the State have helped to raise the ground water table substantially. The

awareness programme for Rain Water Harvesting is also being continued in all the ULBs.

Upto March 2019, out of 45.14 lakh buildings in Corporations (except Chennai) and Municipalities, 39.40 lakh buildings (30331 Government buildings and 39.10 lakh private buildings) have been provided with RWH structures. Rain water harvesting in the water bodies in ULBs have also been given major thrust. Out of 1486 Ponds and temple tanks, 773 have been provided with RWH structures.

With this drive, 88% of Buildings and 52% of Ponds and Tanks have been covered upto March 2019. The recharge potential due to the rain water harvested from buildings and water bodies is quite substantial. In order to improve the water bodies in Palani, Karaikudi, Pudukottai, Ariyalur, Pattukottai, Nagapattinam, Sattur and Erode corporation an amount of ₹ 34.28 crore has been allotted by the Government with German Development Bank Assistance.

Urban Local Bodies have inspected the existing Rainwater Harvesting structures and

recommended for revival, rehabilitation and maintenance of the above and improved designs for new structures which are under implementation.

### **2.3.3 Summer Management Plan–2019**

In view of acute shortfall in rain in first six months of 2019 department has taken various steps to tackle drought by providing additional bore wells with hand pumps/mini power pumps in addition to purchase and replacement 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. Further, provision of HDPE tanks, flushing of existing bore wells and replacement of motors has also been undertaken.

To mitigate drought situation in 2019, ₹ 56.05 Crores has been sanctioned under State Disaster Response Fund (SDRF) for taking up works in 7 Corporations and 75 Municipalities in 23 Hydrological drought districts. Out of 976 works taken up, 147 works have been completed and the balance works are under various stages.



Considering the importance and urgency, work are also being taken up under general fund of Urban Local Bodies.

## **2.4 Under Ground Sewerage Scheme and Septage Management**

The Government has taken up policy decision to implement Under Ground Sewerage Scheme in a phased manner for the needy Urban Local Bodies. The Necessary Detailed Project Reports have been prepared for ULBs by CMWSSB, TWAD Board and the ULBs. The implementation will be taken up after necessary financial tie-up.

### **2.4.1 Sewerage Schemes under Implementation**

UGS schemes have been taken up for implementation under the Tamil Nadu Urban Development Project-III at a total cost of ₹ 1025.51 crore. Out of which, 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 the Urban Infrastructure and Governance component of JnNURM, UGSS in 4 ULBs viz., Madurai, Coimbatore and Avadi Corporations and Tambaram Municipality were taken up at a total cost of ₹ 925.49 crore and the works are at various stages.

UGSS in 10 ULBs viz., Maraimalai Nagar, Ariyalur, Arakkonam, Sattur, Chidambaram, Thirupathur, Periyakulam, Mettur, Nagercoil and Udumalaipet were taken up under the Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) component of JnNURM at a total cost of ₹ 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 stage.

UGSS for Erode Corporation at a cost of ₹ 209.09 crore, 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 and

Erode UGSS (Partially) have been completed and the process of effecting house service connections is in progress. The works in Karaikudi, Pollachi and Mettupalayam Municipalities and balance works in Erode Corporation are at various stages of implementation.

Under Integrated Urban Development Mission (IUDM), UGSS for Bodinayakkanur at a cost of ₹ 71.10 crore, Ariyalur (left out area) at a cost of ₹ 3.30 crore, Perambalur (leftout 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 up. Work at Bodinayakkanur, Ariyalur (left out area) and Perambalur (leftout area) UGSS has been completed. In both, Sathyamangalam and Rasipuram works are at various stages of implementation.

The administrative sanction was accorded for UGSS at Hosur Corporation for ₹ 283.94 crore under Tamilnadu Sustainable Urban Development Programme and action is being taken by TWAD board for calling tenders.

Under the financial assistance of AMRUT,SMART CITY and ADB Funds, UGSS has

been taken up in Pallavaram Municipality at a cost of ₹ 22.00 crore, Kumbakonam Municipality at a cost of ₹ 59.84 crore, Tiruchirapalli Corporation Phase – II at a cost of ₹ 344.00 crore, Phase – III at a cost of ₹ 312.14 crore, Tirunelveli Corporation Phase – II at a cost of ₹ 289.01 crore and Phase –III at a cost of ₹ 440.19 crore, Vellore Corporation Phase II at a cost of ₹ 343.69 crore and Phase – III at a cost of ₹ 293.77 crore, Rameswaram Municipality at a cost of ₹ 52.46 crore, Coimbatore Corporation (Kurichi, Kuniyamuththur) at a cost of ₹ 442.00 crore, Rajapalayam Municipality at a cost of ₹ 246.99 crore, Thanjavur Corporation (leftout area) at a cost of ₹ 93.68 crore, Coimbatore Corporation (leftout portion of core area) at a cost of ₹ 24.38 crore and Ambur Municipality at a cost of ₹ 165.55 crore were taken up. Out of these, work has been completed in Pallavaram Municipality and works in other ULBs are under various stages of implementation.

Upto 31st March 2019, 6,10,225 house Service Connections (previous year 5,50,386 connections) have been effected in 35 ULBs viz., Avadi, Ariyalur, Bodi-nayakkanur, 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.

### **2.4.2 Septage Management**

Septage is a settled solid matter in semi-solid condition usually a mixture of solids and water settled at the bottom of 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 design of Septic Tanks and collection, transportation, safe treatment & 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.

Out of 15 Corporations (including Chennai), 121 Municipalities, 528 Town Panchayats and 12,524 Village Panchayats functioning in the State, the 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 fringe Local Bodies, are experiencing tremendous rate of growth, due to the fast pace of urbanization in Tamilnadu. Hence there is a need for faecal septage management to serve the uncovered areas of such local bodies and also safe handling of the faecal sludge from the nearby ULBs and Rural Local Bodies, where there are no system in place, based on the cluster approach.

#### **2.4.2.1 Need for Septage Management**

The Government of Tamilnadu has ordered for implementation of Septage Management in Urban & Rural Local Bodies in Tamilnadu vide G.O. (Ms) No. 106 MA&WS Department, dated 01.09.2014 and to regularize and monitor the handling of

faecal sludge. The guidelines contemplate the following initiatives:-

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

A cluster approach has been adopted to ensure optimum utilisation of Sewage Treatment Plants. 39 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). Out of these, 21 Clusters have been organised. Urban and Rural Local Bodies situated in and around these clusters are decanting the faecal sludge in these Sewage Treatment Plants. Further, Clustering of adjacent Urban and Rural Local Bodies in and around the balance STPs is being explored.

SL. NO	Name of the ULB	Year of Commissioning	Capacity (in MLD)	Technology	Inflow (in MLD)	% of Utilization	HSC given
1	Chennai	-	727	ASP	560.00	77	706547
2	Chinnamanur	2012	4	ASP	3.70	93	6421
3	Coimbatore	2010	110	SBR	27.00	25	40052
4	Cuddalore	2016	12.25	ASP	4.5	37	8241
5	Dharmapuri	2013	4.86	ASP	1.86	38	3563
6	Dindigul	2012	13.65	ASP	2.6	19	12361
7	Kanchipuram	2012	14.7	WSP	14.5	99	22707
8	Karur	2007	15	EAP	4.7	31	11485
9	Kumbakonam	2009	17	ASP	14	82	19926
10	Krishnagiri	2016	9	ASP	4.25	47	7521
11	Madurai	2011	170.7	SBR	40	23	162974
12	Maraimalai Nagar	2010	2.02	EAP	2	99	4611
13	Mayiladuthurai	2007	8.5	WSP	5.86	69	11084



SL. NO	Name of the ULB	Year of Commissioning	Capacity (in MLD)	Technology	Inflow (in MLD)	% of Utilization	HSC given
14	Mamallapuram	2016	2.34	ASP	0.45	19	368
15	Namakkal	2012	5	ASP	5.3	106	9325
16	Nagapattinam	2016	12.59	ASP	3.2	25	7845
17	Orathanadu	2016	1.5	ASP	0.9	60	1108
18	Pallavapuram	2011	0	ASP	13		26710
19	Perambalur	2013	4.2	ASP	3.2	76	11608
20	Pudukottai	2016	10.62	ASP	3	28	12155
21	Ramanathapuram	2013	7	ASP	6	86	10295
22	Thanjavur	2007	28.05	ASP	13.07	47	28094
23	Thiruvannamalai	2013	8.76	ASP	2.7	31	6650
24	Theni-Allinagaram	2015	12.05	ASP	5.02	42	9567
25	Tiruvallur	2016	6.2	MBBR	2.5	40	6280
26	Tiruvarur	2014	6.92	ASP	3	43	6389
27	Tirunelveli	2007	24.2	WSP	11	45	25412

SL. NO	Name of the ULB	Year of Commissioning	Capacity (in MLD)	Technology	Inflow (in MLD)	% of Utilization	HSC given
28	Tiruppur	2008	15	EAP	8	53	15495
29	Thiruchendur	2016	3.9	ASP	1	26	86
30	Trichirappalli	2007	58	WSP	56	97	59547
31	Udhagamandalam	2000	5	ASP	4	80	15969
32	Udumalaipet	2016	7.81	ASP	3.84	49	9740
33	Vellore	2015	10.28	ASP	6	58	6984
34	Virudhunagar	2016	7.65	ASP	1.5	20	4721
35	Viluppuram	2014	12.5	ASP	3.5	28	6336
36	Periyakulam	2017	5.47	ASP	4	73	7098
37	Avadi	2017	40	ASP	1.05	3	16668
38	Ariyalur	2018	4.16	ASP	0.2	5	1721
39	Bodinayakanur	2018	12.08	ASP	2.50	21	9668
	TOTAL		1419.96		848.9	1900	1333332

The identification of insanitary latrines, enumeration of existing septic tanks and establishment of decanting facilities in the functioning STPs are in progress. So far, in Corporations and Municipalities 211 Lorries have been registered. Sewage is being collected from septic tanks, carried through lorries to nearby Sewage Treatment Plant and treated there. As a next step, first Pilot Faecal Sludge Treatment Plant is taken up or implementation in Trichy Corporation to serve about 50,000 population with the assistance of Bill and Melinda Gates Foundation. Under IUDM scheme, 49 Fecal Sludge Treatment Plant (Municipalities having below 50000 Population) have been sanctioned and the works are in various stages. On completion of this scheme, a significant reduction of ground water pollution is anticipated. Moreover the manure obtained from this will be used for agriculture purpose. 34.36 lakhs people in 51 Municipalities and 59 Town panchayats will be benefitted after implementation of the above FSTP.

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

Birth Control is being adopted to control the population of stray dogs instead of killing them through Animal Birth Control Programme and it is implemented as a part of Public Health function of Corporations and Municipalities based on the guidelines of World Health Organization (WHO).

In order to implement the Animal Birth Control Programme in all Municipalities and Corporations (except Chennai), in Government Order 181 of M.A. & W.S. Department, dated 05.04.2013, a total grant of ₹ 5.40 crore was sanctioned to procure 60 vehicles for the transportation of stray dogs at a cost of ₹ 3.00 crore and 80 shelters for sterilizations of dog at a cost of ₹ 2.40 crore have been sanctioned. The sanitary workers and municipal staff have been trained by reputed NGOs to implement the Animal Birth Control Programme. Sterilization procedure is done by the outsourced Veterinary Surgeons. The dogs are maintained in well-established Dog shelters during the operative and post-operative periods. The sterilized dogs are also immunized

with anti-rabies vaccines. Under this Programme, enumeration of the stray dogs in the Municipalities and Corporations (except Chennai) was taken up in the year 2013. As per enumeration, the figure was 2,42,655. Upto March 2019, 18,662 dogs have been sterilized at a cost of ₹ 1.15 crore. The remaining stray dogs are also being sterilized in a phased manner.

## **2.6 Solid Waste Management**

In 14 Corporations (except Chennai) and 121 Municipalities about 6394 MT of solid waste is being generated. To accelerate the activities of Solid Waste Management such as primary collection, transportation and processing of Solid Waste, vehicles, machineries and equipments are being procured under Swachh Bharath Mission with State Share. The Wet fraction of Solid Waste collected are scientifically processed and disposed by establishing Decentralized Micro Compost Centres, Windrow Composting Plant, Vermi Composting Plant and Biomethanation Plants. Similarly, the dry waste collected and stored at Resource Recovery Centres and disposed to the identified vendors for recycling. Action is being

taken for removal of legacy waste dumped decades together through Biomining process and valuable lands occupied by the legacy waste are being retriaved.

### **2.6.1 Solid Waste Mangement Rules 2016& SWM Policy**

In a bid to strictly enforce implementation of SWM Rules 2016, bye-laws have been framed by all the Urban Local bodies with due provisions for collecting user charges and imposing spot fines for any violation of SWM Rules 2016. The Urban Local Bodies wise SWM Policy and action plans on SWM are also prepared.

### **2.6.2 Collection Mechanism on SWM**

Solid waste is collected from each and every Household periodically in all Urban Local Body. Wet waste is collected every day and directly transported to the Micro Composting Centres (MCCs) in each ULB. Domestic hazardous waste such as napkins, diapers and paramedical wastes are collected separately on a daily basis and are being incinerated in the MCCs. Other

domestic hazardous waste such as paint drums, thermometers, expired medicines and tube lights are being collected separately on a weekly basis and transported to the domestic hazardous waste deposition centre/MRFs and periodically disposed to the facilitator authorized by Tamil Nadu Pollution Control Board. e-waste collection is practiced on a monthly basis and stored in Resource recovery centres for disposal to TNPCB periodically.

### **2.6.3 Door to Door Collection & Segregation**

As a result of all the efforts taken in Solid waste management activities, department has achieved 94% in Door to door collection of waste and 80% in source segregation overall in all the ULBs.

### **2.6.4 Wet Waste Processing various ways**

#### **2.6.4.1 Bio-Methanation Plants**

The food waste, vegetable markets waste and Slaughter houses waste are being collected and converted as Bio methane gas by establishing 47 Bio-Methanation Plants in 11 Corporations and 27 Municipalities with a total capacity of 197 TPD of capacity at a cost of ₹ 37.42 crore with financial assistance through

IUDM scheme, Part -II scheme, IGFF and SWM funds. The energy derived out of these Bio-Methanation Plants are being used for illuminating the lights in compost yard, for functioning of processing plants machineries, STP plants available at the site, Amma Unavagam and Gasifier Crematoriums.

#### **2.6.4.2 Decentralized Micro Compost Centre:**

The Corporations and Municipalities are divided into required number of service areas on Decentralized approach by covering 4 to 5 wards per service area. For each service area, a Micro Composting Centre is established for conversion of Bio Degradable waste into bio manure. This will encourage local collection and disposal mechanism of wet waste.

This approach is being followed to minimise the secondary transportation cost as well as to achieve bin free streets and wards. Members of Local Self help groups are also provided employment in this endeavour. At present 794 Micro compost centres with a capacity of 3087 TPD are sanctioned. Out of these, 316 MCCs with the capacity of 1015 TPD are put to use in all



Corporations and Municipalities.

### **2.6.4.3 Windrows composting**

Windrow composting is being practised in 36ULBs (5 Corporations and 31 Municipalities) to handle 258 MT of bio waste through which 39MT of compost has been produced daily and the same is used for agricultural purposes.

### **2.6.4.4 Onsite Composting**

Onsite Composting Centers (OCCs) are constructed in parks and gardens to process the horticultural waste and to process the wet waste collected from nearby households. So far 876 OCCs have become functional in 14 Corporations & 121 Municipalities with a handling capacity of 416MT.

### **2.6.4.5 Utilization of Manure**

MCCs are provided with green belt and the compost produced is utilized for producing organic greens & vegetables. Compost usage is also promoted in coordination with the Madras Fertilizer Limited (MFL). From 2016 to May

2019, 15,570 tonnes of compost generated in 14 corporations & 121 Municipalities has been sold at marginal cost /free of cost to farmers. It is also used in the parks & gardens maintained by ULBs.

## **2.6.5 Dry Waste Processing**

### **2.6.5.1 Material Recovery Facility**

Dry waste is collected on a designated day of the week and transported to the Material Recovery Facility (Resource Recovery Centre). In Corporations and Municipalities so far, 91MRFs have been established and put into use. 24 MRFs are in progress. The saleable fraction of dry waste is directly sold to the vendors and the benefit realized is disbursed among the Sanitary worker. The other Combustible fraction of dry waste is disposed to Cement Plants. The Domestic Hazardous waste and E-waste collected periodically is also stored in these centres and disposed to the facilitator approved by the PCB.

### **2.6.5.2 Pyrolysis Unit**

Pyrolysis offers a flexible and attractive way of converting solid biomass into an easily stored

and transporable 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, clothes and other combustible materials.

### **2.6.5.3 Bio Mining, Bio Remediation or Bio capping of legacy waste**

Reclamation of dump yard filled with legacy waste is proposed through bio mining process. In Kumbakonam Municipality Bio Mining work has been completed and 2,00,000 Cum of legacy waste has been cleared and 12 Acres of land has been reclaimed. Following this, dumped legacy waste of 126000 Cum has been removed & 10 acres Land is reclaimed in Sembakkam, Pammal & Poonamallee Municipalities.

5 more Corporations and 87 Municipalities have been sanctioned with Bio mining Projects under SBM and Smart City Mission fund. Bio mining works are in various stages. Centre for

Environmental studies, Guindy Campus, Anna University Chennai is engaged to ensure the quality and quantity of works in 92 ULBs and also for guidance on technical aspects of Bio-mining works.

#### **2.6.5.4 Plastic Ban**

The ban on single use plastics notified vide G.O.MS.No.84, Environment & Forests(EC2) department dated 25.06.2018 is yet another remarkable initiative which is being enforced by the ULBs from 01.01.2019 in its true spirit. Bill has been passed in the assembly to empower the ULBs towards notification and enforcement of penalty clause for manufacture, stocking and usage of one time use and throw plastics by issuing suitable amendments to their Bye-laws. This significant step taken by the Government has proved to be a remarkable initiative towards reducing the plastic waste and sustaining the cleanliness of environment in the long run. On implementation of the ban on plastic, action is being taken up by the Urban Local Bodies to impose fine and seize the plastics. From January 2019 to 30-06-2019, 559.49 MT of plastics have

been seized and ₹ 178.54 lakhs of fine has been imposed.

## **2.7 Roads**

Roads form a major component of the infrastructure development and ULB's endeavour to provide good motorable roads and are designed and built for the primary use by vehicles and pedestrian traffic. ULB's are responsible for all aspects of road works, including formation, relaying, maintaining and restoration of the damaged portions. Roads are designed for an intended span of life and are laid based on the Ministry of Road Transport and Highways (MORTH) norms taking into consideration the cost effectiveness too.

The total length of 23,464.607 Km of roads are being maintained by the Corporations (except Chennai) and Municipalities in which 5504.71 Km. are Cement Concrete roads, 15975.683 Km are Black topped roads, 592.218 Km are WBM roads, 1156.255 Km. of Earthen roads and 236.10 Km. are other roads like cut stone pavement and paver blocks.

The earthen roads are improved every year with the financial assistance from various schemes like TURIP, IUDM, CGF and OMGFF and converted into either Cement Concrete / Black Topped roads / Paver block etc.,

Smart roads which includes footpath, duct, center meridians, cycle path, parking facilities and lighting facilities are being implemented under "SMART CITY PROGRAMME" in 10 Corporations.

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

The Government places considerable emphasis on improving roads damaged within ULBs due to laying of sewer lines, water mains and also due to natural calamities over a period of time and require restoration to full width to make it in a good motorable condition. To this end, the Government has been implementing "Tamil Nadu Urban Road Infrastructure Programme" named TURIP every year.

During the last eight years i.e., from 2011-12 to 2018-19, 6083.462 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 ₹ 3050.65 crore. Out of 5310 works taken, 4947 have been completed at a cost of ₹ 2560.42 crore as detailed below.

<b>Year</b>	<b>Sanctioned cost (₹ in crore)</b>	<b>Length in Km</b>	<b>Total Number of works Taken up</b>
(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	871.350	258
2017-18	411.16	832.070	224
2018-19	659.56	1238.200	314
<b>Total</b>	<b>2491.4</b>	<b>6083.462</b>	<b>5310</b>

## **2.8 Street Light**

Street Lights command a major role in infrastructure development. Urban Local Bodies are effectively maintaining Street lights to ensure better delivery of services at reduced cost through various Quality Control measures. About 7.58 Lakh street lights are available in 14 Corporations (except Chennai) and 121 Municipalities in the State of Tamil Nadu.

Street lighting expenditure forms 25 - 30 % of the electricity bill of the urban local bodies which absorbs a sizeable portion of financial resources of the ULBs. The maintenance of street lights is a critical factor and concern for the ULBs owing to various factors. ULBs in Tamil Nadu are constantly challenged by increasing population growth, rising energy costs and increase in operation and maintenance costs. It has been observed that, by optimizing the street lighting infrastructure and by effectively using the same, urban local bodies can achieve significant energy and monetary savings – at least by 35% of the present consumption levels.



In this connection, energy efficiency measures have been taken up for implementation in 9 Corporations and 34 Municipalities of Thanjavur and Tiruppur Region by utilizing the services of energy saving companies (ESCO)

For this project, a sum of ₹ 183.63 crore had been allocated under IUDM. Out of the 3,13,507 Street Lights, it was proposed to retrofit 2,16,680 FTL to LED lights. The entire work has been completed. Due to this ₹ 32 Crores has been saved as Energy consumption charges. It is taken up to convert all categories of remaining lamps into LED lights in 10 corporations under SMART CITY Scheme.

In continuation of the above , it is proposed to implement the Energy Saving measures by converting all the street lights of various categories into LED lights in Dindigul, Avadi, Hosur and Nagercoil Corporations and the balance 87 Municipalities, in which all the 3,07,300 lights are proposed to be converted into LED lights. Investment Grade audit work is completed and further process is pursued.

## **2.9 Special Infrastructure Programme**

### **2.9.1 Modern Gasifier Crematorium**

Cremation to a greater extent is performed by the social customs by direct wood burning in an open space. As a measure of environmental protection an alternative to the fuel wood burning, crematoriums based on Gasifier technology have been introduced in the urban local bodies, replacing the wood fired operation. Due to improved / upgraded technology adoption, Gasifier Cremation can be completed in 60 to 90 minutes as against the conventional time requirement of not less than 4 hours and cremation can be performed equally, efficiently during rainy season also.

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, 107 has been completed and are maintained by NGOs/ Philanthropic Organisations. Construction of the remaining 7 crematoria are in various stages of implementation.

## **2.9.2 Modern Slaughter Houses**

Slaughtering animals poses public health concerns, with open slaughtering increasing the risks of water and air pollution. In view of facilitating hygienic slaughtering, it has been decided to construct a better scientific and modern slaughter houses in all the Urban Local Bodies. In 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. All the Slaughter houses have been completed.

The Ministry of Food Processing Industries has provided grants-in aid for the establishment of new/modernization of abattoir under "Infrastructure Development Scheme" with an aim to upgrade qualitative and quantitative capacities which will be linked with commercial processing of meat both for domestic consumption and exports. The scheme envisages a grant of 50% of the cost of plant and machineries and Technical civil work. In the above scheme, ₹ 10.49 crore has been sanctioned to Tiruchirapalli Corporation for two modern abattoirs in which one work has been completed.

### **2.9.3 Roof Top Solar Energy**

In order to save the electricity as well as to economise in its maintenance, the Government intends to make Solar Energy a people's movement just as it did earlier in the case of Rain Water Harvesting.

The Government has set a target of achieving 3000MW of solar power capacity by harvesting solar energy potential in the State based on the Tamil Nadu Solar Energy Policy 2012. This Policy envisages solar roof top system, solar water heating system and development of solar parks. One of the steps taken is to enumerate the total number of buildings owned by the ULBs and to establish roof top solar panels on them to produce electrical energy and use it for office requirements and subsequently for street lights, water supply works in due course of time.

In 445 buildings in ULBs, roof top photovoltaic panels have been installed from which 2198 kWh power is being generated. It is planned to establish the above effort to all ULB buildings including water supply head works,

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

To install the solar roof top in all ULBs, a feasibility report was prepared and it was found that 11 MW energy harvesting is possible in 2825 buildings. Under Smart City Programme, tender has been received and work order was issued for the implementation of solar roof top energy of 2.94 MW during 2018-19 as a first phase around 640 buildings in Tiruchirappalli, Salem, Thoothukudi, Tirunelveli, Tiruppur, Vellore and Thanjavur Corporations. It is proposed to take up the remaining 2185 buildings in other ULBs to harvest 8.06 MW on PPP basis during the year 2019-20.

#### **2.9.4 Ground- Mounted Solar Panel System**

The Ground- Mounted Solar Panel Systems have been planned at an estimated cost of ₹ 102.35 Crore to harvest the 18.42MW Solar Photo Voltaic Power for the year 2018-19 in Coimbatore, Tiruchirappalli, Thoothukudi, Tiruppur & Vellore Corporations. In Coimbatore Corporation work has been completed and put into use. Other works in above Corporations are under various stages.

## **2.10. Capital Grant Fund and O&M Gap Filling Fund**

### **2.10.1 Capital Grant Fund**

Infrastructure Gap Filling Fund (IGFF) has been renamed as Capital grant fund as per the 5th Finance Commission recommendation, and allocation of fund has been increased from 7% to 15% of the aggregate devolution intended for ULBs. In order to assist the financially weaker ULBs which lack infrastructure facilities and those who are unable to meet the expenditure from its own source, the Government proposes to assist them financially. These ULBs are selected for the execution of the works/schemes. During the year 2018-19 an amount of ₹ 455.43 crore has been sanctioned. Out of these, 12 new works has been taken up at a cost of ₹ 25.27 crore . All the new works are at various stages of implementation. The balance amount of ₹ 429.41 crore was sanctioned as ULB contribution for the projects sanctioned under various schemes such as AMRUT, UIDSSMT, IUDM etc.

## **2.10.2 O&M Gap Filling Fund**

The Operational and Maintenance Gap Filling Fund is allocated to the needy ULBs where the gap is noticed in maintaining the infrastructural facilities such as water supply, Under ground Drainage and payment dues to water charges and TANGEDCO. The percentage of O&M Gap filling fund for each tier of ulbs has been increased from 3% to 5% based on the recommendations of the 5th State Finance Commission. Under the Operations and Maintenance Gap filling fund so far 510 works have been taken up at an estimated cost of ₹ 599.26 crore of which, 436 works have been completed and balance works are in various stages of implementation.

During the year 2018-19 an amount of ₹ 151.81 crore has been sanctioned. ₹ 40.34 crore has been allotted for 8 new works and all works are at various stages. The balance amount of ₹ 111.47 crore was sanctioned as ULB contribution for the projects sanctioned under various schemes such as AMRUT, UIDSSMT, IUDM etc.

## **2.11 IUDM**

Under Integrated Urban Development Mission, existing schemes are dovetailed to improve the standards of basic infrastructure in the Urban Local Bodies like roads and streets, drinking water, sewerage and sanitation, storm water drains, solid waste management, improvement of bus stands and parking places, in an integrated manner .The scheme was relaunched in 2018-19. During the year 2018-19, an amount of ₹ 589.22 crore has been sanctioned. 290 works have been taken up and all the works are various stages of implementation.

## **2.12 Sanitary Workers Welfare**

Saniary workers constitute about 70% of the work force (out of 43089 staff, 30109 are sanitary workers) of the urban local bodies.Their role is critical in maintaining basic sanitation and solid waste management services which is the core function of the Urban Local Bodies.It is important to provide them safe and healthy living environment. The Government has sanctioned ₹ 99.44 crore under IGFF,O&M and Part II scheme



during the past eight years for construction of 1366 quarters for sanitary workers, as detailed below:-

Year	No.of ULBs	No. of units	Present Status	
			Completed	Progress
2011-12	3	72	72	0
2012-13	6	80	80	0
2013-14	11	336	336	0
2014-15	8	214	214	0
2015-16	5	200	200	0
2016-17	4	134	30	104
2017-18	9	300	0	300
2018-19	2	30	0	30
Total	48	1366	932	434

Further, in order to improve the working environment of the sanitary workers, the push carts which were provided to collect the solid waste at door step has been eliminated and the sanitary workers are provided with Battery Operated Garbage Collection Vehicles and Motor Operated Light Commercial Vehicles. These battery operated Garbage Collection Vehicles and motor operated

light commercial vehicles are procured under Swatch Bharat Mission with financial contribution of Government of Tamilnadu as given below:-

<b>Year</b>	<b>BOVs</b>	<b>LCVs</b>
2017-18	2629	809
2018-19	3193	463
Total	5822	1272

## **2.13 Centrally Sponsored Schemes**

### **2.13.1 Smart Cities**

The Government of India launched Smart Cities Mission on 25.06.2015. The objective of the Smart Cities Mission is to promote sustainable and inclusive cities that provide core infrastructure, a decent quality of life, with a clean, sustainable environment and an application of “Smart Solutions” to the citizens.

Two major components in the Smart City are Area Based Development (ABD) and provisions of Pan City Solutions.

Area Based Development component includes provision for adequate water supply, assured

electricity supply, sanitation, including solid waste management, efficient urban mobility and public transport, affordable housing, especially for the poor, robust IT connectivity digitalization, good governance, especially e-Governance citizen participation, sustainable environment, safety and security of citizens, particularly women , children and the elderly, health and education.

Provisions of Pan-city solutions envisage application of selected Smart Solutions to the existing city-wide infrastructure. Application of smart solutions will involve the use of technology, information and data to make infrastructure and services better.

In Tamil Nadu, based on the “City challenge Competition”, Chennai and Coimbatore Corporations were selected in the first round for 2015-2016.

During 2016-17, in the 2nd round, Madurai, Salem, Thanjavur and Vellore Corporations have been selected.

During 2017-18, in the 3rd round, Thoothukudi, Tirunelveli, Tiruppur and Tiruchirappalli Corporations have been selected.

Further, in the 4th round, Erode has been selected in the year 2017-18. In all the 10 Corporations excluding Greater Chennai Corporation, the Special Purpose Vehicle (SPV) has been formed.

Under this scheme, 287 works at a cost of ₹ 10606.05 crore have been taken up for implementation. Out of these, 29 works at an estimated cost of ₹ 103.95 crore have been completed; 156 works at an estimated cost of ₹ 4411.66 crore are under progress and balance works are various other stages.

An amount of ₹ 1653 crore from Government of India and ₹ 1091 crore from Government of Tamilnadu have been released to Mission Directorate for release of fund to respective ULBS for implementation of projects.

At National level, Tamil Nadu occupies the 7th place in implementation of Smart City Projects.

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

Atal Mission for Rejuvenation and Urban Transformation has been launched by the Government of India on 25.06.2015, with the aim of providing infrastructure that has the direct link to the provision of better services to the citizens.

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

For the SAAP 2015-2016, Water Supply Improvement scheme in 9 ULBs one Under Ground Sewerage Scheme and 90 parks in 24 ULBs at an estimated cost of ₹ 2067.83 crore were taken up for implementation. Out of these, Thanjavur Water Supply Scheme and Pallavapuram Under Ground Sewerage Schemes and all 90 parks have been completed.

For the SAAP 2016-17, Kumbakonam Water Supply Improvement Scheme, Coimbatore 24x7 Water Supply Improvement Scheme, 8 Under Ground Sewerage Schemes

and 133 parks in 24 ULBs at a cost of ₹ 3017.35 crore have been taken up. All parks have been completed. Water Supply and Under Ground Sewerage Schemes works are at various stages.

During the year 2017-20, 3 Water Supply Improvement Scheme, 4 Under Ground Sewerage Schemes and 135 parks in 24 ULBs totally at a cost of ₹ 4228.95 crore have been taken up. All parks have been completed. Balance works are at various stages.

Government of India share ₹ 1732.67 crore and Government of TamilNadu share of ₹ 887.78 crore have been released to Mission Directorate for release of fund to respective Urban Local Bodies for implementation of projects.

For Water Supply and Under Ground Sewerage Schemes, Part funding under ADB/KfW/TNSUDP/IUDM/CGF has been proposed towards ULB contribution for smooth implementation.

At National level Tamil Nadu occupies the 13th place in implementation of AMRUT Projects.

## **2.13.3 Deendayal AntodayaYojana – National Urban Livelihoods**

### **Mission (DAY-NULM)**

There are 7 components under DAY-NULM. Two components namely “SHELTER FOR URBAN HOMELESS (SUH)” and “SCHEME FOR URBAN STREET VENDORS (SUSV)” are being implemented by Department of Municipal Administration through Corporations, Municipalities and Town Panchayats.

#### **2.13.3.1 SHELTER FOR URBAN HOMELESS (SUH)**

Under the scheme of Shelter for Urban Homeless (SUH), Five project sanctioning committee meetings were held and 242 shelter units at an estimated cost of ₹ 107.60 crore have been sanctioned. These include 89 Special Shelter Short Stay Homes in District Head Quarter Hospitals for the attendance of out patients. So far 149 shelter have been completed and the remaining 93 shelter are under various stages of progress.

### **2.13.3.2 Support to Urban Street Vendors (SUSV)**

Under the scheme of Support to Urban Street Vendor component of DAY-NULM, 1,21,098 street vendors have been identified through survey and ID cards have been issued to 1,03,048 vendors. The Town Vending Committee in all Corporations (except Chennai) and Municipalities has been formed. Regarding Town Panchayats, 347 out of 528 Towns have formed Town Vending Committee and the remaining Town Panchayat, the Town Vending Committee will be formed expeditiously.

### **2.13.4 Swachh Bharat Mission**

Swachh Bharath Mission had been launched by the Ministry of Urban development on 02.10.2014 for a period of five year. The objectives of the Mission are (i) Elimination of open defecation, (ii) Eradication of manual scavenging, (iii) Modern & scientific Municipal solid waste management, (iv) behavioral change regarding healthy sanitation practices, (v) awareness about sanitation and its linkage with public health, (vi) Capacity augmentation for urban local Bodies and to



create enabling environment for private sector participation in capital expenditure and operational expenditure (Capex & Opex).

Administrative sanction for the implementation of Swachh Bharat Mission with components comprising (1) construction of individual household latrine, (2) community toilet, (3) solid waste management, (4) IEC activities, (5) capacity building A & OE charges has been accorded by Government of Tamil Nadu.

In this regard, a 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.

#### **2.13.4.1 Individual House Hold Latrines**

<b>Year</b>	<b>Target</b>	<b>Completed</b>	<b>Progress</b>
2015-16	98,048	98,048	-
2016-17	1,02,569	1,02,569	-
2018-19	87,049	47,740	39,309
Total	2,87,666	2,48,357	39,309

The entire plan period target for IHHL will be completed before October 2019.

#### **2.13.4.2 Community Toilets**

<b>Year</b>	<b>No of Toilets</b>	<b>Seat</b>	<b>Completed</b>	<b>Progress</b>
2014-15	293	2167	2167	-
2015-16	415	3961	3961	-
2016-17	136	1287	1193	94
2017-18	23	338	115	223
<b>Total</b>	<b>867</b>	<b>7753</b>	<b>7436</b>	<b>317</b>

#### **2.13.4.3 Solid Waste Management**

As a part of Swachh Bharath Mission, the Solid Waste Management Projects have been taken up in 135 Urban Local Bodies at an estimated cost of ₹ 1204.03 crore wherein 1967 works have been taken up. Out of these, 1085 works have been completed and rest of the works are in different stages of implementation.

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

In a view to create awareness on cleanliness, sanitation and to eradicate open defecation and also to efficiently handle the segregated bio waste

and recyclable waste, Government has approved to engage 1264 animators, 215 Supervisors and 11 Co-ordinators in 121 Municipalities and 14 Corporations at a cost of ₹ 76.85 crore for 3 year from 2016-17 to 2018-19. Survey work on sanitation has been completed in Municipalities and Corporations and IEC activities are being carried out continuously regarding sanitation, public health and Solid waste management besides motivating the public towards source segregation and cleanliness.

#### **2.13.4.5 Sustainable Development Goals (SDGs)**

The Government of Tamil Nadu is giving high priority for implementation of following Sustainable Development Goals in this State before 2030.

1. Providing universal & equitable access to safe and affordable drinking water.

2. Providing access to adequate and equitable sanitation and hygiene for all to end open defecation.

3. Improving water quality by reducing pollution, eliminating dumping and minimizing the release of hazardous chemicals & materials halving the proportion of untreated waste water and substantially increasing recycling and safe reuse.

4. Capacity Building for Water & Sanitation related activities.

5. Substantially reduce waste generation through prevention reduction, recycling and reuse.

Action is being taken to achieve the above said goals through the following:

1. All necessary measures taken to ensure safe and affordable drinking water supply to everyone.

2. Waste Water treatment facilities are established to treat the waste water and the treated water is reused

3. As far as Sanitation is concerned, Individual Households Latrines and Community Toilets have been constructed and Insanitary Latrines had been converted to Sanitary Latrines to ensure complete sanitation and to end open defecation.

4. Wet waste and Dry waste processing facilities are established to process the generated waste and rigorous IEC activities are undertaken to achieve prevention, reduction, recycling and reuse of waste.

#### **2.13.4.6 Heritage City Development and Augmentation Yojana – HRIDAY**

In a view to focus on promoting the holistic development of heritage cities with the aim to preserve and develop the culture, arts and architecture, further in order to have aesthetically appealing, accessible, liveable, safer and sustainable cities without disturbing their unique character, the Ministry of Urban Development (MoUD), Government of India launched the

## Heritage City Development and Augmentation Yojana (HRIDAY).

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

The Government of India selected the Kancheepuram Municipality as one of the city under Heritage City Development. City Level Advisory Monitoring Committee has been constituted under the chairmanship of District Collector of Kancheepuram with 10 members

The details of work, fund allocation and the present status of works taken under this scheme in Kancheepuram Municipality are as follows:

<b>Sl. No</b>	<b>Details of Work</b>	<b>No of Works</b>	<b>Project cost ₹ in lakhs</b>	<b>Present status</b>
1.	Arulmigu Ekambareswarar Temple (to improve the roads and streets around the Temple)	6	989.72	Completed
2.	Arulmigu Varadharaja Perumal Temple (to improve the Roads and Streets around the Temple)	6	763.86	Completed
3.	Arulmigu Kamatchi Amman Temple (to improve the Roads and Streets around the Temple)	7	246.00	85% of work completed
	Total	19	1999.58	

## **2.14 Externally Aided Projects**

The Government of Tamil Nadu is carrying out many infrastructure projects with externally aided funds as given below:

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

Under this project, at an estimated cost of ₹ 663.68 crores, 9 water Supply improvement Schemes in 9 Urban Local Bodies were taken up. All schemes have been completed and put into public use.

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

Under this project, 35 schemes related to Road improvements, Storm water drains, Water body improvements, Water Supply improvements, development of Parks, Play fields and Under Ground Sewerage schemes were taken up in 26 Urban Local Bodies at a cost of ₹ 3047.20 crore. Out of these, 12 schemes have been completed and the remaining 23 schemes are in various stages.



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

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

The project includes 3 components such as Urban Governance Component, Urban Sector Technical Assistance Component and Urban Investment Component.

Among the above 3 components, the Urban Governance (Model City) Component and Urban Sector Technical Assistance Component are being carried out by the Commissioner of Municipal Administration.

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

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

Model Cities under Urban Governance (Model City) Component, Erode City Municipal

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

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

For the year 2014-15, 2015-16 and 2016-17 an amount of ₹ 51.08 crore each to Erode and Vellore City Municipal Corporation and ₹ 25.54 crore to Hosur Municipal Corporation has been sanctioned and released against the achievements made on Disbursement Linked Indicators (DLI) targets fixed. The same quantum of amount will

be sanctioned and released to these cities in the year 2019-2020 for the achievements made against the DLI targets fixed for the years 2017-18 and 2018-2019.

### **2.14.3.2 Urban Sector TA Component**

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

<b>S. No</b>	<b>Sub Component</b>	<b>Total Finance</b>	<b>World Bank Finance</b>
		(US \$ Million Dollars)	
1	Municipal eGovernance / PFM and GIS	21.50	11.50
2	Knowledge and Institutional Strengthening	7.00	6.00
3	Project Preparatory Fund	2.00	0
4	Project Management, Incremental Operation Costs	3.5	3.5
	Total	34.00	21.00

### **2.14.3.3 e-governance in Urban Local Bodies**

The Government of Tamil Nadu is striving to achieve e-governance system in Municipal Administration. For providing quick and better services to the urban citizens, 29 Municipal e-governance modules have been identified. To achieve this goal, a major e-governance project namely "Centralized Web Based Software Application for all ULBs" [UTIS] was taken up for implementation under TNSUDP at a cost of ₹ 18.31 crore. 23 modules have been implemented in 14 Corporations and 121 Municipalities in the year 2018-19. 14610 staff of ULBs were trained on 23 modules of CWBS application. For the Balance 6 modules, implementation process in 135 ULBs is at various stages.

### **2.14.3.4 Knowledge and Institutional Strengthening**

Under knowledge and Institutional Strengthening Sub Component, "training programmes have been completed at a cost of ₹ 6.59 crore and 26092 staff and officers of ULBs have been imparted capacity building training.

During the year 2019-2020, 4 training programmes will be organized at an estimated cost of ₹ 13.42 crore and training will be provided to nearly 41,119 staff and officers of ULBs.

### **2.15 Tamil Nadu Combined Development and Building Rules 2019**

In order to effectively implement and simplify procedure the functions of Urban Planning including Town Planning and Regulation of Land use and Building Constructions mentioned in 74th C.A.A, New Combined Building Rules applicable to Corporations/Municipalities/Town Panchayats and Village Panchayats have been notified as "Tamil Nadu Combined Development and Building Rules 2019" Vide G.O.(MS) No 18. Municipal Administration and Water Supply Department dated 04.02.2019. The process has been simplified and in future anyone can apply and get approved for construction of building through Online with in the prescribed time. All stakeholders will be benefited by the new Tamil Nadu Combined Development and Building Rules 2019.

## **2.16 Regularisation of Unapproved plots**

Under the special Scheme of “Regularisation of unapproved Layouts and unapproved plots” 64,645 plots were regularised after collecting regularisation and development Charges. ₹ 36,242 lakhs have been collected as the Development Charges by local bodies. This amount will be utilised for development of infrastructure in the unapproved layouts. Provision has been made that the remaining unapproved plots if any lies with in the regularised layout could also be regularised under this scheme at any point of time.

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

The Tamil Nadu Institute of Urban Studies, Coimbatore was established in the year 1981 with following main objectives:-

i) To create awareness on the need for the application of latest management techniques in various branches of Municipal Administration.

ii) To disseminate knowledge of municipal administration and urban development through

training programmes, seminars, conferences, publications etc.,

iii)To conduct research studies and consultancy services in urban development, municipal administration and related disciplines.

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

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

The Institute is pioneer in conducting training for elected representatives and the personnel of Urban Local Bodies. Several training programmes such as orientation training for elected representatives and comprehensive and refresher training courses for officials and staff of Urban Local Bodies are conducted. The details of training programmes organized during 2018-19 are as follows:

<b>Sl. No.</b>	<b>Name of the Programme</b>	<b>Number of Trainees</b>
<b>1</b>	<b>2</b>	<b>3</b>
1	Four Weeks Comprehensive Training Course for Junior Assistants of Municipalities and Corporations.	132
2	Three-day training programme for TPOs/TPIs of ULBs supported under TNSUDP	246
3	Three-day capacity building programme for CHOs/ACHOs/MHOs/SOs/SIs of ULBs supported under TNSUDP	446
4	Three-day Special training programme on planning for retirement for Officials and staff of ULBs	182
5	Three days sensitization programme on applied epidemiology for Sanitary Officers and Sanitary Inspectors of Town Panchayats.	65
6	Three-day Skill development training programme for Sanitary workers of ULBs sponsored by TUFIDCO under AMRUT Scheme	5185
7	One day Credit course on building Bye-laws and process sponsored by the Kumaraguru College of Technology, Coimbatore	120



<b>Sl. No.</b>	<b>Name of the Programme</b>	<b>Number of Trainees</b>
<b>1</b>	<b>2</b>	<b>3</b>
8	Three days National Level Exposure Workshop on Solid Waste Management for the Officials of ULBs sponsored by NIUA under SBM scheme	223
9	Two- day exposure visit for newly recruited Junior Engineers of ULBs in Karnataka State.	41
10	Two days exposure visit for newly recruited Revenue Section staff of Karnataka State.	21
11	Three-day training programme on gender budgeting for the Executive Officers of Town Panchayats sponsored by the Ministry of Women and Child Development, GoI, in collaboration with Bharathiar University	60
	Total	6721

This institute is empanelled as a training entity under the AMRUT Scheme.

This Institute has conducted a Three-day Skill Development Training Programme for Sanitary Workers of Municipal Corporations, Municipalities and Town Panchayats for a total number of 5185

Sanitary Workers in 193 batches at five centres viz., Udhagamandalam, Coimbatore, Yercaud, Mamallapuram and Madurai in two Phases during 2018-19. This Institute is a recognised research Institution of Bharathiar University, Coimbatore. One Ph.D research scholar has completed a research on Property Tax Management in Municipalities with special reference to Thanjavur region and has been awarded degree during February 2019.

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. The Government has released, the first and second installments, a sum of ₹ 10.00 crores for strengthening the Institute infrastructure.

Accordingly the Institute is under process of fixing the agency for executing proposed construction work of Tamil Nadu Institute of Urban Studies. The Institute is also in search of similar Government training Institutions for co-locating the proposed regional centres.

## **2.18 Finance Commission**

### **2.18.1 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 was constituted w.e.f. 1.12.2014. It has submitted its report and recommendations to Hon'ble Governor of Tamil Nadu and Hon'ble Chief Minister on 27.12.2016.

The Explanatory Memorandum on the action taken by the State Government on the recommendations, of the Fifth State Finance Commission alongwith its reports 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 is 10% of the Net State Own Tax Revenue.

The Commission 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 ULBs.

<b>S.No.</b>	<b>Criterion</b>	<b>Weightage</b>
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					Municipalities					Grand Total (5+9)									
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
2017-18		1215.82	224.96	75.99	1516.77	881.47	165.28	55.09	1101.84	2618.61										
2018-19		1408.11	264.02	88	1760.13	1020.88	191.32	63.80	1276	3036.13										

## **2.18.2 Recommendation and Release of Grants**

The 14th Central Finance Commission 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:-

(i) 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.

(ii) Grants will be sanctioned 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.

(iii) 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 Town 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 funds released for the 14th Finance Commission grant for the year from 2015-16 to 2018-2019 are furnished below:

(₹ in crore)

Year	Basic Grants			Total (1)	Basic Grants			Total (2)	Total (1)+(2)
	Corporation	Municipalities	First Instalment		Corporation	Municipalities	Second Instalment		
2015-16	158	122.46	122.46	280.46	158	122.46	122.46	280.46	560.92
2016-17	218.79	169.56	169.56	388.35	218.79	169.56	169.56	388.35	776.7
2017-18	252.79	195.91	195.91	448.7	252.79	170.63	170.63	423.42	872.12
2018-19	292.44	212.02	212.02	504.46	-	-	-	-	504.46
Total	922.02	699.95	699.95	1621.97	629.58	462.65	462.65	1092.23	2714.2
<b>Year</b>									
2015-16									
2016-17									
									Total Performance Grants Municipalities Corporation
									Not Allocated
									229.24100.09129.15



## **2.19 Corporations**

There are 14 Municipal Corporations under the administrative control of Commissioner of Municipal Administration.

### **2.19.1 Madurai Corporation**

Madurai Corporation has been upgraded from Municipality on 01.05.1971. As per 2011 census, the population is 15,61,129. The Corporation consists of 100 wards with an extent of 147.99 Sq.Km with an annual income of ₹ 438.28 crore.

During the year 2018-19, the following projects were taken up for implementation:-

1. Under Smart City Mission, 14 works at a cost of ₹ 1242.95 crore have been sanctioned. Out of this one work was completed and the balance works are under various stages of implementation.

2. It is proposed to take up a dedicated Water Supply Scheme from Mullai Periyar River as water source at an estimated cost of ₹ 1020.00 crore under AMRUT scheme.

3. Under Swachh Bharath Mission (SBM), 6619 IHHLs have been constructed at an estimated cost of ₹ 6.32 crore.

4. Under Swachh Bharath Mission (SBM), 56 Community Toilets have been constructed at an estimated cost of ₹ 3.48 crore.

5. For the implementation of the decentralized Solid Waste Management at ward level in Madurai Corporation, work orders have been issued for construction of 23 Micro Composting Centres at a cost of ₹ 18.99 crore and the works are in progress. Works will be completed before 31.07.2019.

6. In order to ease the Waste Collection work in the wards in Madurai Corporation, work orders have been issued sanctioning 250 Battery Operated Vehicles at a cost of ₹ 4.50 crore. Procurement of the above vehicles will be completed before 31.07.2019

7. The roads in the city area which have not been re-laid for more than five years have been identified and work orders have been issued for laying B.T. works and Paver Block roads to a length of 51.85 Kms, at an estimated cost

of ₹25.56 crore under Tamil Nadu Urban Road Infrastructure Programme 2018-19 and works are under progress. Works will be completed by 31.10.2019.

8. Under Infra Gap Filling Fund, work orders have been issued for construction of 54 quarters for Permanent Sanitary Workers employed in Madurai Corporation at an estimated cost of ₹ 5.00 crore at M.M.C. Colony in Zone-4, Ward No. 94 and the works are in progress. Works will be completed by 31.10.2019

### **2.19.2 Coimbatore Corporation**

Coimbatore Corporation has been upgraded as Corporation on 01.05.1981. As per 2011 census, the population is 16,01,438. The Corporation consists of 100 wards with an extent of 265.36 Sq.km with an average annual income of ₹ 681.44 crore.

During the year 2018-19, the following projects were taken up for implementation:-

1. Under Smart City Mission, 34 works at a cost of ₹ 1178.20 crore have been sanctioned. Out of this, 11 works have been completed. The balance works are under various stages of implementation.

2. 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, 45% works have been completed and the balance works are in progress.

3. Implementation of 24X7 Water Supply Scheme in the erstwhile Corporation area at a cost of ₹ 506.04 crore has been sanctioned under AMRUT 2016-17. Scheme study work has been completed and the water supply pipe line maintenance works have been started and it is in progress.

4. The Underground Sewerage Scheme to Kurichi and Kuniyamuthur added areas at a cost of ₹ 442.00 crore under AMRUT 2016-17 with the assistance of Asian Development Bank has been taken up in 2 packages and construction of Underground Sewerage Chamber works and

Underground Sewerage pipe line laying works are in progress.

5. Under AMRUT 2015-16 to 2017-20, improvements of 21 Parks at an estimated cost of ₹ 14.49 crore have been taken up in three phases and all the works have been completed.

6. Under KfW, 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 crore. 85% works have been completed and remaining works will be completed by August 2019.

7. Under the Shelter for Urban Homeless component of National Urban Livelihoods Mission, 5 shelters have been constructed at an estimated cost of ₹ 1.96 crore.

8. Under Integrated Urban Development Mission, during the year 2018-19, road improvement works for a length of 35.86 Kms at an estimated cost of ₹ 25.00 crore have been taken up and they are in progress.

### **2.19.3 Tiruchirappalli Corporation**

Tiruchirappalli Corporation has been upgraded as Corporation on 01.06.1994. As per 2011 census, the population is 9,16,857. The Corporation consists of 65 wards with an extent of 167.23 Sq.km with an average annual income of ₹ 465.60 crore.

During the year 2018-19, the following projects were taken up for implementation:-

1. Under Smart City Mission, for conversion of all the existing Sodium Vapour Lamps, CFL and Metal Halide Lamps to new LED lamps at an outlay of ₹ 8.70 crores in Package No.1 and ₹ 14.70 crores in Package No.2, work orders have been issued and the work is in progress.

2. Under Swachh Bharath Mission, out of 3170 IHHLs, 1955 IHHLs have been completed during the year 2018-19. The construction of balance work is in progress.

3. Under AMRUT 2017-20, in Srirangam, Ariyamangalam and Ponmalai Divisions, 7 Park Improvement works were taken up at a cost of

₹ 385.575 lakhs and all the works have been completed and put into public use.

4. Under Water Supply Improvement Scheme, in the newly added areas in wards from 61 to 65, water supply improvement work at an estimated cost of ₹ 63.70 crore has been taken up and 135 LPCD drinking water will be supplied.

5. Under AMRUT Scheme, Under Ground Sewerage System (Phase-1) has been taken up in the left-out areas at an estimated cost of ₹ 344 crore and works are in progress. Action has been taken to call re-tenders for the Under Ground Sewerage System (Phase-2) works in the remaining left out areas which is taken up at an estimated cost of ₹ 312.14 crore.

#### **2.19.4 Salem Corporation**

Salem Corporation was upgraded as Corporation on 01.06.1994. As per 2011 census, the population is 8,34,792 and total number of wards are 60, The total extent is 91.34 sq.km. with an average annual income of 197.91 crore.

During the year 2018-19, the following projects were taken up for implementation:-

1. Under SMART City scheme, 39 works at an estimated cost of ₹ 941.30 crore has been taken up and the works are in various stages of implementation.

2. During the year 2018-19, under Tamil Nadu Urban Road Infrastructure Project, 110 road works to a length of 46.040 K.Ms have been taken up at an estimated cost of ₹ 26.20 crore with Government grant.

3. Under the Corporation General Fund, 190 road improvement works to a length of 67.332 K.Ms have been taken up at an estimated cost of ₹ 40.00 crore and the works are in progress.

4. Under Integrated Urban Development Mission 2018-19, 117 road works to a length of 29.389 K.Ms. have been taken up at an estimated cost of ₹ 21.10 crore with Government grant.

5. Under Swachh Bharath Mission, for Solid Waste Management, 10 new vehicles at an estimated cost of ₹ 239.30 lakhs has been sanctioned.



6. Under rule 110 announcement, Amma Eco Pavilion in the New Bus Stand complex has been taken up at an estimated cost of ₹ 50.00 lakhs.

### **2.19.5 Tirunelveli Corporation**

Tirunelveli Corporation has been upgraded as Corporation on 01.06.1994. As per 2011 census, the population is 4,74,838. The Corporation consists of 55 wards with an extent of 108.65 Sq.Km. The average annual income is ₹ 462.81 crore.

During the year 2018-19, the following projects were taken up for implementation:-

1. Under Smart City Mission, ₹ 1074.67 crore was allotted for 31 works. Out of this, 9 works taken up and the works are in various stages of implementation.

2. Sanction has been accorded in G.O.(D) No.09, Maws Department Dt.27.01.2014 for 50 MLD Water Supply Scheme for Tirunelveli Corporation from Ariyanayakipuram Dam Catchment area under KfW Fund at an estimated cost of ₹ 230.00 crore and work order has been

issued by the TWAD Board. The works are in progress. The above scheme works will be completed by 30.09.2019.

3. Work orders have been issued for implementation of Underground Sewerage scheme in the left-out areas of Tirunelveli Corporation under AMRUT 2016-17 at an estimated cost of ₹ 289.01 crore and at an estimated cost of ₹ 381.86 crore in Phase-II with the financial assistance of ADB and AMRUT and works are in progress. The above scheme work will be completed before 31.12.2021.

### **2.19.6 Erode Corporation**

As per 2011 census, the population of Erode Corporation is 4,98,121 and the extent is 109.52 Sq.Km consisting of 60 wards. The average annual income of this Corporation is ₹ 486.15 crore.

During the year 2018-19, the following projects were taken up for Implementation.

- Under Erode Smart City Mission, out of 16 projects at an estimated cost of ₹ 986.78 crore, 12 projects

have been taken up at a cost of ₹ 651.65 crore. Out of these, 9 works are under progress and 3 works are yet to be commenced. For taking up the remaining works, the process are in various stages.

- Dedicated Water Supply Scheme from Urachikottai at an estimated cost of ₹ 484.45 crore has been taken up under AMRUT. This works is being executed through the Tamil Nadu Water Supply and Drainage Board, 71% of works has been completed and the remaining works are under progress.
- Under 14th Central and 5th State Finance Commission grants, 7 road restoration works for a length of 3.11 k.ms have been taken up at an estimated cost of ₹ 2.63 crore, in which 6 works have been completed and the remaining work is under progress.
- Under O&M Gap Filling Fund, 4 works have been taken up at an estimated cost of ₹ 1.90 crore. One work have been completed and the remaining works are under various stages.

- Under TURIP, 4 road restoration works have been taken up for a length of 7.02 K.ms at an estimated cost of ₹ 10.62 crore. The works are under various stages.
- Under Swachh Bharath Mission, construction of 10462 Individual house-hold latrines have been taken up at a cost of ₹ 12.55 crore, in which 3202 IHHL units have been completed and the balance works are under progress.
- Under Swachh Bharat Mission, supply order issued for purchase of 2 Jet roding machines at a cost of ₹ 65.00 lakhs.
- Under Infra Gap Filling Fund, construction of sanitary workers quarters at an estimated cost ₹ 3.00 crore and construction of slaughter house at an estimated cost of ₹ 75 lakhs have been taken up and the works are in nearing completion stage.
- Under KfW fund, Underground Sewerage Scheme has been taken up at an estimated cost of ₹ 209.22 crore and 93% of works have been completed and the remaining works are under progress.

- Under KfW fund, Rejuvenation of Ganiravuthar Kulam work has been taken up at an estimated cost of ₹ 5.95 crore and the work is to be started shortly.
- Under Corporation general fund, 9 road restoration works for a length of 41.785 kms have been taken up at an estimated cost of ₹ 40.00 crore and the works are under progress.

### **2.19.7 Tiruppur Corporation**

As per 2011 census, the population of Tiruppur Corporation is 8,77,778 and the extent of area is 159.35 sq.km., with an average annual income of ₹ 206.28 crore.

During the year 2018-19, the following projects were taken up for implementation:-

❖ Under Smart City Mission, 26 works are proposed at an estimated cost of ₹ 1103.63 crore. Out of these, work orders have been issued for 18 works and these works are in progress and the balance works are under various stages.

❖ Under AMRUT 2015-16, Water Supply Improvement Scheme has been taken up at an estimated cost of ₹ 250 crore and work is under progress.

❖ Under AMRUT scheme, administrative sanction was obtained for implementing New Water Supply Scheme in Tiruppur Corporation at an estimated cost of ₹ 992.94 crore. The above scheme estimates has been divided into 5 Packages. Out of these, work orders have been issued for 4 Packages and for the remaining one work LoA issued.

❖ Under AMRUT scheme, administrative sanction has been obtained for implementation of Under Ground Sewerage Scheme in the left-out areas of Tiruppur Corporation at an estimated cost of ₹ 525.92 crore. The above scheme estimates have been divided into 4 Packages and the works are in various stages of implementation.

### **2.19.8 Vellore Corporation**

The Vellore Corporation consists of 60 Wards with an extent of area is 87.915 sq.km. As per

2011 census, the population is 5,04,079. The average annual income is ₹ 99.73 crore.

During the year 2018-19, the following projects were taken up for Implementation.

1. Under Smart City Mission, 34 works were taken up at an estimated cost of ₹ 883.29 crore and all the works are in progress

2. Water Supply Improvement Scheme has been taken up under AMRUT 2015-16 at an estimated cost of ₹ 234.93 crore and works are in progress.

3. The Underground Sewerage Scheme to the added areas and omitted areas of Vellore Corporation has been taken up at an estimated cost of ₹ 343.69 crore in Phase II under AMRUT 2016-17 and in phase I with a project cost of ₹ 248.26 crore and the works are in progress.

4. 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 and all the works have been completed and put into use.

5. Under the Shelter for Urban Homeless component of National Urban Livelihood Mission, sanction has been accorded for construction of 2 Shelters for Urban Homeless at an estimated cost of ₹ 83 lakhs. Out of this, one work has been completed and the remaining work is under progress. Work will be completed before 31.7.2019.

6. Under O&M Gap Filling fund, ₹ 2.50 crore has been sanctioned for the construction of Sanitary Workers Quarters and works are in progress.

### **2.19.9 Thanjavur Corporation**

Thanjavur Corporation was upgraded as Corporation on 19.02.2014. As per 2011 census, the population is 3,51,655 with an extent of area of 128.02 Sq.Km. The annual average income is ₹6016.99 lakhs.

During the year 2018-19, the following projects were taken up for Implementation.

1. Under Smart City Mission, 30 works are proposed at estimated cost of ₹ 1001.29 crore. Out of these, one work is completed and 19 are in progress.



2. Under AMRUT 2015-16, Water Supply Improvement Scheme work has been taken up at an estimated cost of ₹ 48.14 crore and the work has been completed.

3. 4 Parks have been taken up at a cost of ₹ 3.09 crore under AMRUT (2017-2020) and the works are completed.

4. Under TURIP scheme, during the year 2018-19, 40 B.T. road works have been taken up at an estimated cost of ₹ 15.25 crore. Work orders have been issued and the works are in progress.

5. Under IGFF 2017-18, the work of construction of new Corporation Office building has been taken up at an estimated cost of ₹ 6.50 crore and work is in progress.

6. Under O & M GFF 2017-18, Construction of Gasifier Crematorium in Marikulam Burial Ground at an estimated cost of ₹1.00 crore has been taken up and the works are in nearing completion.

### **2.19.10 Dindigul Corporation**

Dindigul Corporation was upgraded as Corporation on 19.02.2014. As per 2011 census,

the population is 2,07,225 and the extent of area is 14.01 Sq.Km with an average annual income of ₹ 56.30 crore.

During the year 2018-19, the following works were taken up for implementation:-

❖ Under AMRUT Scheme 2017-2020, a sum of ₹ 2.67 crore has been sanctioned for improvement of 7 parks. Out of these, 5 works have been completed and other 2 works are in progress.

❖ Under Swachh Bharath Mission, Administrative sanction has been accorded for Solid Waste Management Works including purchase of vehicles, construction of Micro Composting Centre and Compost Yard improvement at an estimated cost of ₹ 13.89 crore. Under this scheme, vehicles have been purchased for Primary & Secondary collection of Solid Waste and put into use. The infrastructure development works in the Murugabavanam Compost Yard are in nearing completion at an estimated cost of ₹2.04 crore. The construction work of Micro Composting Centres at 12 places are in progress at an estimated cost of ₹ 8.35 crore.

❖ Under Swachh Bharath Mission 2017-18, construction of Community Toilets at 12 places at an estimated cost of ₹ 1.22 crore is in progress.

❖ Under National Urban Health Mission, a sum of ₹ 1.80 crore has been sanctioned for construction of 3 Primary Health Centres and two primary health centres have been constructed. Construction work of Primary Health Centre in Savariyar Palayam is in progress.

❖ Under Tamil Nadu Urban Road Infrastructure Development Programme 2018-19, a sum of ₹ 10.00 crore has been sanctioned for restoration of roads damaged due to implementation of UGSS works and Improvement of Water Supply works for a length of 25.165 Kms. Work orders have been issued and works are under progress.

❖ Under Infrastructure Gap filling fund and Operation and Maintenance Gap Filling fund, work orders have been issued for providing Bio Methanation Plant to supply fuel to Gasifier Crematorium at a cost of ₹ 45 lakhs and the works are in nearing completion.

❖ Under Infrastructure Gap filling fund and Operation and Maintenance Gap Filling fund, work order has been issued for construction of Community Kitchen and Bio Digester to the Community Toilet at an estimated cost of ₹ 25 lakhs and the works are in nearing completion.

❖ Under 14th Central Finance Commission Grant 2017-18, a sum of ₹ 3.00 crore has been sanctioned for Improvement of Road Works. Out of 6 Packages taken up at an estimated cost of ₹ 50.00 lakhs each, 4 package works have been completed and works on remaining 2 packages is under progress.

❖ Under Infrastructure Gap filling fund 2016-17, work order has been issued for improvement of Kamarajar Bus Stand at an estimated cost of ₹ 5.00 crore. For underground two wheeler parking, roof slab concrete has been laid and the remaining works are in progress.

❖ Under Swach Bharath Mission - Solid Waste Management Scheme 2018-19, for removal of legacy waste dumped in the Murugabavanam Compost Yard through Bio Mining Process, a sum of ₹ 13.16 crore has been sanctioned.

❖ Under Capital Grant Fund, work order has been issued on 1.3.2019 for construction of additional water storage tank in order to increase the water storage capacity in Athoor Kamarajar Sagar Dam at an estimated cost of ₹ 11.15 crore.

### **2.19.11 Thoothukudi Corporation**

The population of Thoothukudi Corporation as per 2011 census is 3,72,408 and the extent of area is 90.66 sq. km. with an average annual income of ₹ 107.79 crore.

During the year 2018-19, the following projects were taken up for implementation:-

1. Under TURIP 2018-19, a sum of ₹ 12.00 crore has been allotted for restoration of 20.44 kms damaged roads due to the implementation of WSIS, UGSS and Natural Calamities. Out of these, 29 road works were taken up, 15 road works have been completed. The balance works are under progress.

2. Under IUDM 2018-19, for restoration of 17.82 kms damaged roads due to the implementation of WSIS & UGSS, 40 road works have been taken up

at an estimated cost of ₹ 10.55 and the works are in various stages of implementation.

3. As per the announcement made by the Honourable Chief Minister of Tamil Nadu under rule 110 on the floor of the Assembly, for providing storm water drains in Thoothukudi Corporation area, in G.O.Ms.No.6, MA&WS (MC6) Department, Dated. 23.1.2018 with the financial assistance under World Bank and TNSUDP a sum of ₹ 96.12 crore has been sanctioned. The work has been taken up in 6 packages, tenders have been called for and work orders issued. The works are under progress.

4. Under Swachh Bharath Mission Solid Waste Management Fund 2017-18, a sum of ₹ 12.43 crore was sanctioned by the State Project Sanctioning Committee. Out of this, sites have been identified for establishment of 16 Micro Composting Centres and works have been started. Out of this, the construction of 14 Micro Composting Centres have been completed and construction of 2 Micro Composting Centres are in progress. For these works, 74 New Light Motor Vehicles have been purchased and put into use. For purchase of a de-silting machine, work order has been issued.

### **2.19.12 Hosur Corporation**

Hosur Municipality has been upgraded as Corporation on 01.03.2019. As per 2011 census, the population is 2,45,354. This Corporation consists of 45 wards with an extent of 72.41 sq.km. and an average annual income of ₹ 100.95 crores.

### **2.19.13 Nagercoil Corporation**

Nagercoil Municipality has been upgraded as Corporation on 01.03.2019. As per 2011 census, the population is 2,60,315. This Corporation consists of 52 wards with an extent of 49.10 Sq.Km. and an average annual income of ₹ 80.25 crores.

### **2.19.14 Avadi Corporation**

Avadi Municipality has been upgraded as Corporation on 17.06.2019. As per 2011 census, the population is 3,44,721. This Corporation consists of 48 wards with an extent of 65 Sq.Km. and an average annual income of ₹ 66.78 crores.

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

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

For the year 2018, the Tiruppur Corporation was adjudged the best among the Corporations (Cash Prize of ₹ 25 lakh). Kovilpatti, Cumbum and Sirkazhi 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 2018.

### **2.20.1 Swachh Survekshan 2019 awards by Government of India**

Swachh Survekshan is being conducted every year under the scheme of SBM and the ULBs which perform better in the area of cleanliness



and sanitation are facilitated. During Swachh Survekshan 2019, Greater Chennai Corporation, Thiruverkadu, Bhavani Municipalities and Kottakuppan, Thiruporur, Kugalur, Agaram and Melathirupanthuruthi Town Panchayats had been selected as clean Urban Local Bodies and were awarded with citations during the award ceremony held in New Delhi on 06.03.2019.

### **3. Greater Chennai Corporation**

Chennai City is the biggest and the most important urban agglomeration in Tamil Nadu. This City portrays both historical and modern contemporary Indian culture. The Corporation of Chennai, established on 29th September 1688, is the oldest Municipal Institution in the Country and second oldest in the World. It has a glorious 331 years of history and carries good mix of heritage as well as modern infrastructure facilities. It derives its statutory authority from the Chennai City Municipal Act, 1919. Corporation of Chennai was renamed as "Greater Chennai Corporation" by late Hon'ble Chief Minister of Tamil Nadu on 29.01.2016. The population of Greater Chennai Corporation as per 2011 census is 67.27 lakhs.

After the expansion of area from 174 sq.kms. to 426 sq.kms in 2011 by inclusion of 42 local bodies, it is the 4th largest Municipal Corporation in the Country. The 155 divisions which were in existence prior to this expansion have been re-organised into 107 divisions and newly included local bodies have been organised into 93 divisions thereby forming 200 divisions. They are 3 Regions,

namely, North, Central and South Region, each comprising of 5 zones and headed by Deputy/ Joint Commissioners

Subsequent to the expansion, the Government have sanctioned 784 additional posts, to augment the human resources and for catering to additional responsibilities in an effective manner. This has facilitated quick response in decision making as well as grievance redressal to the satisfaction of public.

### **3.1 Amma Unavagam**

The late Hon'ble Chief Minister of Tamil Nadu Amma 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 being 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, CurryLeavesRiceandLemonRice)for₹5, curdricefor ₹ 3 and in the evening 2 chapathis with dhal for ₹ 3 to benefit the poor and needy.

61.72 crore idlis, 20.93 crore packet of variety rice and 28.46 crore chapathis have been served so far through Amma Unavagams. Through these Amma Unavagams, approximately 3.5 lakh poor people are being benefitted every day. Amma Unavagam project has been considered as the best social security programme in the World and neighbouring States like Andhra Pradesh, Telangana and Karnataka have replicated this model.

Workers registered in the Tamilnadu Construction Workers Welfare Board are also being served free food from 04.03.2019. About 25484 construction workers are benefitted from 04.03.2019 to 21.06.2019 by this scheme. The above cost is being reimbursed from the Tamilnadu Construction Workers Welfare Board.

### **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" where by purified drinking water would be given to fulfill the desire of poor and deprived section of the society to get R.O treated water at no cost.

Till date 50 drinking water dispensing machines have been installed at a cost of ₹ 5.30 crore in low / medium income residential localities. These plants are having production capacity of 2,000 liters per hour which is expandable depending on the local demand.

By this scheme each family is provided with 20 liters of purified drinking water per day at no cost. 29.16 crore liters of purified water have 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

shall be there for every 50,000 population. The Greater Chennai Corporation is running 140 Urban Primary Health Centers. So far, patients with communicable and non-communicable diseases were only treated in UPHCs. Now, the other medical services like ante-natal, post-natal, child health care and basic diagnostic investigation are being provided under one roof. There is one Urban Community Health Center for every 5 lakh population, with one Center per Zone (with beds and upgraded diagnostic facilities etc). Thus totally 15 UCHC are running successfully, at present.

This scheme is being administered by Chennai City Urban Health Mission and a sum of ₹ 278.54 crore has been allotted from National Urban Health Mission to Greater Chennai Corporation till 2018-19 for carrying out NUHM activities.

Approval has been given for construction of new buildings to 34 UPHCs and 8 UCHCs at ₹ 75 lakh per UPHC and ₹ 9 crore per UCHC respectively. Construction has been completed in the 20 UPHCs and 4 UCHCs. Even though Construction is in different stages in the remaining 14 UPHCs and 4 UCHCs, they are functioning in the existing old

buildings. Approval for renovation / up gradation work has been sanctioned for 100 existing UPHCs at ₹ 10 Lakh per UPHC. Renovation has been carried out in 96 UPHCs.

In Greater Chennai Corporation, work is on progress for establishment of 31 Haemo dialysis units. 21 of these units are sanctioned under National Urban Health Mission and 10 units are taken up under sponsorship of NGO (Rotary International).

1025 women groups called Mahila Arogya Samithi are formed in slum areas to propagate awareness on Health related issues among the public residing in the most vulnerable areas.

Polyclinics are functioning in 36 centers (UCHCs/UPHCs/EOCs and other facilities) in GCC between 4.30 pm to 08.30 pm on weekdays from Monday to Saturday. Following speciality services are provided:-

- General Medicine
- O&G

- Pediatrics
- Psychiatrist
- Ortho
- Physiotherapy
- Dental
- Ophthalmology
- Dermatology
- E N T

To provide health facilities to people below poverty line and slums at their residential locations itself, a sum of ₹ 59.05 lakhs has been approved and released under National Health Mission during the year 2018-19 for 5 clinics in caravan and the work is under process and nearing completion.

### **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 and totally 5,80,000 patients have been treated in these Clinics so far.

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

At present the Greater Chennai Corporation is running 38 shelters for urban homeless and 13 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, special shelters at 7 major Government Hospitals have been established for attendants of the in-patients as given below:

<b>Name of the Government Hospital</b>	<b>No. of shelters</b>
• Rajiv Gandhi Government Hospital	02
• Kilpauk Hospital	02

<b>Name of the Government Hospital</b>	<b>No. of shelters</b>
• Institute of Obstetrics and Gynecology	2
• Institute of Child Health	1
• RSRM Hospital	2
• Stanley Hospital	2
• Government Kasturba Gandhi Hospital	2

### **3.5.2 Other Category of Shelters**

Apart from the above special shelters in hospitals, shelters for vulnerable section of population are established by Greater Chennai Corporation as given below:-

<b>Sl. No</b>	<b>Types of Shelter</b>	<b>No. of Shelters</b>
1	Children's Shelter (Girls)	3
2	Children's Shelter (Boys)	5
3	Developmental disability children shelter (boys)	1
4	Women's shelter	9
5	Men's shelter	12

<b>Sl. No</b>	<b>Types of Shelter</b>	<b>No. of Shelters</b>
6	Women and Men 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
11	Transgender	1
Total		38

So far, a total of 10,150 homeless people and 32,733 attendants of in-patients have benefitted in these shelters. At present 1,879 beneficiaries are staying in these shelters.

### **Details of Beneficiaries**

<b>Categories</b>	<b>No of Beneficiaries</b>
Old age Pension	144
Voter ID	449
Aadhar Card	328

<b>Categories</b>	<b>No of Beneficiaries</b>
Driving License	16
Disability Pension	34
Disability ID Cards	66
School Admission	435
No of residents reintegrated	3466
No of residents rehabilitated	1,801

### **3.6 Public Health Preventive 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 Corporation or based on specific complaints from the public, dogs are sterilized and immunized against rabies and then released in the same area where they are caught as per the Animal Birth Control (Dogs) Rules.

During the financial year 2018-19 through these ABC centers 13,587 stray dogs have been

sterilized. 16 dog-catching vehicles are deployed for dog catching operations. Private dog-catchers are also engaged for catching and releasing of dogs.

As a special one-time programme, action is under progress for mass immunization against rabies for 57336 stray dogs at a cost of ₹ 77.48 lakhs.

### **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 successfully carried out by spraying of larvicides and fogging methods.

Fogging operations are carried out to control the adult mosquito with the help of 39 vehicle mounted fogging machines and 246 hand held fogging machines and 22 mini fogging machines. In addition, 445 hand held spraying machines and 15 power sprayers are used to spray larvicides in storm water drains, open drains and canals. Gambusia fishes are being introduced in 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 these two canals periodically which has resulted in deepening of these water bodies and ensured free flow of water in the canals and hence, the mosquito density has been reduced in the Chennai city, especially in areas like Dr.R.K Nagar, Tondiarpet, Korukuppet, Vysarpadi, Royapuram and Mylapore. For de-silting micro canals which are of narrower width, 3 Robotic Multipurpose Excavators machine have been purchased at a cost of ₹ 19.65 crore from Switzerland. By deploying these Robotic Excavator Machines, it is proposed to periodically de-silt and de-weed all the 30 micro canals under the control of Greater Chennai Corporation.

In addition, during the year 2016-17, 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.

### **3.7 Other Services of Public Health Department**

#### **3.7.1 Slaughter House**

Greater Chennai Corporation has constructed 4 Slaughter Houses and operating them for providing clean and wholesome meat to the public. Veterinary Assistant Surgeons conduct ante-mortem and post - mortem inspection of animals in the slaughter houses 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. After the

commencement of online services 1,99,53,409 birth certificates and 48,41,541 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 32 are Gasifiers and 7 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 12,705 students. In the year 2018-2019 totally 83,200 students studied in Greater Chennai Corporation schools.

Education Department of Greater Chennai Corporation is functioning to offer holistic and quality education to the needy children. Greater Chennai Corporation provides scholarships for the students to pursue their higher studies in all



streams including 150 students in Engineering, 150 in Arts and Science, 50 in Diploma, 50 in Teaching & Nursing, 15 in Law and 10 in integrated studies. Free uniforms are provided to students from 9th std to 12th std and Free Uniforms and note books are also supplied to all the kindergarten students of 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 established to train students in fine arts and music & dance. 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. Advanced smart class rooms were also established in 20 Higher Secondary Schools and 8 Middle Schools with advance technologies and 40 Tablets were provided to each class rooms.

The students studying in Greater Chennai Corporation Schools are actively encouraged to read “Tamil and English” newspapers daily at the Schools 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 teaching-learning process has been enabled by providing suitable equipments.

Special Programme namely “Spark Integrated Programme” is introduced for the students of high achiever ability. Under this programme, the students placed in the Residential Schools functioning at CGHSS Saidapet and CHSS Subbarayan Street are trained with special coaching, so as to secure maximum marks and to get admission into the premier institutions.

Every year students who have studied in Greater Chennai Corporation Schools secure high marks in +2 public exams and join various professional courses. One student got 1177/1200 marks which is the maximum mark scored by +2 Student and brought honour to Greater Chennai Corporation. In the year 2017-18, 76 students have joined in Engineering courses, 141 students in Arts and Science, 19 students in Nursing Institute, 4 students in Law courses and 13 students have joined Diploma courses and

they received scholarship from Greater Chennai Corporation for their higher studies.

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, electronics and mechanical. After the completion of the course, the trainees are provided with job opportunities in various industries by the institute.

Safe Nutritious Food (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 SNF @ 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 counsellors" of the school and necessary Handbook / Guide were distributed to them for further action.

Career Guidance Programme was conducted for 12th Students at Amma Arangam on 18th February 2019, 1,000 Students had participated in this Programme and all the students were given a guide/hand book for Career guidance after +2.

Breakfast Initiative Scheme for Chennai School Children was inaugurated by Honourable Governor of Tamilnadu in the presence of Honourable Ministers in Collaboration with an NGO Akshaya Patra at CHSS Thiruvanmiyur on 25.02.2019. 1,000 children have benefited by this programme and it is proposed to extend the scheme to 5000 children during 2019–20 and is also planned to extend it to all the Students of Chennai Schools in phases.

Chennai School students participated in the science competition under "Wings to Fly"

programme and 32 Students were selected in the finals to fly to Singapore as a part of Science Educational Tour.

During 2018–19, 4,837 students have appeared for the 12th Std examination, out of them 1,797 were boys and 3040 were girls. Out of these 4,377 students have passed out with flying colours. Out of them 1,534 were boys and 2,843 were girls. The pass percentage is 90.49 and there was an increase of about 1.7 percentage compared to 2019-18. 4 students secured 100/100 marks. Further 7 Students secured above 550 marks out of 600. 58 Students secured above 500 marks and 4 Schools secured 100 % result.

During the year 2018–19 5,730 students appeared for the 10th standard examination, out of this 2,734 were boys and 2,996 were girls. 5,297 students have passed out with flying colours. Out of them 2,431 were boys and 2,866 were girls. The pass percentage was 92.44. One student secured 100/100. Further 20 Students secured above 450 marks, 213 Students secured above 400 marks and 21 Schools secured 100% result.

## **3.9 Parks and Playfields**

### **3.9.1 Parks**

Greater Chennai Corporation maintains 632 parks, 99 centre medians, 99 traffic island parks and 163 road side parks to create green cover for the benefit of general public.

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

During the last three financial year, 30 new parks have been taken up at an estimated cost of ₹ 36.99 crore under the capital budget head and these works have been completed.

Further, Sewage Treatment Plant (STP) has been installed in 4 parks in Chennai city on a pilot basis and running effectively. The sewage water is tapped from the abutting main sewer line and

treated using the STP and the treated water is then used for watering the green space in the parks. Thus, these STPs help in overcoming the dependency on the ground water / water tanker lorries for watering of plants.

In continuation, STP has been erected in 4 Parks at T.Nagar as part of Smart City scheme and these plants have been functioning efficiently. Further, it is proposed to install sewage treatment plant in 4 more parks and the works are under progress. These works will be completed soon.

### **3.9.2 Plantation Strategy:**

Greater Chennai Corporation has taken sincere efforts to improve the green cover in Chennai City. GCC had appointed a technical consultant M/s Care Earth Trust Private Ltd., to prepare a plantation strategy. The main scope of this work was to identify the methodology and evolve strategies to increase the green cover in Chennai City and also to identify species which can survive in the local environmental conditions (Native Trees). As part of this strategy, it was proposed to plant 23,000 tree saplings in Chennai City during the financial

year 2018-19 at an estimated cost of ₹ 5.29 crore of which, 20,800 tree saplings have been planted so far and planting of balance tree sapling will be completed shortly.

### **3.9.3 Playfields**

Stadium department of Greater Chennai Corporation is maintaining 262 play grounds, 82 modern gyms (including 2 ladies gyms) 2 indoor stadium, 3 swimming pools, 37 tennis courts, 16 skating rinks, 13 indoor shuttle courts, 79 outdoor shuttle courts, 53 volley ball courts, 34 football ball courts, 23 basket ball courts, 2 hockey fields, 5 kabaddi courts, 4 cricket courts and one throw ball court which are located at various parts of Chennai City. More than 10,000 people are benefited daily from the existing sports infrastructure.

In this regard, local sports persons in various fields especially in Football, Weightlifting, Body building, 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 won medals. Further, sports persons practicing weightlifting and body building at the Corporation gyms have represented Indian team at the International level and won medals.

During the last three financial years (2015-16, 2016-17 and 2017-18), 3 playgrounds have been taken up for improvement of infrastructure at an estimated cost of ₹ 4.54 crore under the capital budget head and these works have been completed.

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

With a view to achieve the vision of developing Chennai as a world class city with infrastructure built to international standards, the late Honourable Chief Minister of Tamilnadu Amma announced a path breaking scheme called Chennai Mega City Development Mission (CMCDM). Under this special scheme, the Government have sanctioned an unprecedented amount of ₹ 1488 crore during 2011-2016 to the Greater Chennai Corporation.

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

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

<b>Year</b>	<b>No. of Roads laid</b>	<b>Length (in kms)</b>	<b>Expenditure (₹ in crore)</b>
2011-12	1367	344.53	331.06
2012-13	1932	353.67	404.74
2013-14	1215	254.80	388.05
2015-16	446	193.67	327.89
	4960	1146.67	1451.74

## **3.11 Road Maintenance Programmes**

### **3.11.1 Bus Route Roads**

The Greater Chennai Corporation maintains 471 Bus Route Roads to a length of 387 km. The up keeping of bus route roads is taken up with the grants provided under Tamil Nadu Urban Road Infrastructure (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. Sophisticated machines are used to relay the road to ensure smooth riding surface. Three layers have been laid namely profile correction (CAMBER), strengthening layer (Dense Bituminous Macadam) and wearing layer (Bituminous Concrete).

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

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

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

<b>Scheme</b>	<b>Year</b>	<b>No. of Roads</b>	<b>Length in Km</b>	<b>Expenditure (₹ in Crore)</b>
TURIP	2014-15	54	46.56	88.07
CMCDM	2015-16	198	152.56	285.19
TURIP	2015-16	92	76.61	117.36
TURIP	2013-14 Savings	42	29.35	43.78
SDRF	2015-16	103	40.83	55.7
TURIP	2016-17	40	24.17	18.3

<b>Scheme</b>	<b>Year</b>	<b>No. of Roads</b>	<b>Length in Km</b>	<b>Expenditure (₹ in Crore)</b>
TURIP	2016-17 Savings	8	4.43	4.31
TURIP	2017-18	7	5.68	9.70
TOTAL		544	380.19	622.41

The details of on going schemes are given below:-

<b>Scheme</b>	<b>Year</b>	<b>No. of Roads</b>	<b>Length in Km</b>	<b>Estimate (₹ in Crore)</b>	<b>Remarks</b>
TURIP	2018-19	18	9.54	13.73	Completed - 15 Progress - 2 To be taken up -1
CMCDM	2018-19	12	8.20	11.86	Completed - 7 Progress - 2 To be taken up -3
Total		30	17.74	25.59	

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 are 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 to Interior roads are being executed using capital funds 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:

<b>Maintenance of INTERIOR ROADS</b>				
<b>Scheme</b>	<b>Year</b>	<b>No. of Roads</b>	<b>Length</b>	<b>Expenditure</b>
			<b>(in kms)</b>	<b>(₹ crore)</b>
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	2,393.36	2,068.44
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	4,553.36	3,508.43

The details of on going schemes are given below:-

<b>Scheme</b>	<b>Year</b>	<b>No. of Roads</b>	<b>Length (in kms)</b>	<b>Estimate (₹ crore)</b>
CMCDM	2018-19	1,835	314.72	177.71
TURIP	2018-19	1,947	277.18	143.14
Total		3,782	591.90	320.85

### **3.12 Non Motorised Transport policy and Road Safety works**

#### **3.12.1 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 under TURIP 2012-13, which is well appreciated. In addition, forming of 23 pedestrian friendly footpath works to a length of 16.22 Km at an estimated cost of ₹ 22.01 crore are taken up under TURIP 2013-14 savings fund. 19 works have been completed. One work is under progress and 3 works have been dropped.

Under TURIP 2018-19 scheme, 31 pedestrian friendly footpath works to a length of 74.51 Km at an estimated cost of ₹ 46.86 crore are taken up. 2 works have been completed and 29 works are under progress. Further 85 footpath repair works to a length of 26.79 Km are taken up at an estimated cost of ₹ 7.56 crore. Out of these, 68 footpath repair have been completed and 10 works are in progress. Balance works will be taken up shortly.

For the first time, 77 pedestrian friendly 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 breakers 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. Cement Concrete 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 Greater Chennai Corporation.

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.

### **3.12.2 Road Safety works**

In order to curtail the increase in road accident in city roads, Greater Chennai Corporation has formed a separate Road Safety Cell to coordinate the development and implementation of policy and strategies to improve the safety of GCC roads. The Government has sanctioned ₹ 3.49 crore for the year 2017-18 and ₹ 2.49 crore for the year 2018-19 under Road Safety Fund for various road safety works like construction of speed breakers, painting of existing speed breakers in all bus route roads, construction of centre median, providing pedestrian crossings, painting of existing pedestrian crossings, for user lane discipline, road markings and traffic islands.

### **3.13 Marina Beautification Project**

As part of overall comprehensive redevelopment of Marina beach, it was proposed to reconstruct the existing compound wall on the western side corridor of Kamarajar Salai. The existing damaged, buried pillars are relocated and new pillars are installed so that it gives a timeless elegance. Ornamental non-corrosive cast iron grill work

between the pillars is also done. The existing footpath abutting the compound wall was relaid. 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 City has been selected as one of the first 20 "SMART CITIES" by the Ministry of Housing and Urban Affairs, Government of India. To implement the Smart City Project, a special Purpose Vehicle namely "Chennai Smart City Limited " was formed jointly by Government of Tamil Nadu and the Greater Chennai Corporation with the contribution of ₹ 1,000 crore. The Smart City works will be completed in 5 years period (2015-20). Under Smart City initiatives, 40 projects are taken up at an estimate cost of ₹ 947.35 crore.

As on date, 9 works have been completed at the cost of ₹ 28.73 crore, in which important works like Mobile phone based grievance redressal system "Namma Chennai" App, establishment of 28 Smart classrooms, retrofitting of 8 parks,

creation of Sensory Park, creation of Traffic Park, and formation of vertical Gardens in piers of Grade separators in Gopathi Narayana road were completed and are opened to public.

22 works at an estimated cost of ₹ 491.86 crore are under execution. The novel projects that are being executed include Integration of on-ground utilities and properties by Drone survey using GIS, multi level parking at junction of Theyagaraya road and Thanickachalam road, restoration of 54 water bodies & 15 temple tanks, restoration of Villivakkam tank, construction of pedestrian Plaza at Theyagaraya Road, installing solar rooftop in Greater Chennai Corporation buildings, implementation of 'on street' Parking Management System and implementation of Cycle Sharing System.

Tenders have been called for the 4 Projects at a cost of ₹ 191.90 crore in which important works like Skywalk connecting Mambalam Station and Theyagaraya Nagar Bus terminus and Installation of smart meters in Theyagaraya Nagar.

Tenders are to be called for 4 works at a cost of ₹ 225.86 crore in which important works are

Smart Street Redevelopment in South Usman road, North Usman road, 14 feeder roads to Pedestrian Plaza of Theyagaraya road and rejuvenation of 10 water bodies. For one work preparation of DPR at a cost of ₹ 9 crore is in progress.

### **3.14.2 Comprehensive Integrated Parking Management Project in Chennai**

Implementation of 'Comprehensive Integrated Parking Management Project' in Chennai city will be taken up by creating underground parking facilities, multi-level parking facilities to accommodate two lakh four wheelers and two lakh two wheelers. Feasible locations are identified. In continuation, appointment of consultant is under progress.

### **3.14.3 Intelligent Transport Systems Project - ITS (JICA Fund)**

The Chennai Metropolitan Area Intelligent Transport Systems Installation Project is being taken up at a cost of ₹ 660 crore with loan assistance of ₹ 465 crore from the JICA along with GoTN share of ₹ 195 crore to install efficient Traffic Information Systems (TIS) Traffic

Management Systems (TMS) and Bus Systems (BS). Administrative Sanction was accorded by Government Vide G.O.(2D) No 89 MA&WS (M.C.1) Department dated 27.11.2018

Request for proposal were called for selecting consultancy for preparing DPR, bid processing, implementation, supervision for installation of Chennai Metropolitan Area Intelligent Transport System.

#### **3.14.4 Nirbhaya Fund**

Safe City Project for Women's Safety in public places in Chennai is being taken up at a cost of ₹ 425.06 crore with GoI share of ₹ 255.04 crore and GoTN share of ₹ 170.02 crore. Administrative Sanction was accorded by Government Vide G.O.(2D) No. 86 MA&WS (M.C.1) Department, dated 20.11.2018. The sole intention of this project is improving safety of women in Chennai.

State level APEX committee and Steering Committee were constituted by Government. The project proposals were placed before the committee which accorded its approval. The

projects would be implemented by Greater Chennai Corporation, Greater Chennai Police, Metro Transport Corporation and Commissionerate of Social welfare. Tender process for procurement is being undertaken.

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

One of the main aims of Atal Mission for Rejuvenation and Urban Transformation (AMRUT) scheme is to increase the amenity value of cities by developing green spaces and well maintained open spaces (e.g.parks) with special provision for child - friendly components. The funding pattern for this scheme involves 50% share by Government of India, 20% by Government of Tamil Nadu and remaining 30% share by Urban Local Body.

Under this scheme, for the financial year 2015-16, 2016-17 and 2017-20, 51 new parks were proposed and the same has been completed at an estimated cost of ₹ 34.74 crore. Further, as part of reform initiative, GCC was allocated ₹3 crore under the AMRUT incentive fund pertaining



to the financial year 2017-18, 4 park have been proposed and works are under progress.

### **3.16 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 inter sections in 280 locations which includes maintaining of 16 subways at railway crossings and 5 Pedestrian Subways at important Bus Route Roads.

During the year 2017-18, 8 works at an estimated cost of ₹ 3.10 crore were taken up. Six works were completed [i.e., three maintenance works for bridges / subways / culverts / foot bridge in North region (Zone 1-5), Centre region (Zone 6-10) & South region (Zone11-15), Construction of one Box Culvert work across Mambalam Canal, improvement works in existing Bridge across Velachery Eri (Kakkan Bridge) and across Otteri Nullah connecting Strahans Road, Brick kiln road, Konnur High Road & Cooks road].

Construction of one Box Culvert work at Andavar Street is in progress. One Box Culvert work at Railway colony 3rd Street is to be taken up.

In the financial year 2018-19, 12 works at an estimated cost of ₹ 13.16 crore were taken up. Three works have been completed [i.e provision of Vertical Garden around the Piers of G.N. Chetty Road flyover (Smart City Fund) and Beautification to Existing bridge across B-Canal near kotturpuram MRTS (CRRT Fund)]. 9 works are in progress i.e, 2 Beautification works at existing Thiru-vi-ka bridge and Alandur Road Bridge across Adayar River (CRRT Fund), 2 Box Culvert at Kodungaiyur Dumping Ground (SBM Fund), Demolition and reconstruction of existing bridge at Kaliamman Koil Street across Virugambakkam-Arumbakkam Canal (TURIP Fund), Foot Bridge across CMWSSB channel in between Veerapandiyan street & Pillayar Koil Street (MLACDS Fund) and 3 maintenance works for bridges / subways / culverts / foot bridge in north region (Zone 1-5), Centre Region (Zone 6-10) & South region (Zone11-15).

### **3.17 Street Lights**

The Greater Chennai Corporation is maintaining 2,85,828 street lights. All are energy saving LED street lights.

In order to ensure safety of women, elderly persons and other road users, uniform street lighting has been 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 lights fittings are being provided throughout the city. LED street light fittings consume 45% lesser power than Sodium vapour lamps and Metal halide street light fittings. The project of providing 1,10,000 energy saving LED street light fittings at a total cost of ₹ 401.79 crore for the newly added areas has already been completed earlier.

During the year 2018-19 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 completed at an estimated cost of ₹ 80.14 crore.

Further, 87,892 high power sodium vapour lamps, high mast lights, park and play fields lights have been converted during 2018-19 to energy saving LED street lights at a cost of ₹ 141.35 crore with funding assistance from CGF and Greater Chennai Corporation Capital Funds.

**Greater Chennai Corporation is one of the few and first corporations in the country that has provided 100% energy saving LED street light fittings.** The Hon'ble Chief Minister of Tamil Nadu has inaugurated the project on 27.02.2019.

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 been reduced to ₹ 3.50 crore. Hence, ₹ 2.50 crore is saved per month and this resulted in a total savings of ₹ 30 crore per year towards the electricity consumption charges for street lights.

Work on the installation of solar roof top plants in 662 Greater Chennai Corporation buildings for

generating 3.064 MW solar electricity at a cost of ₹ 24.03 crore is in progress and will be completed soon. This work is implemented under Chennai Smart City Limited Fund.

### **3.18 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 31 canals for a total length of 49 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 Kosasthalaiyar, Coovum, Adayar and Kovalam basin for the length of 1,069.40 kms of Integrated Storm Water Drain network at a project cost of ₹ 4,034.30 crore.

In first phase, Adyar and Coovum basins, work have been taken up under World Bank fund under Tamil Nadu Sustainable Urban Development Project (TNSUDP) at a project cost of ₹ 1261.70 crore to a length of 405 km with 39 packages. In 35 packages 403 km (99%) of works have been completed as far as drains are concerned and 4 canals packages viz. Ambattur Sidco canal, Nolumbur Canal, Padikuppam Canal and Nandambakkam canal have been divided into 29 smaller packages and so far 93% of work has been completed. All works are nearing completion. People living in Ambattur, Valasaravakkam and Alandur areas will be greatly benefitted.

As far as the ISWD project for Kovalam Basin (M1,M2,M3)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 360 km. For

M3 component (Palavakkam, Kottivakkam, Neelangarai, Injambakkam, Sholinganallur, Kanathur and Uthandi) M/s Kocks Consultant appointed by KfW have submitted the revised DPR for M3 watershed for 52 km length at a cost of ₹ 270.38 crore for which KfW has issued no objection for calling tenders. Tender has been called on 14.11.2018 and opened on 01.02.2019, for which work order have been issued. The works will be commenced shortly.

In Kovalam basin for M1 and M2 component, KfW has appointed Consultant for DPR revision work and DPR has been received.

For implementing Kosasthalaiyar Basin project, revised DPR for construction of ISWD to a length of 763 km at a cost of ₹ 2518 crore has been submitted to Municipal Administration and Water Supply Department for sending the same to Ministry of Housing and Urban Affairs for financing this project. The proposal has been examined in the Ministry of Housing & Urban Affairs by the Committee to consider External Aided Project (EAP) proposal and forwarded to Ministry of Economic Affairs. In the 96th Steering Committee meeting of Department of Economics

Affairs held in New Delhi on 22.01.2019, Proposal was principally approved and as forwarded to Asian Development Bank (ADB). Approval of Asian Development Bank is awaited.

Hon'ble Chief Minister of Tamil Nadu has appointed 15 IAS Officers to oversee the flood mitigation during 2016 and 2017 monsoon for all the 15 Zones. These Monitoring Officers have visited the respective Zones extensively before, during and after the monsoon to oversee the preparatory work, the flood mitigation work and also to suggest the short term and long term mitigation measures. All these officers have given number of suggestions which involves smart intervention wherever required by way of construction cut and cover drains for shorter lengths so that the flood problem in the low lying area as well in the arterial roads would be totally avoided. In the meanwhile, TNUIFSL has appointed a Consultant who have had a exhaustive field visit and also interacted with all the Zonal Officials, Public Representatives as well as many Welfare Associations proposed various measures for taking up missing links drains constructions and drains surrounding the subways.



Estimates were prepared for all these works to the tune of ₹ 440 crore and the Government of Tamil Nadu has issued orders to take up work at 340 locations at a cost of ₹ 290 crore under CMCDM fund and 114 locations at a cost of ₹ 150 crore under Smart City fund. 85% of these works have been completed.

Under Smart City fund, missing links works have been taken up at 29 locations at a cost ₹ 80 crore and works are in progress. Further, works to be taken up at 85 locations at a cost of ₹ 55 crore. All of these works are started from the disposal points and hence the water flow is ensured.

During 2017 Monsoon, the entire Stephenson Road, Konnur High road and surrounding area have been inundated for several days. It was observed that the major canal (namely Ekangipuram canal) which dispose water from these area which was constructed as a twin drain during British period has collapsed and also choked due to extensive encroachment. 370 encroachers were identified as squatters on these drains. Hence, Government of Tamil Nadu has allocated ₹ 25 crore under

TURIF fund for demolition and reconstruction of this major canal and the interlinking of drains to a total length of 4,180m. The 370 families have been shifted and resettled in Okkiam Thoraipakkam TNSCB tenements. Now, the construction of canal and inter linking drains are taken up and 85% of works have been completed.

Water bodies /urban lakes are an intrinsic part of the ecosystem. They have traditionally served the function of meeting water requirements of the people, for recharging of ground water, preventing water logging and flooding in neighborhood.

In Chennai City, there are 210 water bodies. For centuries, these water bodies played a vital role in ensuring water security to Chennai and its surrounding areas. There is an urgent need to review these water bodies and rejuvenate its eco system, thereby ensuring sustainable water security.

Hon'ble former Chief Minister "Amma" has announced in the floor of assembly "Sustainable Water Security Mission" in the year 2015 for restoration and rejuvenation of water bodies and temple tanks.

Out of these 210 water bodies, 5 water bodies were already restored at a cost of ₹ 5.95 crore.

Villivakkam Tank which is of 25.5 acres is being taken up for eco restoration and rejuvenation at a cost of ₹ 16 crore and the work is in progress. Once, completed this will serve as big water holding tank for Villivakkam and also will house lots of recreational activities apart from relieving water stagnation at Sidco Nagar area. This is taken up with Smart City Fund.

Another 52 water bodies are taken up at a cost of ₹ 18.20 crore and the works are nearing completion. 2 more bigger water bodies are also proposed to be restored at cost of ₹ 25.29 crore.

The DPR has been prepared for restoration of 55 remaining water bodies at a cost of ₹ 45.66 crore in the Kosasthalayar water basin.

Under CSR initiative 38 water bodies are taken up for restoration and works are in progress. Balance 57 water bodies are to be taken up for restoration at a tentative cost of ₹ 50.51 crore and the DPR has been submitted by TWIC.

On completion of all these projects additional 1 TMC of water would be stored in these water bodies and shall recharge the groundwater table and also relieve the water stagnation in neighborhood.

Greater Chennai Corporation is maintaining 16 major canals of length 29 kms and 15 minor canals of length 20 kms, in total 49 kms. One Amphibian Equipment is used to clean the major canals and 3 Robotic Multipurpose Excavators are used to clean the minor canals by removing Water Hyacinth, Rank Vegetation, floating materials and desilting. In whole, all the canals are being cleaned twice in a year.

Previously, these kind of desilting and cleaning of canals using Special Equipments were not in practice. At present, next to Greater Mumbai Municipal Corporation, Greater Chennai Corporation has imported these kinds of Special Equipments from foreign countries. These machines are not only engaged in cleaning Hyacinth and rank vegetation, but also used in desilting the silt in canals where it is inaccessible for men and other machineries. After using these

machines, the width and depth of the canals to expanded thereby storm water flow capacities of canals are enhanced.

Work order has been placed to procure one more Amphibian and Robotic Multipurpose Excavator in addition to the existing Special Equipments, to increase the cleaning frequency of canals to thrice in a year.

### **3.18.1 Providing Trash Arrestors in Storm Water Drain Outfalls**

The river restoration and water body restoration are the buzzword of the present generation in a direction towards meeting the challenges forced by the climatic changes. In this scenario, it is the vision of the Government to keep the water bodies free from the trashes and other floating materials and thereby preventing them from entering into sea which endanger the marine species. Hence Greater Chennai Corporation as a prime initiatives started putting trash arrestors at the identified storm water drain outfalls totaling around 200. So far 67 trash arrestors have been installed at various locations. These trash arrestors will

prevent floating trash and hyacinth from entering into the water bodies and then to the sea.

### **3.19 Solid Waste Management**

Solid waste management is one of the prime civic responsibilities of the Greater Chennai Corporation which handles daily waste of around 5,250 MT/day at present.

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:

#### **3.19.1 Primary Collection**

At present, the primary collection consisting of door to door collection, which is being carried out by using 5,218 tricycles including privatized Zones of Greater Chennai Corporation.

The Corporation has deployed around 19,196 conservancy workers including the workers of privatized Zones. The attendance of conservancy

workers is monitored through Bio metric 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.

It is proposed to undertake the privatization project of Collection and transportation of solid waste in Zones 1, 2, 3 and 7 (Package-1) and Zones 11, 12, 14 and 15 (Package II) and as existing concessionaire period of privatized zones IX, X and XIII for work of Collection and Transportation of solid waste is going to end by September, 2019 privatization of conservancy operation for zones IX, X and XIII (Package – V) is also proposed. All the three packages are in tender stage.

### **3.19.2 Source Segregation:**

On the occasion of World environment day 5th June, Greater Chennai Corporation initiated awareness programme and motivated general

public to segregate at source by depositing wet waste in 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 waste generators shall segregate and store the waste in separate streams, Greater Chennai Corporation started collecting dry waste only on every Wednesdays on the occasion of birth anniversary of Mahatma Gandhi on 2nd October, 2017.

### **3.19.3 Secondary Collection and transportation**

The secondary collection of solid waste is carried out by deploying 135 HMTV compactors, 159 LMV compactors, 22 haulage tipper trucks, 114 HMTV tippers and 31 LMV tippers. Further, 16 mechanical sweepers are used for sweeping bus route roads and other main roads. 71 skid steer loaders and 22 front end Loaders are used for removal of solid waste and also Construction & Demolition waste. The solid waste is 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. During the financial years from 2014-15 to 2017-18, 8,253 compactor bins are procured for an amount of ₹ 14.56 crore.

Greater Chennai Corporation has imported 8 Tractor driven Beach Cleaning Machines to clean the Marina Beach and Elliots Beach sandy area to remove litters, Paper cups, trashes, Pet bottles, Glass pieces by adopting sand sieving technology at a total cost of ₹ 6.78 Crore under Swadesh Dharshan Scheme

Under SBM it is proposed to procure 411 battery operated vehicles at a cost of ₹ 7.40 crore. Out of these, 160 vehicles have been procured and deployed.

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 to operation in the financial year 2017-18. Further, construction of one Lorry operation depot at an estimated cost of ₹ 7.40 crore for the use of zone-1 is completed and put to operation in 2018-19.

### **3.19.4 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.

#### **3.19.4.1 Wet Waste**

Around 384 MT quantity of bio-degradable waste is being processed by following methods of waste processing:

- 148 Compost units
- 2 vermi compost units
- 33 Bio-Methanisation plants
- 7 Waste to Energy plants using BARC technology
- 443 well ring composting
- 175 old unused sintex tanks for processing compost

In GCC parks 537 mulch pits and 21 earthen pits are being used for processing of greenery and other biodegradable waste and 37 MT of capacity is being fed.

#### **3.19.4.2 Dry Waste**

- 64 Resource Recovery Centres are functioning in GCC for handling recyclable waste and recyclables are being sent to recyclers from Greater Chennai Corporation.
- As per Solid Waste Management Rules, 2016, every Wednesday the plastic wastes are being collected from 02.10.2017 onwards

#### **3.19.5 Disposal of Waste**

Greater Chennai Corporation has got 7 transfer stations and 2 yards namely Kodungaiyur of 269 acres and Perungudi wherein restricted to 200 acres.

#### **3.19.6 Bio-Mining**

Following Bio-mining projects are under progress:

1) Removal of 1,25,635.28 cu.m legacy waste at Sathankadu old dump site in Zone 1 through bio-mining process at an Estimated cost of ₹ 9.98 crore

2) Removal of 86,121.63 cu.m legacy waste at Athipet old dump site in Zone 7 through bio-mining process at an Estimated cost of ₹ 5.69 crore.

3) Removal of 37,509.81 cu.m legacy waste at Pallikaranai old dump site in Zone 14 through bio-mining process at an Estimated cost of ₹ 2.48 crore

Totally 37.89 acres of land will be recovered after Bio-mining

### **3.19.7 Ban on One time use and throw away Plastics**

The Greater Chennai Corporation has implemented the G.O.(Ms) No.84 MAWS (MC1) department, dated 25.06.2018 banning the one time use and throw away plastics irrespective of thickness w.e.f 01.01.2019 and so for 240 MT of plastics were seized. The seized plastic wastes at a nominal

cost are being sent to Sriperumpudur Plant for converting into fuel.

### **3.20 Swachh Bharath Mission:**

Greater Chennai Corporation has been declared as Open Defecation Free. Corporation has constructed 1,166 community toilet seats with an expenditure of ₹ 18.93 crore and 6,636 Individual Household Toilets (IHHL) with an expenditure of ₹ 4.68 crore. Greater Chennai Corporation has been recertified as Open Defecation Free (ODF) on 07.03.2019.

To improve the Solid Waste Management, 2,305 tricycles, 31,406 tricycle bins, 13,183 compactor bins, 2,775 rotomac bins were procured by Greater Chennai Corporation under Swachh Bharat Mission Fund with an expenditure of ₹ 25.80 crore.

4 mechanical sweepers have been purchased with 7 years Operation & Maintenance at total cost of ₹ 5.60 crore under Swachh Bharat Mission.

Greater Chennai Corporation has constructed Decentralized Waste Processing Units such as

3 Vermi Compost, 69 Ordinary Compost Yard, 9 Bio Gas Plants, 47 Resource Recovery Centres and 3 Bio Shredding Machine at an expenditure of ₹ 14.01 crore under Swachh Bharat Mission.

In addition, work on construction of 16 Resource Recovery Centers and 4 Compost yards at an estimate cost of ₹ 2.95 crore is in progress under 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, 11,235 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**

Tamil Nadu is one of the State constituting Town Panchayat as per the article 243Q of constitution of India. Most of the Town Panchayats are Tourism, Pilgrimage and Heritage in nature and functioning over a century and above. Directorate for Town Panchayats came into effect from 07.05.1981. At present, there are 528 Town Panchayats in this State. Town Panchayats are governed by the Tamil Nadu District Municipalities Act, 1920.

The Directorate of Town Panchayats is under the control of Municipal Administration and Water Supply Department headed by the Director with two Joint Directors at the State Level and assisted by seventeen Assistant Directors at the Zonal Level.

The Directorate is monitoring the functions of 17 Zonal Offices and 528 Town Panchayats which are classified into different grades, based on their annual income as detailed below.

<b>Grade</b>	<b>Annual Income</b>	<b>No. of Town Panchayats</b>
Special Grade	Exceeding ₹ 200 lakh	64
Selection Grade	Exceeding ₹ 100 lakh but not exceeding ₹ 200 lakh	202
Grade- I	Exceeding ₹ 50 lakh but not exceeding ₹ 100 lakh	200
Grade-II	Below ₹ 50 lakh	62
	Total	528

The Collector of the respective District is entrusted with the task of supervising the affairs of the Town Panchayats.

#### **4.1 Functions and Core Services**

The Town Panchayats provide a wide range of civic services to the public such as drinking water, street lights, sanitation, solid waste management, roads, drains and pavements, burial grounds and slaughter houses. Apart this, they also undertake construction and maintenance of bus stands, community halls and markets. Issuing birth and death certificates, trade licenses, levy and collection of taxes/ fees and approval of building



plans are the other statutory functions of the Town Panchayats.

## **4.2 Revenue**

Property Tax, Professional Tax, Water charges, Lease, Rents and User charges are the principal sources of revenue of the Town Panchayats. Surcharge on stamp duty, State Finance Commission (Devolution Grants) and Central Finance Commission grants are the other important sources of revenue of the Town Panchayats.

## **4.3 Infrastructure Development**

Town Panchayats take sustained efforts to create necessary infrastructure and ensure sustainable maintenance of all civic amenities. The Government accords highest priority for the creation of quality infrastructure. Works in Town Panchayats are also taken up by accessing financial assistance through various Central / State Government schemes.

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

Integrated Urban Development Mission (IUDM) has been launched by Hon'ble Amma, the former Chief Minister of Tamil Nadu during the year 2011 to improve the standards of basic infrastructures like roads and streets, drinking water, sewerage and sanitation, storm water drains, solid waste management, improvement of bus stands and parking places in an integrated manner.

Under this scheme, a sum of ₹ 1309.88 crore was provided during the period 2011-12 to 2016-17 to the Town Panchayats for 6992 infrastructure works like UGSS, Water supply and Storm Water Drains and all works were completed.

Scheme was re-launched during 2018-19. 252 works such as roads, water supply and storm water drains were taken up to a tune of ₹ 149.78 crore. Out of these, 54 works have been completed and the remaining 198 works are under progress.

#### **4.5 Water Supply**

The Government is firmly committed to provide a minimum of 70 LPCD of protected drinking

water to the people in all the Town Panchayats. Accordingly, various measures are being taken to provide 70 LPCD of protected drinking water supply to the people.

<b>Sl. No</b>	<b>LPCD</b>	<b>No. of Town Panchayats</b>
1	Below 70	NIL
2	70 to 89	381
3	90 and above	147
	Total	528

There are 51 stand alone water supply schemes maintained by Town Panchayats. The TWAD Board maintains Combined Water Supply Schemes in 335 Town Panchayats. At present, 31 major Combined Water Supply Schemes are being executed by TWAD Board.

In order to improve the water supply situation, the Government has taken up various water supply schemes availing financial assistance from various Schemes, such as IUDM, CGF, O&M and SADP. From the year 2011-12 to 2016-17, 5164 works such as providing additional bore wells with hand pump, mini power pumps in addition

to purchase of spare parts for the maintenance of existing hand pumps, rejuvenation of bore wells / 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 estimate of ₹ 452.78 crore. Out of which 5155 works have been completed and the remaining 9 works executed by TWAD are under progress in various stages.

An extensive study has been taken up with Executive Engineers and Assistant Executive Engineers and other stakeholders on the status of existing water supply system and to ascertain the shortfall in infrastructural facilities besides improving the existing supply level. Summer management plan was prepared and based on it, various water supply improvement schemes were taken up in the recent past as given below.

Sl. No	Name of the Scheme	2017-18		2018-19	
		No. of Works taken up	Estimate (₹ in Lakhs)	No. of Works taken up	Estimate (₹ in Lakhs)
1	Capital Grant Fund	16	2253.00	11	692.80
2	O&M Fund	9	253.00	8	480.00
3	IUDM	-	-	8	614.00
4	SDRF	1515	1638.05	10	352.00
5	General Fund	1951	2644.00	374	2438.74
6	Outlived CWSS	23	5585.72		
7	MPLAD	13	103.00	16	55.20
8	MLACD	265	747.63	77	283.50
9	SADP	56	647.80	32	304.10
	Total	3848	13872.20	536	5220.34

After implementation of the above schemes, the water supply level has increased in Town Panchayats and the corresponding per capita supply is also increased as detailed below.

<b>Sl. No</b>	<b>Year</b>	<b>No of Town Panchayats</b>	<b>Demand (in MLD) as per norms</b>	<b>Supply (in MLD)</b>	<b>Additional capacity (in MLD)</b>
1	2017-18	528	611	728	117
2	2018-19	528	616	745	129

## **4.6 Sanitation**

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

UGSS were taken up in 14 Town Panchayats at an out lay of ₹ 503.45 Crore.

## Completed Projects :

Sl. No.	Name of the District	Name of the Town Panchayat	Estimate Amount (₹ in crore)	STP capacity (MLD)	No of HSc's given	Inflow (MLD)	Outflow (MLD)
1	Kancheepuram	Mamallapuram	8.72	2.34	368	0.78	0.78
2	Thanjavur	Orathanadu	18.25	2.30	1108	0.90	0.90
3	Thoothukudi	Thiruchendur	14.48	3.90	86	1.00	1.00
		Total	41.45	8.54	1562	2.68	2.68

## Ongoing Projects :

Sl. No.	Name of the District	Name of the Town Panchayat	Estimate Amount (₹ in crore)	STP capacity (MLD)
1	Thiruvallur	Thirumazisai	40.60	3.00
2	Theni	Palanichettyatti	35.61	2.80
3	Villupuram	Ulunderpettai	39.54	3.15
4	Kancheepuram	Sriperumbudur	77.11	8.50
5	Nagapattianam	Velankanni	33.51	2.33
6	Kancheepuram	Thiruporur	42.00	4.02
7	Thiruvallur	Ponneri	54.78	6.52
8	Trichy	Manachanallur	30.11	6.41
9	Trichy	S.Kannanur	19.45	
10	Thanjavur	Vallam	34.51	2.35
11	Erode	Perundurai	54.78	3.14
		Total	462.00	42.22

UGSS proposal on cluster basis at Melachokkanathapuram Town Panchayat with Bodinayakanur Municipality at an estimated cost of ₹ 45.00 crore is being processed.



## **4.6.2 Septage Management**

Considering the higher investment and consequent economical strain on small and medium towns to maintain UGSS, as an alternative scheme to UGSS the Government have framed operative guidelines to implement Septage Management vide G.O. (Ms) No.106 Municipal Administration & Water Supply (MA3) Department, dated 01.09.2014.

As a Pilot scheme, Septage Management work has been taken up and completed at an estimated cost of ₹ 5.18 Crore in Karunkuzhi Town Panchayat, and functioning successfully.

Based on the excellent performance of the above scheme, Administrative Sanction has been accorded for providing Septage Management Scheme for 11 Town Panchayats namely Kunnathur, Kurumbalur, Pennadam, Alangayam, Seithur, Mudukulathur, Jalakandapuram, Pennagaram, Kaveripakkam, Alampalayam and Chengam vide G.O.(Ms)No 12 MA&WS (MA2) Department dated 21.01.2019 at a cost of ₹ 31.17 Crore under IUDM and followup action is in process.

Further, Septage Management is proposed in 58 Town Panchayats integrated with 52 Municipalities on cluster basis. Work order is issued in the following Town Panchayats.

<b>Sl. No</b>	<b>Name of the District</b>	<b>Name of the Town Panchayat covered in FSTP treatment clusters</b>
1	Madurai	A.Vellalapatti
2	Karur	Marudur
3	Ariyalur	Udayarpalayam
4	Kanyakumari	Reethapuram
5	Kanyakumari	Kallukuttam
6	Kanyakumari	Palappallam
7	Kanyakumari	Mandaikadu
8	Kanyakumari	Thingalnagar
9	Kanyakumari	Karungal
10	Kanyakumari	Neyyoor
11	Kanyakumari	Manavalakurichi
12	Kanyakumari	Kappiyarai
13	Tirunelveli	Ilanji
14	Tirunelveli	Pudur
15	Tirunelveli	Courtalam
16	Tirunelveli	Alwarkurichi
17	Tiruppur	Kolathupalayam
18	Vellore	Ammoor

<b>Sl. No</b>	<b>Name of the District</b>	<b>Name of the Town Panchayat covered in FSTP treatment clusters</b>
19	Theni	Pudupatti
20	Theni	Kamayagoundanpatti
21	Nagapattinam	Vaitheeswarankoil
22	Tirunelveli	Kalladaikurichi
23	Tirunelveli	Manimutharu
24	Tirunelveli	Melagaram
25	Tirunelveli	Panpoli
26	Tirunelveli	Achampudur
27	Tirunelveli	Aygudi
28	Tirunelveli	Vadakarai Keezhpudugai

Remaining proposal are under tender stage.

Feecal Sludge Treatment Plant (FSTP) was taken up at an estimated cost of ₹ 2.02 crore with the aid of Bill & Melinda Gates foundation (BMGF) in Periyanaickenpalayam Town Panchayat of Coimbatore District and works are under progress.

#### **4.6.3 Swachh Bharat Mission**

To make Tamil Nadu a clean and Open Defecation Free State, the Department have intensively improve sanitation to increase

the energy and capacity of the public. Under Swachh Bharat Mission, target have been fixed for construction of 2,26,907 Individual House Hold Latrines, conversion of 7794 numbers of insanitary Latrines into sanitary Latrines and construction of Community Toilets with 13,041 seats by dovetailing grant from Government of Tamil Nadu. Status of works taken is furnished as below.

<b>Sl. No.</b>	<b>Scheme</b>	<b>Target</b>	<b>Completed</b>	<b>Percentage</b>
1	Construction of Individual House Hold Latrines	226907	226907	100
2	Conversion of Insanitary Latrines to sanitary Latrines	7794	7794	100
3	Construction of Community Toilet	13041	11724	89

In all 528 Town Panchayats, proposals have been sent to Ministry of Housing and Urban Affairs for declaration of Open Defecation Free Status. Out of these, 525 Town Panchayats have been declared as ODF Town Panchayats. The remaining 3 Town Panchayats are being inspected by the Quality Control Officers of Government of India.

#### **4.6.4 Information, Education and Communication (IEC) Activities**

For the effective Information, Education and Communication (IEC) activities to create awareness on cleanliness, sanitation open defecation free and to efficiently handle the segregated Bio wastes and recyclable wastes, 1382 Animators have been engaged through Swachh Bharath Mission in all Town Panchayats. In order to equip the Animators, skill development training programs have also been rendered to them by the Directorate of Town Panchayats.

#### **4.7 Roads**

The Town Panchayats are maintaining the different types of roads as stated below:

<b>Sl. No.</b>	<b>Type</b>	<b>Length (Km)</b>
1	Black Topping Roads	15536
2	Cement Concrete Roads	5828
3	Paver Block	1119
4	Water Bound Macadam Roads	539
5	Gravel Roads	230
6	Earthen roads	2054
Total		25306

During the years 2011-2012 to 2018-19, improvements of roads are taken up under various schemes with an outlay of ₹ 2353.83 crore. Out of 6982 road works covering 7595 Kms, 6427 works covering 6685 Kms have been completed and put into public use. Remaining 555 works are under progress in various stages.

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

NABARD bank provides financial assistance to various activities, such as roads, bridges, construction of sanitary complex and other projects. The progress of the above scheme is detailed as below.

Sl. No	Year	No. of works	Amount (₹ Crore)	Length (in Km)	Remarks
1	2011-12 to 2016-17	2459	761.51	1922.21	All works have been completed.
2	2017-18	167	130.00	268.28	Out of 167 works, 166 works have been completed. Remaining one work is under progress
3	2018-19	258	200.00	416.89	Out of 258 works, 121 works have been completed. Remaining 137 works are under progress.
<b>Total</b>		<b>2884</b>	<b>1091.51</b>	<b>2607.38</b>	

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

With a view to upgrade the urban roads in the State of Tamil Nadu, Urban Road Infrastructure project is being implemented since 2011-12. The progress of the above scheme is given as below:

Sl No	Year	No. of works	Amount (₹ in crore)	Length (in Km)	Remarks
1	2011-12 to 2017-18	1771	469.16	1767.10	All works have been completed.
2	2018-19	276	253.74	458.79	191 Works have been completed. Remaining 85 works are under progress at various stages
Total		2047	722.90	2225.89	

### 4.8 Solid Waste Management

Improper handling of solid wastes leads to environmental degradation and adverse climate change. It causes severe impact on human life. Hence, by handling the solid wastes properly as per Solid Waste Management Rules 2016, the environment is protected and human health



quality parameter improves. Bye laws have been framed by incorporating the provisions of SWM Rules 2016 and follow up action is being taken with utmost priority.

In the bye laws, due provisions for collecting user charges and imposing spot fines for the violation of SWM Rules 2016 was provided. Source segregation of waste by resorting to the collection of dry waste including plastics is being practiced in all Town Panchayats. As a result of all the efforts taken in Solid Waste Management activities, 90% Door to door collection of waste and 86% source segregation is achieved in all the Town Panchayats.

2100 MT garbage is generated daily in which the organic waste constitutes 1032 MT, in-organic waste 850 MT and the remaining 218 MT as silt waste. 86 Town Panchayats which generates more than 5 MT per day have obtained authorisation from TNPCB.

Around 12,086 Self Help Group members are involved in both collection and segregation of wastes and 7006 sanitary workers are deployed in street sweeping/collection of solid waste for

effective implementation of the solid waste management in the Town Panchayats.

#### **4.8.1 Home Composting**

People residing in the households of Town Panchayats are encouraged to handle their waste themselves and produce manure in their own premises. Till now 10216 households are practising home composting. To promote home composting practice, Town Panchayats officials are conducting various awareness and training programmes to self help groups and interested residents. Further, training programme are being conducted to encourage roof top gardening in the houses having upstairs.

#### **4.8.2 Bio/Vermi Composting**

At present, organic waste is processed by bio-composting and decentralized composting method in 528 Town Panchayats. Every day, 110 MT of bio compost is produced by the Town Panchayats. Vermi composting is also done successfully in 249 Town Panchayats. Every day 17 MT of vermi compost is produced by the Town Panchayats. On an average, a sum of ₹ 40.34 Lakh

is earned by the Town Panchayats every year by sale of bio-compost and vermi compost.

### **4.8.3 Integrated Solid Waste Management Scheme**

During the year 2013-14 to 2018-19, under Integrated Solid Waste Management, 4828 works have been taken up by the Town Panchayats covering door to door collection, transportation, segregation, composting, resource recovery parks and Information, Education and Communication activities to public health staff, SHGs and Animators at a project cost of ₹ 330.02 crore.

### **4.8.4 Bio Methanation**

Bio Methanation is the process of treating wet waste in closed vessels into a stable residue and generate a methane-rich bio gas. The bio gas can be used as a source of renewable energy to produce electricity. Solid residue can be utilised as manure.

This innovative technology has been implemented in 5 Town Panchayats Viz., Mamallapuram, Sholinghur, Chengam, P.N.Palayam and Uthamapalayam. The energy

generated is being used for burning of street lights and cooking purposes.

Small Biomethanation plants are functioning in the following 11 Town Panchayats:-

<b>S No</b>	<b>Town Panchayat</b>	<b>District</b>
1	Papparapatty	Dharmapuri District
2	Kannankurichi	Salem District
3	Musiri	Trichy District
4	Sirugamani	Trichy District
5	Puliyur	Karur District
6	Punjai Thottakurichy	Karur District
7	Punjai Pugalur	Karur District
8	Sholavanthan	Madurai District
9	Uthamapalayam	Theni District
10	Periyanaickenpalayam	Coimbatore District
11	Chinnalapatty	Dindigul District

The Bio gas thus produced is being used for cooking purpose by the SHG members and anganwadi centre. In P.N.Palayam and Batlagundu bio gas is converted into electricity. The electricity is used in crematorium and for Water Supply.

#### **4.8.5 Bio Mining**

The quantum of legacy waste has been assessed and initially 25 Town Panchayats are selected for the year 2018-19 for Bio-Mining process and works are under progress at an estimated cost of ₹ 1630 lakhs through Swatch Bharat Mission (SBM)/Chennai Rivers Restoration Trust (CRRT).

#### **4.9 Smart Ward / Town Panchayat**

Two wards in each Town Panchayat having shown excellent performance in solid waste management and basic amenities have been selected as role model for the other wards in Town Panchayats. Based on the performance of these smart wards, the public in other wards will also get motivated to co-operate to implement the Solid Waste Management Rules and basic amenities.

Ponnampatti, Uthiramerur and Madukarai Town Panchayats have been identified as smart Town Panchayats for best practices in Solid Waste Management. Action plan has been devised to propose more number of Town Panchayats in future.

#### **4.10 Infrastructure Gap Filling Fund/Capital Grant Fund**

Financial allocation have been made under Infrastructure Gap Filling Fund to bridge the gap in providing Infrastructure facilities in Town Panchayats.

Under Infrastructure Gap Filling Fund, construction of office building, Water Supply, Solid Waste Management, Storm Water Drain, Slaughter House, Crematorium, Community Hall, Shandy, Bus stand, Burial Ground Improvement and ULB Contribution to the water supply/UGS Scheme are taken up and work progress is as given below.

<b>Sl. No</b>	<b>Year</b>	<b>No. of works</b>	<b>Estimate cost (₹ crore)</b>	<b>Remarks</b>
1	2011-12 to 16-17	805	327.30	All works have been completed.
2	2017 - 18	79	176.67	77 works have been completed and remaining 2 works are under progress
3	2018-19	104	105.66	All works are in progress.
	Total	988	609.63	

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

Financial allocation is made out of the devolution grant to bridge the gap under the above funds by way of providing Infrastructure facilities to the Town Panchayats and the progress is as detailed below:

<b>S. No</b>	<b>Year</b>	<b>No. of works</b>	<b>Estimate cost (₹ crore)</b>	<b>Remarks</b>
1	2011-12 to 2016-17	603	125.74	All works have been completed.
2	2017-18	91	58.89	87 works have been completed. Remaining 4 works are under progress.
3	2018-19	79	35.87	All works are in progress
Total		773	220.50	

#### **4.12 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. For the year 2017-18, a sum of ₹ 183.27 crore as 1st instalment and a sum of ₹ 208.55 crore as 2nd instalment was released under basic grant. Similarly, for the year 2018-19 a sum of ₹ 226.64 crore has been released as 1st instalment under basic grant. The above grant was utilized towards payment of contribution to Water Supply Projects, Payment of E.B. Charges, Payment of Water Charges, Solid Waste Management, Laying of Roads, footpaths and Park Improvements.

#### **4.13 Satellite Town**

In Sriperumpudur Town Panchayat, water supply, UGSS, Solid Waste Management works have been taken up under Satellite Town Scheme at an estimated cost of ₹ 123.75 crore. The funding pattern is 80% from GOI, 10% from GOTN and 10% ULB contribution. CMWSSB is the Implementing Agency and TUFIDCO is the Nodal Agency.



<b>Sl. No.</b>	<b>Name of the work</b>	<b>Project Cost (₹ in crore)</b>	<b>Stage of Progress</b>
1	Solid Waste Management infrastructure	4.44	completed
2	Comprehensive Water Supply Scheme	42.20	Works will be completed by September 2019
3	Comprehensive Sewerage Scheme	77.11	
Total		123.75	

#### **4.14 Housing for All (Urban)**

In order to provide quality and safe concrete houses to the Slum dwellers, Hon'ble Amma, the former Chief Minister announced an ambitious goal of Slum Free Cities under VISION - 2023. After that '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. Further, the above scheme has been integrated with Housing for All (Urban) Mission scheme by Government of India.

Under Housing for All (Urban) Mission scheme, Beneficiary Led construction component a total of 1,43,971 beneficiaries were identified with a

financial assistance of ₹ 2.10 Lakh per family (GoI Grant- ₹ 1.50 Lakh and GoTN Grant - ₹ 0.60 lakh) and in total an amount of ₹ 3023.39 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, 28,611 units have been completed and remaining 1,15,360 units are in progress in various stages. The Tamil Nadu Slum Clearance Board has so far released ₹ 1108.27 crore and same has been disbursed to the beneficiaries based on the Geo-tagging progress.

#### **4.15 National Urban Livelihoods Mission (NULM)**

Under the 'Deendayal Antyodaya Yojana- National Urban Livelihoods Mission (DAY-NULM)' in Town Panchayats, during 2017-18, one Normal Shelter for urban homeless at Veeravanallur was taken up and construction of 7 Special Shelters at Chitlapakkam, Ponneri, Natrampalli, Polur, Bargur, Denkanikottai and Uthangarai for staying of the attenders of inpatients in Government

Hospitals in Town Panchayats were also taken up at an estimated cost of ₹ 5.31 crore.

During 2018-19, construction of 27 Special shelters for Urban Homeless at 27 Town Panchayats at an estimated cost of ₹ 8.29 crore are approved and works are in progress.

#### **4.16 Street Lights**

There are 4,41,664 street lights including 1725 High mast lights, 1134 mercury lights, 30,249 sodium lights, 2,39,512 Tube lights, 1,11,738 CFL, 2331 Solar lights and 54,975 LED lights maintained by the Town Panchayats. It is proposed to replace all the street lights to energy efficient LED lights in a phased manner.

#### **4.17 Disaster Management Plan**

Disaster Management Plan was prepared in all Town Panchayats. Pre-monsoon preparedness activities have been taken up in all Town Panchayats 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 Panchayats. The Executive

Officers have been advised to keep ready of all the essential materials and equipments. 48 Rescue Teams were formed in 31 Districts (Except Chennai) with 1300 officials and employees of Town Panchayats to serve the affected places at any time.

#### **4.18 Gaja Cyclone**

'GAJA Cyclone' blew with severe wind and wide spread rainfall, 10 Town Panchayats of Thanjavur District namely, Adirampattinam, Ammapettai, Madukkur, Melathiruppanthuruthi, Orathanadu, Papanasam, Peravurani, Perumagalur, Swamimalai, Vallam, 4 Town Panchayats of Nagapattinam District namely, Kilvelur, Thalanayar, Thittacheri, Velankanni, 3 Town Panchayats of Thiruvarur District namely Muthupettai, Nannilam, Needamangalam, 2 Town Panchayats of Trichy District Koothappar, Ponnampatti and 8 Town Panchayats of Pudukottai District namely Alangudi, Annavasal, Arimalam, Illupur, Keeramangalam, Keeranur, Karambakkudi, Ponnamaravathy, totally 27 Town Panchayats were severely affected.

The damages caused due to high speed wind and heavy rain fall in roads, drains, small bridges, street lights, and drinking water supply were restored and brought into public use.

All relief operations and rehabilitation works in the 27 affected Town Panchayats due to cyclone were carried out immediately by more than 1000 officials and workers mobilised from other districts and normal life was restored within 72 hours which was very much appreciated by the public.

An amount of ₹ 5.00 crore was allotted to Town Panchayats for restoration of the basic infrastructure and the total amount has been fully utilized in the 27 affected Town Panchayats.

#### **4.19 Tourism Development Scheme - (Swadesh Darshan)**

Under the scheme, 13 works at an estimated cost of ₹ 11.21 crore in Kanyakumari and Ganapathipuram Town Panchayat were taken up. Out of these, 10 works have been completed and remaining 3 works are under progress at various stages.

#### **4.20 Chennai Rivers Restoration Trust (CRRT)**

To prevent pollution of Adayar river which falls in Chennai Metropolitan area, the Government have issued orders in G.O.Ms.No. 72, Municipal Administration and Water Supply (MC-1) Department, dated 12.07.2017. ₹ 41.73 crore has been allotted to Kundrathur, Perungalathur and Thiruneermalai Town Panchayats and 8 works are under progress at various stages.

#### **4.21 Heritage City Development and Augmentation Yojana (HRIDAY)**

In the year 2015, with the financial assistance of Government of India under HRIDAY scheme, 22 works such as signages, roads and water supply have been taken up at a cost of ₹ 20 Crore in Velankanni Town Panchayat of Nagapattinam District. Out of these, 19 works have been completed. Remaining 3 works are under progress.

#### **4.22 Plastic Eradication**

Plastic plays a major source of environmental pollution. In order to save the environment

from the menace of one time use and throwaway plastics and to bring a behavioral change amongst the people, the Hon'ble Chief Minister of Tamil Nadu under Rule 110 in the Floor of the Assembly has announced on 05.06.2018, imposing a ban on certain "Use and Throwaway plastics irrespective of thickness", vide G.O.(Ms) No.84, Environment and Forest Department, dated 25.06.2018 was issued to ban from 01.01.2019.

In pursuant to the Government Order, resolutions have been passed in all 528 Town Panchayats to ban the one time use and throwaway plastics irrespective of thickness with effect from 1st January 2019.

Meetings were conducted in State Level and Zonal Level to effectively eradicate the plastics.

Further, IEC activities like issuing of pamphlets to public, creating door to door awareness to public by 1382 social animators and self help groups were carried out in all the 528 Town Panchayats. Street plays, puppet shows, beating of drums and mass rallies were staged in prominent public places of the Town Panchayats. Wide publicity was given for 14 types of banned plastic items.

Meetings were conducted with resident welfare associations, all Trade Associations, owners of established Hotels, marriage halls and commercial Institutions by the Executive Officers of Town Panchayats. Debates, rallies and competitions are conducted in schools and colleges for creating awareness on ban on use of plastics.

Bye laws have been framed by all the Town Panchayats and notified in the Government Gazette. Now, as per the amendment issued by the Government in section 306(28A), 308(A) of Tamil Nadu District Municipalities Act, 1920 for imposing Fine / Penalties and published in the Government Gazette vide No.75, dated.21.2.2019, action is being taken in all Town Panchayats.

So far, 2,40,764 notices have been issued to public and stakeholders in all Town Panchayats. 57.42 MT of plastics have been seized and ₹ 24.91 Lakh have been collected as fine for usage of banned plastics in all Town Panchayats.

With the above effective efforts, now all Town Panchayats are marching towards "plastic free Town Panchayats".



## **4.23 Sustainable Development Goals (SDGs)**

NITI Aayog has been assigned the role to co-ordinate Sustainable Development Goals.

The Government of Tamil Nadu is giving top priority to achieve sustainable Development Goals in the State before 2030 and issued orders for implementation of the Goals vide G.O. (Ms) No.15, Planning Development and Special Initiatives (SP.I) Department, dated 21.03.2017. The goals contain the following aspects:-

1. Providing the people living in households with access to safe and adequate drinking water within their premises.
2. Providing Households having access to Toilet facilities.
3. Achieving Open Defecation Free (ODF).
4. Treatment of sewage before discharge into surface water bodies.

Action is being taken to achieve the above said goals as detailed below:

1. All necessary measures being taken to ensure the safe, potable and prescribed LPCD of water supply to every one.

2. As far as sanitation is concerned, 89% of individual households having toilets facilities. Remaining 11% are covered under community toilets and Public toilets, due to non-availability of land. Awareness activities are being continuously taken through animators for behaviour change for fully utilization of toilets. Necessary infrastructure facilities are also being given to the Town Panchayats for Solid Waste Management.
3. Out of 528 Town Panchayats, 525 Town Panchayats have been declared as Open Defecation Free and remaining 3 Town Panchayats are under assessment of Quality Control of India (QCI).
4. Planned to establish Waste Water Treatment Plants, wherever necessary.

#### **4.24 Honourable Chief Minister Best Town Panchayat Award**

With a view to motivate the Town Panchayats to achieve excellence in service level the Government had instituted "Hon'ble Chief Minister's Award" to the best three Town Panchayats with a cash

award of ₹ 10.00 lakh, ₹ 5.00 lakh and ₹ 3.00 lakh respectively during the year 2012-13.

For the year 2017-18, 3 prizes were awarded to Jalagandapuram Town Panchayat of Salem District, Palanichettipatti Town Panchayat of Theni District and Palacode Town Panchayat of Dharmapuri District respectively.

The Hon'ble Chief Minister distributed the cash prizes with a citation to the above Town Panchayats during the Independence Day Celebrations in 2018.

## **4.25 National Awards**

### **4.25.1 National Water awards 2018**

Tharangambadi and Manalmedu Town Panchayats of Nagapatinam District were selected for protection of water bodies and improvement of water sources and National Water Award was given by Shri. Nitin Gadkari, Hon'ble Minister for Road transport and Shipping and Water Resources, River Development and Ganga Rejuvenation during the function held on 25.02.2019 at New Delhi.

#### **4.25.2 Central Government Awards**

Hon'ble Minister Thiru Hardeep Singh Puri has handed over Swachh Surveksan Award, 2018 to the Executive Officers of 5 Town Panchayats as clean towns during the function held at New Delhi on 06.03.2019.

Thiruporur Town Panchayat of Kancheepuram District, Kugalur Town Panchayat of Erode District and Kottakuppam Town Panchayat of Villupuram District has been awarded for "Fastest Developing City".

Agaram Town Panchayat of Dindigul District has been awarded for "Best city in Innovation and Best practices in South Zone".

Melathiruppanthruthi Town Panchayat of Thanjavur District has been awarded for "Best city in Solid Waste Management" and citations were given.

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

In the year 1978, Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) was established. CMWSSB is to provide or arrange for the provision of safe & sufficient supply of drinking water for consumption by the inhabitants and safe disposal of sewage in the Chennai Metropolitan Area as per CMWSS Board Act. 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 adequate treatment and Operation & Maintenance of the said facilities to meet the requirements of Chennai city for the present and the future.

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 (projected from 67.27 lakh as per 2011 census) through its 200 Depot Offices. It also supplies water to some of the adjacent local bodies and bulk industrial consumer.

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

Water requirement of Chennai City 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 the Telugu Ganga Project are the main surface water sources for Chennai city.

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 Krishna River through Kandaleru reservoir to Chennai for its drinking water needs.

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

<b>Sl. No</b>	<b>Reservoir</b>	<b>Storage Capacity (in Mcft)</b>
1	Poondi	3,231
2	Redhills (Puzhal)	3,300
3	Chembarambakkam	3,645
4	Cholavaram	1081
5	Veeranam	1,465
	Total	12,722

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

<b>Year</b>	<b>Rainfall in mm</b>		<b>Difference in %</b>
	<b>Normal (30 years average)</b>	<b>Actual</b>	
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
2018	1313.85	880.00	-33.01

## **5.1.2 Desalination Plants**

Chennai city is mainly depending 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 Amma in a far sighted move, announced the proposal of 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 the 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 play a major role in fulfilling the water supply requirements of Chennai city.

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

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

Another 100 MLD desalination plant was constructed in Nemmeli 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 Amma 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, Neelankarai, Injambakkam, Karapakkam, Semmancherry, Thoraipakkam, Perungudi, Kottivakkam, Palavakkam, Thiruvanmiyur, Velachery, Taramani, Pallipattu, Adyar, Besant Nagar, Nandanam, MRC Nagar, Raja Annamalaipuram and Mylapore benefiting a population of about 7 lakhs.

During 2012-14, 2016-17, 2017-18 and 2018-19 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 35 MLD of ground water is also drawn from the aquifers at Tamaraiakkam, Poondi and also from own sources of added areas.

### **5.1.4 Operations and Maintenance of Water Supply**

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

Operation & Maintenance 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 7,37,776 consumers now as against 1,16,000 consumers in the year 1978. During 2018-19, 13,547 house service connections have been effected in Chennai City.

## **5.2 Water Supply – New Schemes**

CMWSSB has taken up various schemes after inclusion of 42 newly added areas to Greater Chennai Corporation, for augmenting water supply to unserved areas with special attention on covering the added areas.

Accordingly, Water Supply schemes have been completed in 13 added areas viz. Thiruvottiyur, Kathivakkam, Ambattur, Maduravoyal, Valasaravakkam, Porur, Alandur, Meenambakkam, Injambakkam, Nandambakkam, Nolambur, Karambakkam and Ullagaram-Puzhuthivakkam.

In 27 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, Okkiyum-Thoraipakkam, Mathur, Jalladampettai, Madipakkam, Uthandi and Nerkundram (Balance works) Water supply schemes are under progress.

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

The late Hon'ble Chief Minister Amma made an announcement under Rule 110 of Tamil Nadu Legislative Assembly Rules that another 150 MLD capacity desalination plant will be set up at Nemmeli. This project is to be implemented with grants under AMRUT scheme and financial assistance from KfW, the German funding agency at a total project cost of ₹ 1259.38 Crore. Work order has been issued on 27.05.2019. Foundation stone for the plant was laid by Hon'ble Chief Minister on 27.06.2019.

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 9 lakh people.

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

The late Hon'ble Chief Minister Amma 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.

JICA has furnished revised Detailed Project Report for a value of ₹ 6078.40 Crore during October 2017. This project is to be implemented with financial assistance for an approximate value of ₹ 4267.70 crore from Japan International Co-Operation Agency (JICA). The balance amount will be met out by GoTN. The Coastal Regulation Zone clearance for implementing this plant has been given by 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, Peerkangaranai, Perungalathur, Thirneermalai, Kundrathur, Kattankulathur and Mangadu benefitting a population of about 22.67 lakh.

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

Work on laying of second pipe line of 2000 mm diameter for a length of 6.5 Kms 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 July 2020.

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

To improve infrastructure and basic amenities in Chennai city with a special focus on the newly added areas, Chennai Mega City Development Mission was launched by the late Hon'ble Chief Minister Amma. 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, Karambakkam, Nandambakkam, 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 shortly. Further, the works proposed at a cost of ₹ 335.34 crore at Sadayankuppam, Edayanchavadi, Kadapakkam, Manali, Chinnasekkadu, Vadaperumbakkam, Theeyampakkam, Kottivakkam, Perungudi, Palavakkam, Surapet, Kathirvedu, Puthagaram, Puzhal, Pallikaranai and Mugalivakkam are under progress and expected to be completed by March 2020.

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

The water distribution pipe lines in the core areas of Chennai city are more than 30 years old for a length of about 914 kms. These pipes are being renewed periodically under various

schemes. In order to improve the distribution of water supply, the late Hon'ble Chief Minister Amma had announced the proposal of renewal of chocked up water mains, providing new water mains in left out streets and laying of feeder mains for a length of about 310 Kms at a cost of ₹ 116.04 crore. Works are under progress and all the works are expected to be completed by 31.08.2019.

### **5.3 Sewerage services**

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

The sewerage system in Chennai core city has been divided into 5 zones with independent zonal collection system with pipelines for a length of about 3529 kms. The sewage generated from houses and other buildings are collected through



266 sewage pumping stations and treated at 12 Sewage Treatment Plants before safe disposal/reuse.

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

Sewage Treatment Plants of total capacity of 727 MLD are functioning in Nesapakkam (3 units), Kodungaiyur (3 units), Koyambedu (3 Units), and Perungudi (3 units).

### **5.3.2 Additional Sewage Treatment Plants**

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 shortly.

### **5.3.3 Growing number of Consumers**

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

9,72,833 consumers now as against 1,14,000 consumers in the year 1978. During 2018-19, 13,520 house service connections have been effected in Chennai City.

#### **5.4 Sewage Disposal – New Proposals**

CMWSSB is implementing Underground Sewerage Schemes in the added areas of Chennai City under Chennai Mega City Development Mission (CMCDM) 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. Under this scheme, Under Ground Sewerage Schemes have been completed in 10 areas viz. Madhavaram, Valasaravakkam, Alandur, Meenambakkam, Maduravoyal, Nolambur, Surapattu, Puthagaram, Kathirvedu and Ullagaram-Puzhuthivakkam. Further, Under Ground Sewerage Schemes (UGSS) are under progress in another 15 added areas namely Thiruvottiyur, Kathivakkam, Ambattur, Porur, Pallikaranai, Ramapuram, Perungudi, Sholinganallur, Karapakkam, Nerkundram, Mugalivakkam, Manali, Chinnasekkadu, Manapakkam and Karambakkam.

Detailed Project Reports (DPRs) have been prepared for 3 added areas viz. Edayanchavadi, Sadayankuppam, Kadappakkam. DPR for providing underground sewerage scheme for the balance 14 added areas viz. Puzhal, Mathur, Theeyambakkam, Vadaperumpakkam, Nandambakkam, Kottivakkam, Palavakkam, Neelankarai, Madipakkam, Semmencherry, Uthandi, Jalladampettai, Injambakkam and Okkiyam Thoraipakkam are under preparation.

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

This schemes proposed during 2011-12 viz., Laying of force mains from pumping stations, Enlargement of Sewage Pumping Mains, Insertion of 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 viz. 35 Jet Roding Machines and 50 Desilting Machines 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 have also been completed.

Further, the schemes proposed during 2012-13 viz., Procurement of sewerage maintenance equipments at a value of ₹ 15.20 Crore have been completed. UGSS works at Kathivakkam, Sholinganallur-Karapakkam and Ramapuram taken up at a cost of ₹ 245.55 Crore are under progress and will be completed shortly.

The works proposed at an estimated cost 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 completed. For Mugalivakkam works at a cost of ₹ 77.50 crore are under progress.

#### **5.4.2 Works taken up under Tamil Nadu Urban Development Project-III (TNUDP- III)**

Under TNUDP-III scheme, the works taken up at Madhavaram and Ambattur Phase I at a cost of ₹ 115.97 crore have been completed. The works taken up at ₹ 67.63 crore at Thiruvottriyur are

under progress and expected to be completed by 31.08.2019.

#### **5.4.3 Works taken up under Tamil Nadu Investment Promotion Programme (TNIPP)**

Construction of a new 54 MLD Sewage Treatment Plant at Sholinganallur with latest treatment technology along with provision for power generation has been taken up at a cost of ₹ 65.97 crore, for treating the sewage generated from added areas located in the southern part of Chennai city. Work is under progress and all the works are expected to be completed shortly.

#### **5.4.4 Mechanisation of sewer cleaning operations**

The Board has mechanized the operation and maintenance of the sewerage system in order to eradicate manual scavenging by procuring 123 Jet Rodding machines, 245 Desilting machines, 30 Jetting cum suction machines and 54 Super Sucker machines for effective maintenance of the sewer system.

#### **5.4.5 Preventive maintenance of sewer system**

CMWSSB is serving 9,72,833 consumers by maintaining sewer lines of 3529 kms. 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 sewer system, the number of sewer blocks in the city have been considerably reduced.

#### **5.4.6 Plugging of sewage outfalls**

During the year 2012-13, it was proposed to plug 337 sewage outfalls at a cost of ₹ 300 crore, so as to prevent untreated sewage from entering the city 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 ₹ 150.00 crore

under Infrastructure and Amenities Fund and are expected to be completed shortly, of which 87% of work has been completed and due to slow progress of work, the contract has been terminated and revised estimate is being prepared for calling retender for the balance works after the end of the arbitration proceedings.

In phase-II, the works for plugging of balance 158 sewage outfalls at a cost of ₹ 163 crore are taken up under 7 packages. Out of these, works are completed in 3 packages and works under progress in 4 packages and are expected to be completed by April 2020.

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

About 28.53 MLD of Secondary treated sewage water from the Kodungaiyur Sewage Treatment Plant 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 ₹ 19.39 crore for the year 2018-19.

### **5.4.7.1 Recycling of waste water**

Chennai City is pioneer in recycling process of treated effluent in India. Recycling is the process of reusing treated wastewater for beneficial purposes such as agricultural and landscape irrigation, industrial processes, toilet flushing, and replenishing ground water basin (referred to as ground water recharge). Recycling offers resource and financial savings.

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

#### **5.4.7.1.1 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 have 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 grant from Government of India and Government of Tamil Nadu under AMRUT scheme. Works are expected to be completed by 31.07.2019.

#### **5.4.7.1.2 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, ₹ 153.00 crore has been received as loan and ₹ 76.50 Crore as grant under TNSUDP and ₹ 118.67 crore has been sanctioned as grant from Government of India and Government of Tamil Nadu under AMRUT scheme. Works are expected to be completed by 31.07.2019.

**20% of the Sewage generated in Chennai city will be recycled after commissioning of these two plants. With this, Chennai will be one of the leading City which recycles and**

**reuses the waste water to the maximum in the country.**

## **5.5 Sustainable Water Security Mission**

The late Hon'ble Chief Minister Amma had announced the "Sustainable Water Security Mission" to ensure continuous receipt of water in Chennai city in order to achieve Sustainable water security 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 and implement the best practices in water management in their premises.

## **5.6 Rainwater Harvesting**

Rainwater harvesting is the accumulation and storage of rainwater for reuse on-site, 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 tank with percolation or other tools. Its uses include water for gardens, livestock, irrigation, domestic use with proper treatment and indoor heating for houses. The harvested water can also be used as drinking water, longer-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 one of the first 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 by the late Hon'ble Chief Minister Amma, making Chennai city a pioneer in rain water 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 8,05,200 buildings are in existence with a total number of 8,75,672 RWH structures. During the year 2018-19, a total number of 13,500 rainwater harvesting structures were constructed while effecting new/ renewal of water and sewer connections. In order to assess the impact of 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 has been significant improvement in water level and water quality after every monsoon. Recharge potential from RWH structures is 2.80 TMC. The Area / Depot Engineers are monitoring the installation and maintenance of RWH Structures in Chennai city.

## **5.7 Drought Mitigation Works**

Due to deficit in rainfall in the year 2018, the water supply pattern had been re-organised by

maintaining the supply of water of about 550 MLD from 01.01.2019 to 31.05.2019 and 525 MLD from 01.06.2019 to 30.11.2019. CMWSSB had taken various emergency drought mitigation works such as erection and rehabilitation of IM-II pumps, Providing new HDPE tanks and Rehabilitation of HDPE tanks with pedestals, Rehabilitation of Public Fountains, Erection of new bore wells with pump sets and Erection of new filling point posts, etc at a cost of ₹ 121.90 crore. All the works have been completed.

### **5.7.1 Measures taken for water source augmentation:**

In order to maintain adequate water supply in Chennai city, Government of Tamil Nadu is augmenting new sources continuously. In 2017, new source has been identified to draw 30 MLD of water from quarries. In continuation, in 2018-19, new sources have been identified and works have been commenced to draw additional 60 MLD of water from quarries, lakes and recycling of sewage water.

Also, the following measures are taken to maintain equitable water supply till the onset of monsoon during November:

- ❖ At present, about 180 MLD of water is being supplied to Chennai City from Veeranam lake since filled to its total capacity of 1465 mcft from Mettur dam.
- ❖ Works have been completed for getting 10 MLD of water by erection of 9 new borewells at Neyveli Basin and 60 MLD of water from Neyveli mines and Paravanar river at a project cost of ₹ 6.67 Crore.
- ❖ Works have been completed for getting 110 MLD of water from the agriculture wells of Poondi, Thamaraiyakkam and their adjacent areas.
- ❖ Extraction of water from Sikkarayapuram quarries at an estimated cost of ₹ 11 crore is commenced and 30 MLD of water is being supplied to Public use from February 2019 onwards.
- ❖ Works are nearing completion for extracting 10 MLD of water from Erumaiyur quarries at a project cost of ₹ 19.17 crore.
- ❖ Works are under progress at Rettai Eri, Perumbakkam and Ayanambakkam lakes

for supplying of 30 MLD of treated water at a project cost of ₹ 53.00 crore. In the above, work has been completed in Rettai Eri and is ready for drawl of water.

- ❖ Works are under progress at Perungudi for establishing a 10 MLD capacity of Tertiary Treatment Plant at a project cost of ₹ 42.78 crore.
- ❖ Works are under progress at Nesapakkam for establishing a 10 MLD capacity of Tertiary Treatment Plant at a project cost of ₹ 41.00 crore and from this plant, the treated water has to be supplied to commercial and Industrial establishments.
- ❖ Water is being supplied by increasing the number of trips to 11360 by engaging the mobile lorries from 850 to 1080. **This is the maximum number of trips achieved in the history of CMWSSB.**
- ❖ Water is being supplied to narrow streets by engaging 121 nos. of two tanker mini lorries.

- ❖ Also, new attempt has been made to deliver water at the door steps for the people residing at narrow streets, by fixing long hose in the water lorries.
- ❖ Mini lorries with the capacity of 2000 and 3000 litres have been introduced for the first time by CMWSSB to ply in the narrow streets. At present, water is also being supplied through 112 mini lorries of 2000 litres capacity and 136 mini lorries of 3000 litres capacity.
- ❖ Also, water is being supplied by increasing the HDPE tanks in the streets from 10907 to 12129. **This is again the highest number achieved in the history of CMWSSB.**

## **5.8 Financial Position**

The total revenue expenditure as per the Budget Estimate for the year 2018-19 is ₹1252.60 crore. The total income of the Board as per Budget Estimate is ₹ 1017.33 crore. Of this, the income from Water Supply and Sewerage Tax is ₹ 340.39 crore, water and sewerage charges is



₹ 399.16 crore and other income is ₹ 64.29 crore. For purchase of desalinated water from Minjur (O&M) and other purposes, the Government of Tamil Nadu provides grants to the Board to the tune of ₹ 213.50 crore (BE 2018-19).

## **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**

At CMWSSB Head Office, a 24x7 complaint cell is functioning to receive, register and monitor the grievances of the consumer. Consumers can register their complaints / grievances either in person or by dialling 45674567. At present, the existing No.of telephone lines have been increased from 10 to 20. The registered complaints are immediately transferred online and also by SMS to the respective Depot Engineers to rectify the defects. Accordingly, rectification of the defects is being done immediately.

On an average, 320 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 consumer.

### **5.9.2 Complaint redressal through website**

Consumers can register their complaints online through the Board's website [www.chennaietrowater.tn.nic.in](http://www.chennaietrowater.tn.nic.in). The registered complaints are forwarded to the respective Area Offices and the same are redressed as per Citizens' Charter norms.

### **5.9.3 'Metro Water' App.**

CMWSSB has introduced a mobile app 'Metro Water' for the use of consumer. This app has been designed in such a way that Public / Consumers can register their water related complaints to the concerned officers at any time, from any place through their smart mobile phones. This 'Metro Water' app can be downloaded from google playstore.

Also, Public can register their details such as name, mobile number, e-mail address once and can send images / Photographs related to water complaints if any, through their smart mobile phones and inform the status. Consumers are requested to provide the details while registering their complaints. After that, an exclusive complaint no. will be generated and sent to the public through SMS Public can view the status of their complaint through this app.

#### **5.9.4 Open House Meeting**

To improve the 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 to immediately.

#### **5.9.5 Chennai Smart City – Water Supply And Sewerage Improvement Works**

Ministry of Housing & Urban Affairs, Government of India had selected 99 cities throughout India for making them into Smart Cities. Chennai City

is one among them. For Chennai Smart City improvement works are proposed at Thyagaraya Nagar and surrounding areas such as Teynampet, Thousand Lights, Nandanam, West Mambalam and CIT Nagar covering 425 streets. The improvement works for water supply are proposed as follows:

- 1) To enhance the existing water supply network so as to supply 24 Hr water for all the 7 days of the week and to install 100 percent water meter for all the consumers.
- 2) Improvement to the existing water supply infrastructure.
- 3) Complete computerisation and online monitoring for the enhancement of water quality, pressure and supply quantity.
- 4) For the above works, consultancy works have been awarded to M/s.Tamil Nadu Water Investment Company (TWIC) at a cost of ₹ 4.72 crores. Tenders were invited and are under evaluation.
- 5) Estimate has been sanctioned for ₹ 107.10 crores including the O & M cost for 5 year and tenders invited. Work order will be issued shortly.

Besides, it is proposed to carry out the following works in all 200 Divisions of Chennai Corporation under Smart City Development Scheme.

- 1) To enhance the smart water digital solutions for Citizens Services Scheme have been prepared for ₹ 16 crores and put up for funding for implementation.
- 2) Work order issued for installing 12708 Nos. of AMR water meters at a cost of ₹ 9.50 crores to water intensive and commercial establishment /consumers in Chennai city and work will be taken up shortly.
- 3) Detailed Project Report has been prepared for ₹ 11.75 cores 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 posts in 41 filling stations of CMWSS Board and tenders are under evaluation.

### **5.9.6 Clearance of Septage From Septic Tanks by Lorries**

The Hon'ble Minister of Municipal Administration, Rural Development and Special Programme

Implementation 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, Valasaravakkam, Alandur, Perungudi and Sholinganallur of Greater Chennai Corporation can book sewer lorries through CMWSSB Web site [www.chennaietrowater.tn.nic.in](http://www.chennaietrowater.tn.nic.in) or CMWSSB Call Centre No.4567-4567 at a cost of ₹ 650.00 so that they can clear the septic tanks of their residences.

This scheme has been implemented from 15.05.18 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 on the 14th day of April 1971 under an Act of the State Legislative Assembly. Its objective is to provide protected water supply as well as Under Ground Sewerage Schemes to the local bodies in Tamil Nadu excluding Chennai Corporation. The Board is headed by the Principal Secretary to Government, Municipal Administration and Water supply Department as Chairman and the Managing Director is the Chief Executive supported by Technical, Financial and Administrative Wings. There are four Chief Engineers at Regional level with Headquarters at Vellore, Thanjavur, Coimbatore and Madurai.

### **6.1 Functions of TWAD Board**

- a. Planning, Investigation, Design, Implementation and Commissioning of Water Supply and Sewerage Schemes.
- b. Operation and Maintenance of Combined Water Supply Schemes.
- c. Water Quality Monitoring and Surveillance Programme.

- d. Ensuring Sustainability of Drinking Water Sources.
- e. Training.

## **6.2 Water Supply Programme**

Water Supply Schemes for the rural habitations and urban towns are provided through rural individual Power Pump schemes and Urban Stand-alone water supply schemes for single beneficiary local body and through Combined Water Supply Schemes for more than one rural habitation and urban town beneficiaries with a common water source.

The schemes are handed over to the local body for maintenance on completion, when the beneficiary is an individual local body. TWAD Board maintains the schemes when the beneficiaries are more than one local body.

The norms for Rural Water Supply as per NRDWP guidelines has been enhanced, by the Government of India from 40 lpcd to the service level of 55 lpcd.

There are 1,00,018 rural habitations in Tamil Nadu as on 01.04.2018. Out of this, 95,691



Habitations are fully covered with water supply at 40 lpcd and the balance 4,327 Habitations are partially covered.

During the year 2018-19, 2,310 partially covered habitations have been taken up for full coverage with water supply. Out of this, water supply has been effected to 1642 habitations. Works are under progress in balance habitations.

For the year 2019-20 it is proposed to cover 655 partially covered habitations for full coverage through ongoing Combined Water Supply Schemes and IPP Schemes. It is also proposed to take up new individual Power Pump schemes to cover 455 open defecation free (ODF) partially covered habitations fully in 5 Districts, and to take up 2 CWSS in Karur District to cover 282 partially covered Habitations.

### **6.2.1 Rural Individual Power Pump schemes**

During the year 2018-19, 223 Individual Power Pump Schemes at an estimated cost of ₹ 31.04 Crore to benefit 223 Partially covered habitations in 8 Districts were taken up for implementation and are at various stages of execution. These works are proposed to be completed by 2019-20.

Individual Power Pump schemes are implemented with Government of India funding under National Rural Drinking Water Programme and equal matching share of fund from the State Government.

### **6.2.2 Urban Stand-alone Water Supply Programme**

For Stand-alone Water Supply Scheme, TWAD Board functions as project implementation agency to Corporations, Municipalities and Town Panchayats. The Schemes are handed over to the respective Urban local bodies for maintenance on completion.

5 Urban Stand-alone water supply schemes covering 2 Municipalities and 3 Town Panchayats have been completed to supply 41.43 MLD of potable water at an estimated cost of ₹ 142.29 crore, benefiting 4.32 lakh people during the year 2018-19.

Further, 11 schemes covering 2 Corporations and 9 Municipalities are under various stages of implementation at an estimated cost of ₹ 984.19 crore which on completion will supply

236.86 MLD of water to benefit 20.22 lakh people. Also, tender has been called to execute schemes in 2 Municipalities at an estimated cost of ₹ 103.97 crore to benefit 0.95 lakh people.

These schemes are implemented with the financial assistance from Minimum Needs Programme (MNP), Integrated Urban Development Mission (IUDM), Tamil Nadu Urban Development Project –III (TNUDP-III), Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT), German Development Bank( KfW) and Tamilnadu Sustainable Urban Development Project ( TNSUDP).

The details of the Urban Stand Alone Water Supply schemes are as given below:

Sl. No	District	Name of Schemes	Estimate Cost (₹ in crore)	Population benefitted (in Lakh)
<b>Schemes Completed During 2018-19</b>				
1.	Theni	WSIS to Theni-Allinagaram Municipality.	68.83	1.66
2.	Nilgiris	WSIS to Udhagamandalam Municipality.	27.20	1.37

<b>Sl. No</b>	<b>District</b>	<b>Name of Schemes</b>	<b>Estimate Cost (₹ in crore)</b>	<b>Population benefitted (in Lakh)</b>
3.	Trichy	WSIS to Musiri Town Panchayat.	21.07	0.40
4.	Theni	WSIS to Andipatti Town Panchayat.	14.59	0.56
5.	Nilgiris	WSIS to Kothagiri Town Panchayat.	10.60	0.33
		Sub Total-I	142.29	4.32
<b>Schemes Under Progress</b>				
1.	Thirunelveli	WSIS to Thirunelveli Corporation	230.00	6.88
2.	Namakkal	WSIS to Namakkal Municipality.	185.24	1.84
3.	Coimbatore	WSIS to 3 Added areas viz., Koundam-palayam, Vadavalli and Veerakeralam in Coimbatore Corporation.	108.16	3.59

<b>Sl. No</b>	<b>District</b>	<b>Name of Schemes</b>	<b>Estimate Cost (₹ in crore)</b>	<b>Population benefitted (in Lakh)</b>
4.	Nilgiris	CWSS to Coonoor Municipality, Wellington Military Station and Pasteur Institute of India.	95.30	0.59
5.	Thoothukudi	WSIS to Kovilpatti Municipality.	81.82	1.40
6.	Namakkal	WSIS to Thiruchengode Municipality.	81.22	1.50
7.	Theni	WSIS to Bodinayakanur Municipality.	76.15	0.76
8.	Villupuram	WSIS to Tindivanam Municipality.	52.45	0.92
9.	Dindigul	WSIS to Kodaikkanal Municipality.	46.31	0.57
10.	Karur	WSIS to Inam Karur Municipality.	18.57	1.45

<b>Sl. No</b>	<b>District</b>	<b>Name of Schemes</b>	<b>Estimate Cost (₹ in crore)</b>	<b>Population benefitted (in Lakh)</b>
11.	Madurai	WSIS to Anaiyur Municipality.	8.97	0.72
		Sub Total-II	984.19	20.22
<b>Tender Process</b>				
1.	Madurai	WSIS to Usilampatti Municipality.	73.03	0.64
2.	Kanyakumari	WSIS to Kuzhithurai Municipality.	30.94	0.31
		Sub Total-III	103.97	0.95
		Grand Total	1230.45	25.49

### **6.2.3 Major Combined Water Supply Schemes**

During the year 2018-19, 3 major Combined Water Supply Schemes have been completed at an estimated cost of ₹ 498.34 Crore to supply 53.04 MLD of water, benefiting 12.79 lakh people. Further, 8 Major Combined Water Supply schemes are under various stages of implementation which on completion will supply 233.14 MLD of water to 33.38 lakh people at an estimated cost of ₹ 1940.48 crore. These schemes are implemented

with the financial assistance from Minimum Needs Programme (MNP), National Bank for Agriculture and Rural Development (NABARD), National Rural Drinking Water Programme (NRDWP), State Matching Share (SMS), Urban Local Body Contribution (ULB), Deposits, World Bank TNSUDP (Tamilnadu Sustainable Urban Development Project), Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Integrated Urban Development Mission(IUDM) and German Development Bank( KfW).

The details of the Major Combined Water supply schemes are as given below:

<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in crore)</b>	<b>Population (in Lakh)</b>
<b>Schemes Completed During 2018-19</b>			
1.	CWSS to 698 Rural Habitations in Nangavalli and Mecheri unions with bulk provision to 6 Town Panchayats in Salem District	158.64	3.42
2.	CWSS to 295 Quality affected Habitations and 315 wayside Habitations in Nagapattinam District	105.70	3.39

<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in crore)</b>	<b>Population (in Lakh)</b>
3.	CWSS to 755 Rural Habitations in Virudhunagar District.	234.00	5.98
	Sub Total-I	498.34	12.79

<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in crore)</b>	<b>Population (in Lakh)</b>
<b>Schemes Under Progress</b>			
1.	CWSS to Sankarankoil, Puliyanakudi Municipalities, Thiruvankadam Town Panchayat in Thirunelveli District and Rajapalayam, Sivakasi, Thiruthangal Municipalities in Virudhunagar District.	543.20	6.20
2.	CWSS to AlampalayamTP, Padaveedu TP including 669 Rural habitations in Pallipalayam and Tiruchengode Unions in Namakkal District and Sankari Town Panchayat in Salem District	399.46	6.61
3.	CWSS to Annur and Mooperipalayam Town Panchayats in Coimbatore District, Avinashi Town Panchayat in Tiruppur District, Airforce Station, Sular and Bulk quantity to 155 Rural Habitations in Palladam and Tiruppur Unions in Tiruppur District.	241.00	4.20



<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in crore)</b>	<b>Population (in Lakh)</b>
4.	CWSS to Perundurai and 7 other Town Panchayats including 547 wayside Rural Habitations in Erode and Tiruppur Districts	224.00	5.47
5.	CWSS to Eraniel Town Panchayat and 319 Rural Habitations and Improvements to Padmanabapuram CWSS and Kattathurai CWSS in Kanyakumari District	174.00	3.44
6.	CWSS to 293 Rural Habitations in Musiri, Thathaiyangarpettai, Thuraiyur and Uppiliyapuram Unions of Trichy District.	140.22	1.68
7.	CWSS to Azhagiypandipuram, 8 Town Panchayats and 246 Rural Habitations in Kanyakumari District.	109.80	2.96
8.	Combined Water Supply Scheme to Keeranur, Neikkarapatty Town Panchayats and 253 Rural Habitations in Dindigul District	108.80	2.82
	Sub Total-II	1940.48	33.38
	Grand Total	2438.82	46.17

## **6.2.4 Other Combined Water Supply Schemes**

6 CWSS have been completed at an estimated cost of ₹ 87.49 crore to supply 14.69 MLD of water benefitting a population of 3.76 lakh during the year 2018-19.

26 Combined Water Supply Schemes are under various stages of implementation at an estimated cost of ₹ 748.57 crore which on completion will supply 93.49 MLD of water to 19.35 lakh people. Further, tenders have been called for to execute the 3 Combined Water Supply schemes at an estimated cost of ₹ 110.01 crore to benefit 1.68 lakh people.

These schemes are implemented with financial assistance from the Minimum Needs Programme, National Bank for Agriculture and Rural Development, National Rural Drinking Water Programme with State Matching Share, Local body contribution and deposits.

The details of various schemes taken up are as given below:

Sl. No	Name of Scheme	Estimate Cost (₹ in Crore)	Population (in lakh)
<b>Schemes Completed During 2018-19</b>			
1.	CWSS to Vadugapatti Town Panchayat & 57 Habs. in Periyakulam Union and Horticultural College and Research Institute at Periyakulam in Theni District and Batlagundu Town Panchayat in Dindigul District.	45.70	1.10
2.	CWSS to 201 Rural Habitations in Reddiarchatram Union in Dindigul District (under Vendasandur CWSS)	8.96	0.95
3.	CWSS to Kandamanur and 15 Rural Habitations in Andipatti and Kadamalaigundu-Myladum-parai Unons in Theni District	5.50	0.14
4.	CWSS to 101 Rural Habitations in Thoppampatti Union in Dindigul District (under Vendasandur CWSS)	4.11	0.47
5.	CWSS to 109 Rural Habitations in Oddanchatram Union in Dindigul District (under Vendasandur CWSS)	4.08	0.65
6.	CWSS to 17 Quality Affected Habitations and 69 Way Side Habitations of Parangipettai and Kumaratchi Unions of Cuddalore District and Kodyampalayam habitation in Nagapattinam District	19.14	0.45

<b>Sl. No</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in Crore)</b>	<b>Population (in lakh)</b>
	Sub Total-I	87.49	3.76
<b>Schemes Under Progress</b>			
1.	CWSS to 155 Rural Habitations in Palladam and Tiruppur Unions of Tiruppur District	99.24	2.94
2.	CWSS to 248 Rural Habitations in Kovilpatti (Part), Kayathar (Part), Ottapirdaram (part), Vilathikulam (part) and Pudur (Part) unions in Thoothukudi District	94.04	1.50
3.	CWSS to 5 Town Panchayats and 318 Rural Habitations of Madathukkulam and Udumalpet Unions in Tiruppur District	85.75	4.06
4.	CWSS to 274 Rural Habitations of Thanthoni Union in Karur District	81.41	0.86
5.	CWSS to 253 Rural Habitations of Kulithalai and Thogamalai Unions in Karur District	52.75	0.91
6.	CWSS to Keelapavoor Town Panchayat (Part) and 163 Rural Habitations of Pappakudi (Part), Kadayam and Keelapavoor Unions in Tirunelveli District	46.55	2.00

<b>Sl. No</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in Crore)</b>	<b>Population (in lakh)</b>
7.	CWSS to 135 Rural Habitations of Marungapuri and Vaiyampatty unions in Tiruchirappalli District utilizing the bulk provision made in Natham CWSS in Dindigul District	46.32	0.33
8.	CWSS to 170 Rural Habitations of Manur (Part) and Palayamkottai (Part) Unions in Tirunelveli District	32.40	1.45
9.	Augmentation of Water supply to 147 Rural Habitations of Alangulam and Sankarankoil Unions in Tirunelveli District	31.32	1.85
10.	CWSS to Reddiarpatti and 63 Rural Habitations of Palayamkottai Union in Tirunelveli District	28.71	0.57
11.	CWSS to Mulligur and 54 Rural Habitations of Mulligur, Italar and Nanjanadu Village Panchayats in Nilgiris District.	25.85	0.32
12.	CWSS to 53 Rural Habitations of Gujiliamparai Union in Dindigul District	20.34	0.23
13.	CWSS to 63 Rural Habitations of Oddanchatram Union in Dindigul District	17.74	0.20

<b>Sl. No</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in Crore)</b>	<b>Population (in lakh)</b>
14.	CWSS to 90 Rural Habitations of Karungulam (Part), Srivaikundam (Part) and Thoothukudi (Part) Unions in Thoothukudi District	17.17	0.58
15.	CWSS to 84 Rural Habitations of Vedasandur Union in Dindigul District	12.77	0.42
16.	CWSS to 38 Rural Habitations of Reddiarchatram Union in Dindigul District	11.55	0.19
17.	CWSS to 51 Habitations in Konganapuram & Edapadi unions by augmenting the existing CWSS to 327 Habitations in Salem District utilising the existing HW, WTP Booster stations.	9.50	0.11
18.	CWSIS to 28 Habitations of Mathur Village Panchayat in Ammapettai Union of Erode District	5.52	0.08
19.	CWSS to 8 Rural Habitations around SIPCOT Industrial Complex in Thoothukudi District	6.40	0.08
20.	CWSIS to 30 Habitations of Patlur Village Panchayat in Ammapettai Union of Erode District	6.21	0.11
21.	CWSIS to 54 Habitations of Mylambadi Village Panchayat in Bhavani Union of Erode District	5.25	0.09

<b>Sl. No</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in Crore)</b>	<b>Population (in lakh)</b>
22.	CWSS to Deveripalli and 23 other Habitations of Hosur union in Krishnagiri District.	4.58	0.12
23.	CWSS to 20 rural Habitations of Vadamadurai Union in Dindigul District	3.62	0.04
24.	WSIS to Aranmanaipudur and 4 other Habitations of Theni Union in Theni District	1.67	0.15
25.	WSIS to Manjanaican Patty Village panchayat in Theni District	0.98	0.05
26.	CWSIS to Kodangipatti and 3 other Rural Habitations in Bodi union of Theni District	0.93	0.11
	Sub Total-II	748.57	19.35
<b>Tender Process</b>			
1.	CWSS to 138 Rural Habitations of Thottiyam Union in Trichy District	49.95	0.64
2.	CWSS to Sigaralapalli & 143 Habitations of Bargur Union in Krishnagiri District	31.82	0.41
3.	CWSS to Uthangarai TP & 50 other Habitations of Uthangarai Union in Krishnagiri District	28.24	0.63
	Sub Total-III	110.01	1.68
	Grand Total	946.07	24.79

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

Projects have been taken up for providing Water Supply and Under Ground Sewerage Schemes in 3 phases for the period 2015-16, 2016-17 and 2017-20.

Totally, 9 Water Supply Schemes at an estimated cost of ₹ 2556.39 crore are under implementation to benefit 89.92 lakh people. Further, 5 Under Ground Sewerage Schemes at an estimated cost of ₹ 813.47 crores are under implementation to benefit 9.82 lakh people.

These schemes are implemented with financial assistance under AMRUT from Central Government and also other sources of funds such as State Govt, 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) and Asian Development Bank.



The details of the schemes are as given below:

<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>AMRUT Cost (₹ in crore)</b>	<b>Population (in Lakhs)</b>
1.	Dedicated Water supply scheme to Erode Corporation.	484.45	9.05
2.	Improvement of Water Supply Distribution System to 8 Added Areas of Coimbatore Corporation	395.41	9.22
3.	Water Supply Improvement Scheme to Nagercoil Corporation	223.44	3.90
4.	Improvement of Water supply Distribution System to Tiruppur Corporation.	250.00	19.50
5.	Improvement of Water supply Distribution system to Vellore Corporation in Vellore District.	234.93	9.20
6.	Water Supply Improvement Scheme to Rajapalayam Municipality	180.05	2.15
7.	Improvement of Water supply Distribution System to Hosur Corporation (Phase-I)	87.91	2.29
8.	Improvement of Water supply Distribution system to Ambur Municipality in Vellore District	50.90	1.82
9.	WSIS to expanded Coimbatore Corporation including newly merged areas with River Bhavani as source – Pillur - III	649.30	32.79
	<b>Total</b>	<b>2556.39</b>	<b>89.92</b>

<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>AMRUT Cost (₹ in crore)</b>	<b>Population (in Lakh)</b>
1.	UGSS to added areas Kurichi and Kuniyamuthur of Coimbatore Corporation	442.00	5.17
2.	UGSS to Rajapalayam Municipality	178.75	2.20
3.	UGSS to Ambur Municipality	129.07	1.83
4.	UGSS to Rameshwaram Municipality in Ramanathapuram District	40.33	0.43
5.	Under ground sewerage scheme to Velankanni Town Panchayat in Nagapattinam District	23.32	0.19
	Total	813.47	9.82

### **6.3 Operation and Maintenance of CWSS**

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

556 Combined Water Supply Schemes covering 9 Corporations, 66 Municipalities, 347 Town Panchayats, 48,948 Rural Habitations and 541 Industries / Institutions, benefiting a population of 4.23 Crore are maintained by TWAD Board at present.

An average of 1,869 Million Liters of water was supplied daily upto March 2019 through the above 556 CWSS to the local bodies and Industries/ Organisations as detailed below.

<b>Sl. No.</b>	<b>Name of Beneficiary</b>	<b>No. of Beneficiary</b>	<b>Designed Quantity (in MLD)</b>	<b>Average Supplied Quantity upto March 2019 (in MLD)</b>
1	Corporations	9	267	212
2	Municipalities	66	266	221
3	Town Panchayats	347	358	309
4	Rural Habitations	48,948	1107	1021
5	Industries / Institutions / Commercial Organisations	541	148	106
	<b>Total</b>	<b>49,911</b>	<b>2146</b>	<b>1869 (87%)</b>

- ₹ 244.09 crore have been sanctioned for the rejuvenation of 99 TWAD maintained age old (outlived) CWSS in order to make them function to its full capacity for another 15 years and programmed to be completed during 2019-20.

- ₹ 7.24 crore have been sanctioned for taking up of 79 works under SDRF funds for 2017-18 in 41 TWAD maintained CWSS to mitigate the water supply shortfall in the acute summer during the year 2018 and 50 works have been completed.
- ₹ 20.00 crore have been sanctioned for taking up of 246 works under SDRF funds for 2018-19 in 118 TWAD maintained CWSS to mitigate the water supply shortfall in the acute summer during the year 2019 and 111 works have been completed.

A minimum of 1,800 Million Liters of water supply per day is proposed till August 2019 through the actions taken above and as per the dam storage availability status.

Automatic Water Meters are also being installed in the schemes maintained by the Board for an amount of ₹ 27.00 Crore to monitor and reduce the water loss.

371 diesel generators are kept ready to manage any power supply shortfall during summer peirod.

## **6.4 Water Quality Surveillance and Monitoring**

TWAD Board has established one State level water testing laboratory at Chennai besides 31 District level and 56 sub division level water testing laboratories all over Tamil Nadu in order to achieve the objective of ensuring safe drinking water supply to the public. These laboratories have facilities for testing all the basic physical, chemical and bacteriological water quality parameters and for effective surveillance and monitoring of water supply sources in both Rural and Urban areas. This state level water testing laboratory at Chennai has been recognized as State Referral Institute for Tamil Nadu by the Government of India.

During the year 2018-19, 30,000 water samples have been tested in State and District laboratories with State funds. The State level water testing laboratory, Chennai has been upgraded to NABL accreditation (National Accreditation Board for Testing and Calibration Laboratories).

During 2019-20, it has been proposed to test around 5,100 water samples in the State level

laboratory, 1.02 lakh water sample in 31 District level laboratories and 1.68 lakh water samples in 56 Sub-division level laboratories for water quality monitoring and surveillance under the National Rural Drinking Water Programme.

During 2019-20, it is proposed to fabricate 1500 Field Test Kit (FTK) and conduct awareness programme to school children on testing of water quality in the field.

### **6.5 Hydro Geological Activities:**

The Remote sensing and GIS (Geographical Information Systems) are extensively utilized in scientific source finding activities for identification of sources to various water supply schemes implemented by TWAD Board and identification of suitable locations for Recharge Structures to be taken up under Sustainability Component.

The project on Ground Water Prospect Maps (Hydro Geo Morphological Maps) sanctioned by the Ministry of Drinking Water and Sanitation, Government of India had been taken up and District-wise Block ATLAS have been printed and the copies (both hard & soft copies) along with

water Quality maps (soft copies) are prepared and readily available for sharing with all the departments for their field use. It has taken up as a Research & Development project for Tamiraparani River Basin falling part of Tirunelveli and Thoothukudi Districts, under GOI funds, for the Sustainability of Drinking water sources for future water supply requirements.

The State Planning Commission has sanctioned a pilot project to TWAD Board on 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, each household will be provided with House Service Connection (HSC) and water meter will be fixed. O&M awareness training programme to the community of the Village Panchayat will be imparted for ensuring drinking water security.

TWAD Board has taken up Sustainable Water Security Mission ("SuWaSeM") for Tamil Nadu State to ensure water security to the Urban local bodies at a cost of ₹ 20.00 crore through various methods of rainwater harvesting. This project

is implemented through Commissionerate of Municipal Administration and Directorate of Town Panchayats with TWAD Board as the Nodal Agency for this mission for providing technical assistance on implementation of this mission.

Geo Tagging of drinking water assets such as water supply source, over head tank, School & Anganwadi water supply scheme in the IMIS website have been taken up from March 2017 and 4,16,352 points have been Geo tagged as on 31.03.2019. During the year 2019 - 20, 63,093 points (Sources and delivery points) are to be Geo tagged.

## **6.6 Under Ground Sewerage Schemes**

TWAD Board is implementing Under Ground Sewerage Schemes in the District Head Quarters and other Towns on priority and need basis finalized by the Government.

In line with the objective of the Tamil Nadu Government to provide Under Ground Sewerage Scheme (UGSS) to all the Urban Local Bodies in a



phased manner, TWAD Board has prepared Master Plan comprising 636 Detailed Project Reports with a tentative cost of ₹ 20,820 Crore based on 2011-12 rates to provide UGSS to 5 Corporations, 115 Municipalities and 516 Town Panchayats.

### **6.6.1 Ongoing Under Ground Sewerage Schemes**

Under Ground Sewerage Schemes to Bodinaickanur and Virudhunagar Municipalities have been completed at an estimated cost of ₹98.95 crore during the year 2018-19 to benefit a population of 1.88 lakh through which a overall quantity of 19.73 MLD of wastewater is available for reuse.

21 Under Ground Sewerage Schemes at an estimated cost of ₹ 1345.21 crore, to benefit a population of 18.40 lakh are in various stages of implementation through which on completion 166.99 MLD of wastewater will be available for reuse.

The details of the schemes are as given below:

<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in crore)</b>	<b>Population (in Lakh)</b>
<b>Schemes Completed during 2018-19</b>			
1.	UGSS to Bodinaickanur Municipality	71.10	0.95
2.	UGSS to Virudhunagar Municipality	27.85	0.93
	Total	98.95	1.88
<b>Schemes under progress</b>			
1.	UGSS to Thoothukudi Corporation	85.00	3.00
2.	UGSS to Nagercoil Corporation	110.51	1.81
3.	UGSS to Sivagangai Municipality	31.30	0.82
4.	UGSS to Mettur Municipality	73.09	0.70
5.	UGSS to Arakkonam Municipality	95.52	1.09
6.	UGSS to Thirupathur Municipality	104.01	1.15
7.	UGSS to Rasipuram Municipality	55.42	0.69
8.	UGSS to Karaikudi Municipality	112.53	1.76

<b>Sl. No.</b>	<b>Name of Scheme</b>	<b>Estimate Cost (₹ in crore)</b>	<b>Population (in Lakh)</b>
9.	UGSS to Chidambaram Municipality	75.62	0.91
10.	UGSS to Sattur Municipality	37.66	0.40
11.	UGSS to Sathiyamangalam Mpty	54.26	0.54
12.	UGSS to Pollachi Municipality	109.62	1.08
13.	UGSS to Palanichettipatty TP	34.67	0.46
14.	UGSS to Ulundurpettai TP	38.67	0.37
15.	UGSS to Perunthurai Town Panchayat	54.78	0.45
16.	UGSS to Mettupalayam Municipality	91.70	0.84
17.	UGSS to Thiruporur Town Panchayat	42.00	0.63
18.	UGSS to Ponneri Town Panchayat	54.78	0.83
19.	UGSS to Vallam Town Panchayat	34.51	0.23
20.	UGSS to Manachanallur TP	30.11	0.43
21.	UGSS to S. Kannanur TP	19.45	0.21
	<b>Total</b>	<b>1345.21</b>	<b>18.40</b>

## **6.6.2 New Under Ground Sewerage Schemes for Urban Local Bodies:**

Under Ground Sewerage proposal for Thoothukudi and Coimbatore Corporations prepared for uncovered areas at a total cost of ₹1442.92 Crore are at various stages of approval.

## **6.7 Investigation and Preparation of Detailed Project Reports**

### **6.7.1 Water Supply Schemes:**

TWAD Board has taken up investigation to prepare DPR for 42 Water Supply Schemes during 2018-19, at an estimated cost of ₹ 17931.12 crore, to benefit 154.15 Lakh population covering Coimbatore Corporation, 18 Municipalities, 66 Town Panchayats and 21710 Rural Habitations.

The present stage of the 42 schemes is as detailed below:-

<b>Sl. No.</b>	<b>Description</b>	<b>No. of Water Supply schemes</b>	<b>Beneficiaries</b>	<b>Population benefited (in lakh)</b>	<b>Estimate cost (₹ in crore)</b>
1	Schemes Sanctioned	14	1 Corporation 4 Municipalities, 6 Town Panchayats & 1421 Rural Habitations.	35	1464.51
2	Schemes in various stages of sanction.	11	6 Municipalities, 13 Town Panchayats & 2119 Rural Habitations.	16	2315.05
3	Investigation/ DPR Under preparation	17	8 Municipalities 47 Town Panchayats & 18170 Rural Habitations.	102	14151.56
	Total	42	1 Corporation, 18 Municipalities, 66 Town Panchayats & 21710 Rural Habitations.	154	17931.12

### **6.7.2 Desalination Plants:**

TWAD Board prepared prefeasibility report to install Desalination Plants as permanent measure to enhance the Water supply level in all seasons, in rural and urban areas of Ramanathapuram and Thoothukudi Districts, based on the Announcement made by the Government.

Government has accorded Administrative Sanction for ₹ 1355 crore for setting up of Desalination Plants of 60 mld capacity each at Kuthiraimozhi in Ramanathapuram District and at Alanthalai in Thoothukudi District, to benefit a population of 3.03 Lakh in Ramanathapuram District and 6.88 Lakh in Thoothukudi District.

This proposal has been recommended to National Coastal Zone Management Authorities (NCMA)/MoEF& CC/GoI, New Delhi for clearance as per 'Coastal Regulation Zone Notification, 2011'. Revised Detailed Project Report for setting up of Desalination plant at Kuthiraimozhi in Ramanathapuram District at a cost of ₹ 670.00 Crore has been prepared and funding under scrutiny.

Also, investigation Works are proposed for installing a 98 mld capacity Desalination plant near Marakanam to meet out the water requirement of Villupuram & Tindivanam Municipalities, Marakanam & Vikravandi Town Panchyats and Rural Habitations in Vikravandi, Mailam, Marakanam, Vanur and Kanai Unions in Villupuram District.

### **6.8 Research, Design, Training and Project Management Centre**

The Hon'ble Minister of Municipal Administration & Rural Development and Implementation of Special Programme made an announcement on the floor of Assembly during the demand for the year 2018-19 that Research, Design, Training and Project Management Centre will be formed at Tamil Nadu Water Supply and Drainage Board, Head Office, Chennai.

Accordingly in order to strengthen and upgrade the arms of Tamil Nadu Water Supply and Drainage Board in Research, Design, Training and Project Management, RDT&PMC was formed to act as a "Centre of Excellence".

The Research, Development, Training and Project Management Centre unit takes up the following tasks.

- RDT & PMC Wing of TWAD Board is endowed with one Training Centre at Head Office, Chennai and three Sub Training Centres, one each at Coimbatore, Trichy and Madurai to equip, update & act as a platform to hone the skills.
- Conduct training in tie up with Premier Institutions like IIT, Madras & Anna Institute of Management, Chennai to upgrade Technical & Managerial skills using Application Software like Water Gem, Sewer Gem and STAAD Pro.
- Besides in-house training programs, Special technical training programs to other State Public Health Engineers of Odisha Water Supply & Sewerage Board and Govt. of Arunachal Pradesh has also been conducted.
- Standard type design and drawing for smaller capacities of OHTs up to 60000 litres



have been prepared, vetted by IIT, Madras and communicated to the field for adoption.

- Design and drawing for various components of septage management were prepared and DPRs for 12 Town Panchayats have been prepared.
- Existing Pipe Policy has been reviewed and new guideline for selection of pipes and pipe materials were approved by Board and communicated to field for its adoption in preparation of further Detailed Project Reports.
- Guideline for selection of pump sets is under preparation.
- Water Gem, Sewer Gem and STAAD pro softwares were purchased and installed in all the regional offices and the Head Office at Chennai. Training to field Engineers was also conducted to use the above software through IITM.
- Based on the request of the Tamil Nadu Public Works Department, consultancy

assignment for design of pumping main & allied works for transmission of surplus water from Kosasthalaiyar River to Veeraragava perumal Temple Tank in Tiruvallur has been taken up and completed.

- Facilitating presentation/ demonstration by various Government and private industries to disseminate the latest products available in the market suitable for the upcoming projects and recommend them for inclusion in future Schedule of Rates.
- Research on the efficiency of different duty pump sets connected parallel to the Pumping Main is under consideration.
- Training Program on "E-Tendering Online Bid Submission System" was conducted in order to implement E- Tendering Online Bid Submission System.
- Officers are being deputed regularly to participate in the Seminars, Exhibitions & National/ International level Conferences conducted by Premier Research Institutions

of Government/ recognized leading National and International institutions all over India.

## **6.9 Material Quality control Laboratory in TWAD Board**

There are four material quality control laboratories functioning in TWAD Board at Coimbatore, Madurai, Trichy and Tindivanam. National Accreditation Board for Testing and Calibration Laboratories (NABL) certifications have been awarded to the Laboratories in Coimbatore and Madurai. The conformity assessment of field samples is evaluated regularly as per the procedures in the relevant Bureau of Indian Standards (BIS) prior to its usage at site for all the works taken up by TWAD Board. The testing facilities adorning the laboratories expediently help in quality up gradation during execution. The materials received from local bodies and government organisations are also tested in these laboratories.

During the financial year 2018-19, 6,984 samples have been tested totally in the 4 laboratories.

## **6.10 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, financial accounting and human resources.

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

Water GEM and Sewer GEM software are being utilized for designing latest water supply and sewerage projects.

Quality control in ongoing water supply and sewerage schemes are being monitored through web based online updation of scheme quality monitoring and quality assurance.

The daily pumping data in water supply schemes under the maintenance of TWAD Board are being monitored through online.

Mobile based online inspection monitoring system is implemented for effective inspection and monitoring of schemes. Further, a web based online monitoring system has been implemented for monitoring of material quality testing in regional laboratories.

TWAD Board, Head office and four Chief Engineers offices in Vellore, Madurai, Thanjavur, Coimbatore, and five Superintending Engineers offices in Cuddalore, Trichy, Salem, Tirunelveli and Dharmapuri are interconnected through leased line TNSWAN for effective review of works executed by TWAD Board. This makes coordination and monitoring of all the activities of the TWAD Board more effective.

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

The Government of TamilNadu along with private sector participation established Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) as a public limited company. TNUIFSL has an authorized capital of ₹ 2.00 crore and a paid-up share capital of ₹ 1.00 crore, of which a sum of ₹ 49.00 lakh is contributed by the Government of Tamil Nadu. The other shareholders are ICICI Bank Limited, Housing Development Finance Corporation Limited and IL & FS Financial Services Limited.

Tamil Nadu Urban Development Fund (TNUDF), Water and Sanitation Pooled Fund (WSPF) and other Government Grant Funds are managed by TNUIFSL. The main tasks of the company include project development, project appraisal, project structuring, resource mobilization and fund management.

TNUIFSL provides a spectrum of solutions towards the development of urban infrastructure, right from concept to commissioning of the

projects. TNUIFSL has been operating on profit since its establishment, and dividends are declared & paid regularly.

### **7.1 Tamil Nadu Urban Development Fund (TNUDF)**

The Government of Tamil Nadu with private sector participation established Tamil Nadu Urban Development Fund (TNUDF) as a Trust. The private sector participants are ICICI Bank Limited (ICICI), Housing Development Finance Corporation Limited (HDFC) and IL & FS Financial Services Limited (IL & FS).

This basic objective of TNUDF is to be a sustainable financial intermediary that enhances the flow of private capital to 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 by TNUDF.



A corporate trustee viz., Tamil Nadu Urban Infrastructure Trustee Company Limited (TNUITCL) manages TNUDF. The fund is operated by a Fund Manager viz., the Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL).

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

## **7.2 External Aided Projects**

Three 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), Tamil Nadu Sustainable Urban Development Project (TNSUDP) assisted by the World Bank and Tamil Nadu Urban Flagship Investment Program (TNUFIP) Phase-1 assisted by Asian Development Bank are operated by TNUIFSL. Funds totaling to ₹ 8,386.06 crore are available under the above three lines of credit, as detailed below:

## Size of External Lines of Credit

(₹ in crore)

Sl. No.	Components	TNSUDP	SMIF-TN		TNUFIP	Total
			Phase-II - Part 1	Phase-II - Part 2		
1	Loan to ULBs	1,225.92	344.32	417.36	304.78	2292.38
2	Capital Grants to ULBs	1,225.92	263.02	396.94	646.73	2532.61
3	Grant to Model Cities	389.48	0	0	0	389.48
4	Technical Assistance Grant / performance-based incentive	344.80	0	22.39	148.02	515.21
5	Incremental Administrative Cost and Tax	0	0	0	36.33	36.33
6	Bonds, Other Grants, ULB Contribution	644.88	0	40.70	1934.47	2620.05
	Total	3,831.00	607.34	877.39	3070.33	8386.06

### **7.2.1 KfW (German Development Bank) assisted Sustainable Municipal Infrastructure Financing –Tamil Nadu (SMIF – TN) Program**

The KfW, the German funding agency assisted Sustainable Municipal Infrastructure Financing – Tamil Nadu (SMIF–TN) Program has two phases (Phase-I and Phase-II).

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. The Phase -I of the Program 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 ₹ 607.34 crore (Euro 80 million). The project implementation period of the Program is between December 2012 and June 2018. The project implementation period has been extended up to December 2018. However, considering the progress of sub-projects, further extension up to June 2020 has been sought for completion of the program. This assistance is provided both as 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 100.00 million) is 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 5.00 million) has been earmarked as loan for Water and Sanitation Pooled Fund to facilitate the mobilization of resources from capital market by issue of Municipal Bonds. The implementation period of the Program is between June 2014 and December 2019.

The funding assistance of ₹ 1,421.62 crore has been committed for 35 sub-projects under the SMIF-TN-II-Part-1 and Part-2 Programs.

### **7.2.2 World Bank assisted Tamil Nadu Sustainable Urban Development Project (TNSUDP)**

The World Bank is assisting the implementation of Tamil Nadu Sustainable Urban Development Program (TNSUDP). The objective of the Program is to improve urban services in participating Urban

Local Bodies in a financially sustainable manner and to pilot improved urban management practices in selected cities. The total out lay of TNSUDP is ₹ 3,831.00 crore (US\$ 600.00 million), of which the World Bank assistance is ₹ 2,554.00 crore (US \$ 400.00 million). The contribution of the State Government & other sources being ₹ 1,277 crore (US \$ 200 million). The project implementation period is between June 2015 and March 2022. The funding assistance of ₹ 2,474.33 crore has been committed for 14 sub-projects under TNSUDP.

### **7.2.3 Tamil Nadu Urban Flagship Investment Program (TNUFIP) assisted by Asian Development Bank (ADB)**

The Asian Development Bank (ADB) assisted Tamil Nadu Urban Flagship Investment Program (TNUFIP) has three phases (Phase-I, Phase-II and Phase-III). The objective of the Program is to develop priority water supply, sewerage and drainage infrastructure located within strategic industrial corridors of Tamil Nadu, support innovative pilots, improve urban governance and strengthen the capacity of State and local institutions to enhance environmental

sustainability, climate resilience and urban livability. The total outlay of all the three phases is about ₹ 8,155.81 crore (US \$ 1268.40 million) with ADB assistance of ₹ 3,227.86 crore (US \$ 502.00 million).

The total outlay of Phase-1 is ₹ 3070.33 crore (US \$ 477.50 million) with ADB assistance of ₹ 1099.53 crore (US \$ 171.00 million). The contribution of the State Government & other sources being ₹ 1,970.80 crore (US \$ 306.50 million). The project implementation period is between November 2018 and December 2023. The funding assistance of ₹ 951.51 crore has been committed for 9 sub-projects under TNUFIP Phase-1. The appraisal for the Phase-2 of the program is under process by ADB.

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

The Government of Tamil Nadu has created Water and Sanitation Pooled Fund (WSPF) 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 pooled finance structure,
- To facilitate the participation of private sector in water and waste water sectors through direct investment and public private partnership,
- To enable urban local bodies to access debt finance from markets and
- To act as the Nodal Agency on behalf of Central and / or State Government for water, sanitation and/or any other infrastructure projects.

A sum of ₹ 302.30 crore has been mobilized via taxable and tax-free bonds by WSPF as given below:

<b>Sl. No.</b>	<b>Details</b>	<b>₹ crore</b>
1	9.20%, 15 year Non-Convertible Redeemable Bonds Taxable bonds issued by pooling the requirements of 13 ULBs in the year 2002.	30.41
2	7.25%, 10 year Tax Free Non-Convertible Redeemable Bonds under PFDF Scheme Tax free bonds (first tranche) issued by pooling the requirements of 7 ULBs under the Pooled Finance Development Fund (PFDF) scheme of Government of India in the year 2008.	6.70
3	7.50%, 10 year Tax Free Non-Convertible Redeemable Bonds under PFDF Scheme Tax free bonds (second tranche) issued by pooling the requirements of 7 ULBs under the PFDF scheme of Government of India in the year 2010.	83.19
4	10.60%, 10 year Non-Convertible Redeemable Bonds Taxable bonds (first tranche) issued by pooling the requirements of 10 ULBs in the year 2012 under SMIF-TN Program	51.00
5	8.71%, 10 year Non-Convertible Redeemable Bonds Taxable bonds (second tranche) issued by pooling the requirements of 10 ULBs in the year 2013 under SMIF-TN Program	51.00
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
	<b>Total</b>	<b>302.30</b>



## **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 services projects like roads, storm water drains, street lighting, water supply and sanitation in Chennai and its suburban areas. The fund is provided through budgetary provision every year by the Government. The Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL) has been designated as the Nodal Agency for CMCDM. A sum of ₹ 2,500.00 crore has been allotted to implement the scheme from 2011 to 2018. The scheme has been re-launched in the year 2018-19 and a sum of ₹ 500.00 crore has been allocated.

The capital grant assistance of ₹ 2,992.10 crore (including ₹ 500.00 crore for the year 2018-19) as well as the technical grant assistance of ₹ 7.90 crore have been fully committed under this mission, to implement

projects costing ₹ 3,832.50 crore (including ₹ 623.34 crore for the year 2018-19). A sum of ₹ 2,135.67 crores has been disbursed to both Greater Chennai Corporation and Chennai Metropolitan Water Supply and Sewerage Board & for consultancy and fees.

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

The Government of Tamil Nadu is committed to enhance the ecological condition of rivers and water bodies. The Chennai Rivers Restoration Trust (CRRT) was set up to pursue necessary action in this direction. The State has directed Chennai Rivers Restoration Trust to carry out the primary functions of planning, coordinating and monitoring activities for the restoration of rivers and water bodies, viz., Cooum, Adyar, Kosasthalaiyar rivers, the Buckingham Canal along with other smaller canals and water bodies in the Chennai Metropolitan Area. To achieve the goals set for it, Chennai Rivers Restoration Trust has taken up numerous initiatives by adopting an integrated approach by engaging various line departments in its eco-restoration projects.

### **8.1 Eco-Restoration of Adyar Creek**

A pioneering urban wetland conservation initiative was taken up by the Government of Tamil Nadu in the degraded 358 acres of Adyar Creek and Estuary. The restoration activities in Phase-I were undertaken in the 58 acres of Adyar

Creek, which was once a place for disposal of sewage, municipal solid waste and construction debris and which had completely led to the severe degradation of surface and ground water quality and destruction of 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 major restoration activities undertaken are: (i) increasing the water spread and 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.

Adyar Eco-Park is now functioning as a centre for Environmental Education and Research. Students from various schools and colleges across the city regularly attend the environmental awareness programmes which impart knowledge on the coastal wetland ecosystem. As on 15th June, 2019, a total of 86,155 students and 4353 teachers from 1061 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 Adyar Eco-Park.

The Adyar Eco-Park showcases the efforts taken by the Government in the field of conservation and protection of wetlands and imparts environmental education to the general public on all Tuesdays, Thursdays and Saturdays. Thus, far between July 2014 and June 2019, a total of 12,422 general visitors have visited the Eco-Park.

Regular ecological and biodiversity monitoring is being taken up in order to assess the impact and success of the restoration activities. The restoration process of Adyar Eco-Park has to comply with Designated-Best-Use Class 'D', which, according to the Central Pollution Control Board 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 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	2018 -19
Molluscan	-	-	-	6	6	6	8	8	8
Crabs	-	-	4	9	9	9	9	13	13
<u>Insects</u>									
a) Dragonflies	-	-	12	15	17	19	25	25	35
b) Butterflies	-	-	51	55	56	60	73	73	80
c) Other insects	-	-	-	-	-	-	-	52	55
Fishes	14	27	27	10	10	6	10	10	12
Amphibian	7	10	10	10	10	10	10	10	10
Reptiles	19	19	19	19	19	19	19	19	19
Birds	88	90	98	100	97	99	103	105	120
Mammals	13	13	13	15	15	16	16	16	16
Total	141	159	234	239	239	244	273	331	368

## **8.2 Eco-Restoration of Adyar Estuary**

In continuation of the restoration of Adyar Creek in 58 acres, an extent of 300 acres of Adyar creek, estuary, islets, mudflats and surrounding areas was taken up for restoration under Phase-II. This creek and estuary area was infested with exotic species like *Prosopis juliflora*, with indiscriminate 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 degradation of biodiversity.

Bund stabilization, removal of debris and plastics and other restoration activities enhanced the tidal interaction and increased the water spread in the degraded Creek and Estuary. Around 57000 mangroves and 35000 terrestrial saplings have been planted. All this has increased the bio-diversity of the Adyar Creek and Estuary eco-system.

### **8.3 Integrated Cooum River Eco-Restoration Project**

The Cooum River originates from the surplus course of Cooum tank in Tiruvallur District. It runs east for a distance of about 70 kilometres and confluences with the Bay of Bengal, south of Fort St. George, just downstream of Napier Bridge. The eco-restoration plan covers the stretch from Paruthipattu check dam to the river mouth in the Bay of Bengal for a length of 32 Km. 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 will be implemented in three phases. The short term plan covers a period of three years for which the Government of Tamil Nadu accorded administrative sanction to Chennai Rivers Restoration Trust for implementing Sixty (60) sub-projects committed under Phase-I at an estimated cost of ₹ 604.77 crore.



All the sub-projects have been commenced by the concerned departments and are 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 & Rehabilitation of Project Affected Families (PAFs) by the Tamil Nadu Slum Clearance Board. So far, 8166 Project Affected Families (PAFs) living on the banks of the Cooum River have been resettled and rehabilitated.

As the Nodal Agency the Chennai Rivers Restoration Trust is entrusted with the effective implementation of the project. A Project Management Consultant (PMC) is monitoring the sub-projects being executed by line departments.

CRRT is conducting regular community education programmes and will initiate the works of plantation of native plants and mangrove vegetation.

Out of ₹ 604.77 crore, so far ₹ 190.90 crore have been disbursed to implementing agencies.

#### **8.4 Adyar River Restoration from Origin to Mouth - Phase-III**

Adyar river has its origin at Adhanur lake near Guduvancheri. Surplus water from Chembarambakkam lake joins near Thiruneermalai giving it shape as a river and flows 42 km through the districts of Kancheepuram and Chennai. It confluences with the Bay of Bengal near Adyar. Adyar river has been under heavy anthropogenic disturbance for a very long time and is degraded to an extent. 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 have accorded Administrative Sanction of ₹ 555.46 crores vide G.O. (Ms.) No.72, Municipal Administration & Water Supply (MC.1) Department, Dated 12.07.2017 for the implementation of Adyar River Restoration from origin to the river mouth. All the participating 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 entrusted with them and they are under various stages of implementation. 4398 Project Affected Families (PAFs) living on the banks of the Adyar River have thus far resettled and rehabilitated.

Coastal Regulation Zone (CRZ) Clearance has been obtained from District Coastal Zone Management Authority (DCZMA) for 13 sub-projects which fall within CRZ area i.e., from river mouth to Saidapet bridge - 7.5 km. The Rapid Environment Impact Assessment Report

has been submitted to Tamil Nadu State Coastal Zone Management Authority (SCZMA) for sanction and it is under process.

### **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 have been prepared to mitigate the pollution into Cooum and Adyar river and the Buckingham Canal.

1. Detailed Project Report for Plugging of outfalls, Interception & Diversion of Sewage, Solid Waste Management and Rehabilitation and Resettlement in Major drains in Cooum Basin.
2. Detailed Project Report for plugging of outfalls, interception and diversion of sewage, Solid waste management and Rehabilitation and Resettlement in major drains in Adyar Basin.

3. Detailed Project Report (DPR) for restoration of Buckingham canal in Chennai Metropolitan Area from Ennore creek to Muttukadu backwaters and all major drains draining into Buckingham Canal.

To rejuvenate the creek ecosystem within Chennai Metropolitan Area, the following Detailed Project Report (DPRs) are being prepared:

1. Comprehensive Master Plan and Detailed Project Report (DPR) for the Eco-restoration of Kovalam creek.
2. Comprehensive Master Plan and Detailed Project Report (DPR) for the Eco-restoration of Ennore creek.

## **9. Tamil Nadu Urban Finance and Infrastructure Development Corporation (TUFIDCO)**

The Tamil Nadu Urban Finance and Infrastructure Development Corporation (TUFIDCO) was formed on 21.03.1990 under Companies Act, 1956 by Government of Tamil Nadu. TUFIDCO is having a major role in the overall infrastructure development of Urban Local Bodies and parastatal agencies by providing financial and technical assistance.

TUFIDCO is the Mission Directorate for Smart Cities Mission and AMRUT scheme. TUFIDCO also acts as a Nodal Agency for the following schemes:

1. Jawaharlal Nehru National Urban Renewal Mission – Urban Infrastructure and Governance (JnNURM-UIG),
2. Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT),
3. Urban Infrastructure Development Scheme for Satellite Towns (UIDSST),
4. Metropolitan Infrastructure Development Fund (MIDF) and
5. Integrated Urban Development Mission (IUDM).

TUFIDCO also functions as a Fund manager for Capital Grant Fund (CGF) and Operation and Maintenance Gap Filling Fund (OMGFF).

### **9.1 Smart Cities Mission:**

The Government of India have selected 100 cities throughout India to develop as 'Smart Cities' by upgrading infrastructure and smart applications. It improves the quality of life, efficiency of urban operations and meets the present and future generations with respect to economic, social and environmental aspects. 11 cities have been selected in Tamil Nadu to develop as 'Smart Cities'. The selected Smart Cities are Chennai, Coimbatore, Madurai, Thanjavur, Salem, Vellore, Tiruppur, Thoothukudi, Tirunelveli, Tiruchirappalli and Erode.

The implementation of Smart City project is being done by a Special Purpose Vehicle (SPV) formed at City-level. Under this Mission, each city is getting ₹ 500 crore as Central assistance and ₹ 500 crore as State grant for implementing various smart cities projects.

Following are the details of city wise project cost and no. of projects taken up under Smart Cities Mission.

<b>SI No.</b>	<b>City</b>	<b>No. of Projects</b>	<b>Project Cost (₹ in Crore)</b>
1	Chennai	40	947.30
2	Coimbatore	34	1178.20
3	Madurai	14	1242.95
4	Thanjavur	30	1001.29
5	Salem	39	941.30
6	Vellore	34	883.29
7	Tiruppur	26	1103.63
8	Thoothukudi	44	1053.65
9	Tirunelveli	31	1074.67
10	Tiruchirappalli	19	1140.24
11	Erode	16	986.78
	<b>Total</b>	<b>327</b>	<b>11553.40</b>

Out of 327 projects sanctioned at a cost of ₹ 11553.40 Cr, 38 projects at a cost of ₹ 132.70 Cr have been completed, 178 projects at a cost of ₹ 4904 Cr. are under execution and the remaining projects are under various stages of implementation.



## 9.2 Atal Mission for Rejuvenation and Urban Transformation (AMRUT)

With an aim to provide basic services to households and build amenities in cities and to improve the quality of life, especially the poor and the disadvantaged, the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) scheme was launched on 25th June 2015 in 500 cities throughout India. Water supply, Sewerage and Septage Management, Storm Water Drainage, Urban transport and provisions of green and open spaces are the key projects under AMRUT.

In Tamil Nadu, following 15 Municipal Corporations, 12 Municipalities and 1 Town Panchayat (28 towns/ Cities) are identified as AMRUT Cities / Towns.

SI No	Name of the ULBs	SI No	Name of the ULBs
1.	Greater Chennai Corporation	15.	Avadi Corporation
2.	Coimbatore Corporation	16.	P a l l a v a p u r a m Municipality
3.	Madurai Corporation	17.	Tambaram Municipality
4.	Tiruchirappalli Corporation	18.	Cuddalore Municipality
5.	Salem Corporation	19.	Kancheepuram Municipality
6.	Tirunelveli Corporation	20.	Tiruvannamalai Municipality

7.	Tiruppur Corporation	21.	Kumbakonam Municipality
8.	Thoothukudi Corporation	22.	Rajapalayam Municipality
9.	Thanjavur Corporation	23.	Pudukottai Municipality
10.	Erode Corporation	24.	Ambur Municipality
11.	Vellore Corporation	25.	Karaikudi Municipality
12.	Dindigul Corporation	26.	Nagapattinam Municipality
13.	Nagercoil Corporation	27.	Rameswaram Municipality
14.	Hosur Corporation	28.	Velankanni Town Panchayat

### 9.2.1 Financial Assistance Pattern:

The Government of India, State Government and ULB share on the project cost are as follows:

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

Tamil Nadu has unique position as State has been allocated one of the highest grants under AMRUT in the country with 445 projects sanctioned at a cost of ₹ 11441.32 crore. Out 445 projects, 411 projects at a cost of ₹ 305.89 crores have been completed and the remaining 34 projects are under 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)**

<b>Sl No</b>	<b>Name of the Project</b>	<b>Project Cost (₹ in Cr.)</b>
1	Improvement in Water Supply Distribution System in Ambur Municipality	50.90
2	Improvement of Water Supply Distribution System to Extended Areas(Thudiyalur, Vellaikinaru, Chinnavedampatti, Saravanampatti, Vilankurichi, Kalapatti, Kuniyamuthur & Kurichi) in Coimbatore Corporation	395.41
3	Dedicated Water Supply Scheme in Erode Municipal Corporation	484.45
4	Improvement of Water Supply Distribution System in Hosur Corporation	87.91

<b>SI No</b>	<b>Name of the Project</b>	<b>Project Cost (₹ in Cr.)</b>
5	Water Supply Improvement Scheme in Nagercoil Corporation	223.44
6	Water Supply Improvement Scheme in Rajapalayam Municipality	180.05
7	Improvement of Water Supply in Thanjavur Municipal Corporation	48.14
8	Improvements to Water Supply Distribution System to the added areas in Tiruppur Municipal Corporation	250.00
9	Improvements to Water Supply Distribution System in Vellore Municipal Corporation	234.93
10	Water Supply Source Improvement Works to Velachery, Alandur, Ullagaram Puzhuthivakkam, Medavakkam, Kovilambakkam, Nanmangalam and Moovarasampettai in Greater Chennai Corporation	954.00
11	Underground Sewerage Scheme in Velankanni Town Panchayat	23.32
12	45 MLD TTRO Plant – Kodungaiyur in Greater Chennai Corporation	223.91
13	Underground Sewerage Scheme for left out areas in Pallavaram Municipality	25.37
14	Parks – 98 Nos (25 AMRUT Cities)	63.67
	<b>Total</b>	<b>3245.50</b>

## State Annual Action Plan II (2016-17)

SI No	Name of the Project	Project Cost (₹ in Cr.)
1	24 x 7 water supply in Coimbatore Corporation	506.04
2	Water supply scheme to added areas (Uthandi, Jalladampettai, Mathur, Madipakkam and Neelangarai) in Greater Chennai Corporation	184.11
3	Water supply Source Improvement in Greater Chennai Corporation	125.89
4	Distribution System Improvement in Kumbakonam Municipality	40.50
5	Underground Sewerage at Coimbatore Corporation	442.00
6	Underground Sewerage Scheme – Phase I in Vellore Municipal Corporation	248.26
7	Underground Sewerage Scheme - Phase II in Vellore Municipal Corporation	343.69
8	Underground Sewerage Scheme to Added Areas (Manali, Chinna sekkadu, Karambakkam, Manapakkam) in Greater Chennai Corporation	223.00
9	45 MLD TTRO Plant at Koyambedu in Greater Chennai Corporation	394.00
10	Underground Sewerage Scheme to left out areas in Kumbakonam Municipality	59.84
11	Underground Sewerage Scheme - Phase I in Tiruchirappalli Municipal Corporation	344.00

<b>SI No</b>	<b>Name of the Project</b>	<b>Project Cost (₹ in Cr.)</b>
12	Underground Sewerage Scheme to Added Areas in Tirunelveli Municipal Corporation	289.01
13	Underground Sewerage Scheme Phase II in Tirunelveli Municipal Corporation	381.86
14	Underground Sewerage Scheme in Rameswaram Municipality	40.33
15	Parks - 157 Nos (25 AMRUT Cities)	77.95
	Total	3700.48

### **State Annual Action Plan III (2017-20)**

<b>SI No</b>	<b>Name of the Project</b>	<b>Project Cost (₹ in Cr.)</b>
1	Pillur III Water supply in Coimbatore Corporation	649.30
2	Dedicated Water Supply Scheme in Madurai Municipal Corporation	1020.00
3	Water supply - Source Improvement in Tiruppur Municipal Corporation	992.94
4	Distribution System Improvement - Valasaravakkam in Greater Chennai Corporation	67.74
5	Underground Sewerage Scheme in Ambur Municipality	129.07
6	Underground Sewerage Scheme in Rajapalayam Municipality	178.75

<b>SI No</b>	<b>Name of the Project</b>	<b>Project Cost (₹ in Cr.)</b>
7	Underground Sewerage Scheme in Tiruppur Municipal Corporation	525.92
8	Underground Sewerage Scheme in Greater Chennai Corporation	576.76
9	Underground Sewerage Scheme – Phase –II in Tiruchirappalli Municipal Corporation	264.12
10	Parks - 154 Nos (25 AMRUT Cities)	90.85
	Total	4495.45

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

The Revolving Fund created from the erstwhile Mega City Scheme in TUFIDCO was converted into Metropolitan Infrastructure Development Fund (MIDF) for sanction of projects in Chennai Metropolitan Area.

34 projects at a cost of ₹ 4342.65 crore have been taken up. Funds are sanctioned as soft loans to the ULBs/ Para-statal agencies under the scheme in which the MIDF contribution is ₹ 1156.47 Cr. Out of 34 projects sanctioned,

27 projects have already been completed. The remaining 7 projects are under various stages of implementation.

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

A Revolving fund was created out of the subsumed UIDSSMT scheme by TUFIDCO. Out of this fund, various Water supply and UGSS Internal Plumbing projects were sanctioned to Corporations / Municipalities during 2018-19. The details are as below:

(₹ in Crore)

S. No.	Sector	No. of Municipalities / Corporations	UIDSSMT Revolving fund sanctioned
1.	Water Supply	73	169.58
2.	UGSS	26	193.22
	Total	99	362.80

The sanctioned projects are under various stages of implementation.



## **9.5 TUFIDCO Infrastructure Funding Scheme (TIFS)**

With the objective of supplementing financial assistance to Government supported projects and Medium-to-long term lending to Urban Local Bodies and Government Agencies for infrastructure projects, TUFIDCO Infrastructure Funding Scheme (TIFS) was formed. Share Capital, Reserves & Surplus and loans from Banks constitute the funding source for this scheme.

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

Integrated Urban Development Mission, a State flagship programme, was operational from 2011-12 to 2016-17 (5 years) aiming to improve basic infrastructure facilities 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.

Under this scheme, 13,445 projects were sanctioned at a cost of ₹10,773.22 crore (fully

funded/partly funded). Out of the sanctioned 13,445 projects, 13,189 projects have been completed and the remaining 256 projects are at various stages of implementation.

The scheme was re-launched by Government of Tamil Nadu to be operational from the year 2018-19 onwards with the allocation of ₹ 750 Cr per year. The details of project sanctioned during 2018-2019 are as follows:-

**₹ in Crore**

<b>Sector</b>	<b>Numbers of work</b>	<b>Project Cost</b>	<b>IUDM Share</b>	<b>ULB Share / Others</b>
Water Supply	28	423.86	422.71	1.15
Sewerage	57	238.82	238.82	
Roads	414	427.99	349.29	78.71
Storm Water Drains	41	103.79	101.06	2.73
Septage Management	11	31.17	31.17	
Others	2	7.90	7.90	
<b>Total</b>	<b>553</b>	<b>1234.00</b>	<b>1151.00</b>	<b>82.59</b>

Considering the fund requirement and implementation period for water supply and UGSS

projects, ₹ 1234 crore worth of projects have been takenup and ₹ 750 crore have been sanctioned under Budget provision 2018-2019.

## **9.7 Fund Manager for the State Government Schemes**

Considering the requirement to improve Infrastructure facilities in Urban Local Bodies, the Government of Tamil Nadu has created Capital Grant Fund (CGF) and Operation and Maintenance Gap Filling Fund (O&MGFF). The Government has appointed TUFIDCO to manage fund for the above schemes.

During the year 2018-19, an amount of ₹ 787.24 Crore has been released under CGF and ₹ 209.30 Crore under Operation and Maintenance Gap Filling Fund based on the sanctions of the Government.

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

New Tirupur Area Development Corporation Limited (NTADCL) was formed in 1995 by the erstwhile Tamilnadu 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 the water supply and sewerage infrastructure needs of Tirupur and adjacent areas. The SPV was promoted by Tamilnadu Water Investment Company Limited (TWIC) which was formed with 54% equity of Infrastructure Leasing & Financial Services (IL&FS) and 46% equity of Government of Tamilnadu.

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 upto 250 MLD. The project was implemented at a cost of ₹ 1023 crores 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. This apart, 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 wayside 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. The subsequent introduction of common effluent treatment facilities resulting in the re-use of water, has resulted in the industrial demand for water in Tirupur being substantially reduced since February 2011. As a result, NTADCL 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 addressed in 2011-12 through a Corporate Debt Restructuring (CDR) package, under which the lenders rescheduled the debt, reduced the interest rate and converted 15 per cent of the debt into equity. Further, Government infused equity share capital of ₹ 150 crore and assured to purchase up to 100 MLD of water additionally for domestic usage from the company. Presently, around 56 MLD of water is being supplied additionally to Tiruppur Corporation and 9 MLD to wayside Villages for domestic use.

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 9 MLD. Hence 65 MLD of water is being supplied additionally for domestic usage in Tirupur Corporation and wayside Villages. The total quantity of water supplied for domestic use is thus 131 MLD.

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 quantity of water 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. With these supports from GoTN, NTADCL is making better cash accruals thereby is able to prepay one year lenders' obligation in advance.

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. Further, GoTN have given clearance to engage NTADCL as "Construction, Management and Supervision Consultant".

The recent defaults by the IL&FS group of companies and the takeover of management by a Board appointed by the Ministry of Corporate Affairs, Government of India have not caused an adverse impact on the functioning of NTADCL.



The Company has been placed in the “Green” category, as being able to continue to function with its own resources. NTADCL is thus, continuing to meet its obligations under the Concession Agreement and serve the people in and around Tirupur.

## **11. Tamil Nadu Water Investment Company Limited**

Government of Tamil Nadu and Infrastructure Leasing and Financial Services Limited (IL&FS), formed Tamil Nadu Water Investment Company Limited (TWIC) as a Special Purpose Vehicle, under Companies Act, 1956 as an investment Company to promote the first PPP in water sector, namely New Tirupur water project an Integrated Water Supply and Sewerage Project. TWIC has expertise ranging from urban water and sewerage systems, recycling, desalination, industrial effluent management and facilitates in developing projects from concepts to implementation through a model aimed at reducing life cycle costs within a sustainable framework.

New Tirupur Area Development Corporation Limited (NTADCL) is promoted by Tamil Nadu Water Investment Company Limited (TWIC). It holds 28.72% of the share capital in NTADCL.

The Company has over the years developed leadership in Industrial effluent management and urban water management. It developed expertise

in unique Zero Liquid Discharge Technology (ZLD) and Brine Reuse technology. The company has been engaged as Project Management Consultant by Government of Tamil Nadu for the establishment of Textile Parks with ZLD based CETPs at Kadayampatti, Sri Bhavani, Perundurai SIPCOT in Erode District, Green Kaveri Environmental Company at Pallipalayam and Komarapalayam at Namakkal District. It had prepared DPR for 60 MLD Desalination Plant at SIPCOT and 60 MLD Desalination Plant for Tamil Nadu Water Supply and Drainage Board at Kuthiraimozhi, Water Management Detailed Project Reports using concept of District Metering for 9 Corporations, Under Ground Drainage for Salem and Avadi, Pollution abatement feasibility projects through TNPCB for Vaigai, Bhawani and Cauveri river stretches, DPR for 60 Water bodies under Greater Chennai Corporation and development of T.Nagar Smart City, 24x7 Water supply Detailed Project Reports.

In addition, the Company has been engaged as Project Management Consultancy by Chennai

Metropolitan Water Supply and Sewerage Board for construction of Tertiary Treatment Reverse Osmosis Plants at Kodungaiyur and Koyambedu. Also acting as Project Management Consultancy for Water Supply Improvement Scheme under Smart Mission for Thanjavur Municipal Corporation, Supervising the restoration of Zamin Pallavaram Eri and Keelkattalai Eri in Pallavaram Municipality, STP under Thoothukudi Smart City Mission, UGSS & Water Supply Improvement Scheme in Kumbakonam Municipality, Storm Water Drain in Cuddalore Municipality and also, 100 MLD Desalination Plant of Gujarat Industrial Development Corporation (GIDC) and 7 Desalination Plants of Gujarat Water Infrastructure Ltd (GWIL).

The Company provides Operation & Maintenance services to nine Zero Liquid Discharge (ZLD) Common Effluent Treatment Plants (CETPs) at – Arulpuram, Rayapuram, Murugampalayam, Chinnakarai, Kasipalyam, Kunnakalpalayam, S.Periyapalayam, and Perundurai. In addition company has got following recognition from Government of Tamil Nadu and Government of India.

## 11.1 Government of Tamil Nadu

- An Ordinance was promulgated by the Honorable Governor, Government of Tamil Nadu. Published in Tamil Nadu Government Gazette (No.333) Extraordinary dated 17.10.2017 - providing exemption under the Tamil Nadu Tender Transparency Act, 1998 (Tamil Nadu Act 43 of 1998) Section 16 for the procurement of consultancy and financial services for Tamil Nadu Water Investment Company Limited
- In G.O.(Ms) No.132 MAWS (MA3) Department, dated 31.12.2012 and G.O.(3D) No.10 MAWS (MA3) Department dated 16.05.2017, Government of Tamil Nadu nominated TWIC as Project Management Agency (PMA) for implementing the following on behalf of the Government:
- Dedicated Agency for Development and Operation & Maintenance of Common Effluent Treatment Plants for Government of Tamil Nadu.

- Industrial water supply through Reuse of Sewerage water and Desalination.
- Government of Tamil Nadu/Commissionerate of Municipal Administration appointed TWIC for Capacity Building under World Bank funding where, 135 Municipal/ Corporation Engineers from various ULBs have been trained both in India and Manila, Philippines. The Engineers have been certified by the accredited International body after necessary tests.

## 11.2 Government of India

- TWIC has been a Knowledge partner to the Ministry of Textiles (MoT), Government of India.
- Consultant to National Mission for Clean Ganga (NMCG), Ministry of Water Resources & Ganga Rejuvenation (MoWR).
- TWIC has signed MoU for Sea Water Reverse Osmosis desalination plants for Paradip Port Trust with NIOT (National Institute of Ocean Technology).

- TWIC is appointed as Domain Expert in the Expert Committee for monitoring/ evaluation of Science and Engineering Research Board (SERB) in the Central Government scheme named as *Uchhatar Avishkar Yojana*.
- TWIC is appointed as Member of Domain Expert Group for project "Deployment Water Technologies" by CSIR, Department of Science & Technology, Govt. of India.

The turnover of the Company has increased to ₹ 46.00 crores in 2018-2019 against ₹ 35.00 crores in 2017-2018. The company has set an ambitious target of achieving sale turnover of ₹ 58.00 crores in 2019-2020.

The recent turmoil in the IL&FS group of companies and consequential takeover of management by a Board appointed by the Ministry of Corporate Affairs, Government of India have

not caused an adverse impact on the functioning of TWIC. The Company has also been placed in the “Green” category and being able to continue to function with its own resources.

**S.P. VELUMANI**

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